



ERSA2025 Congress

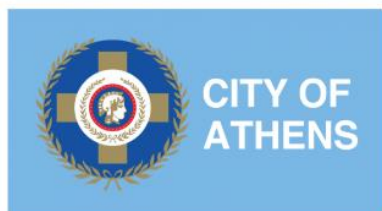
Abstract book

Organisers and Partners

Organisers



Partners & Sponsors



List of Abstracts

4

Analysis of CO₂ Emissions in Lithuania's Transport Sector: Trends, Challenges, and Mitigation Strategies

Prof. Rita Bužinskienė¹

¹Šiauliai Higher Education Institution, Šiauliai, Lithuania

G05-O1 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 27, 2025, 11:00 AM - 1:00 PM

The transport sector represents a major contributor to CO₂ emissions in Lithuania, posing a significant challenge to the nation's ability to fulfill its climate commitments. Over the past decade, emissions from the sector have exhibited a marked increase, primarily driven by an aging vehicle fleet, a continued reliance on fossil fuels, and a growing demand for road transportation. Despite the implementation of various policy measures, including the promotion of electric vehicles, the enhancement of public transport infrastructure, and the introduction of carbon taxation, progress in reducing emissions has been relatively limited.

The primary aim of this study is to analyze historical emission trends, identify the principal factors influencing these emissions, and evaluate the effectiveness of current mitigation policies. The research utilizes publicly accessible data from national and international sources, such as the Lithuanian Environmental Protection Agency, Eurostat, and the European Environment Agency. Employing a mixed-methods approach, the study integrates quantitative trend analysis with a qualitative examination of relevant policy frameworks and advancements in green technology.

The findings highlight key challenges impeding emission reductions, including infrastructural limitations, inadequate regulatory mechanisms, and slow societal adoption of sustainable transport solutions. Based on these insights, the study proposes targeted strategies to enhance mitigation efforts. These include accelerating the transition to sustainable transport systems through increased adoption of zero-emission vehicles, fostering innovation in green mobility technologies, and reinforcing regulatory frameworks to ensure effective policy implementation.

This research emphasizes the critical importance of addressing emissions from the transport sector to achieve Lithuania's climate objectives and contribute to broader sustainability goals. By providing a comprehensive analysis of emission trends and policy impacts, the study offers actionable recommendations to guide future strategies in fostering a low-carbon transport sector.

Household adaptation matters: regional macroeconomic effects of private adaptation to floods

Dr. Theodoros Chatzivasileiadis¹

¹TU Delft, Delft, The Netherlands

S15 Regional Climate Change Adaptation, G5, August 27, 2025, 4:30 PM - 6:30 PM

Our research evaluates the economic impacts of household inaction versus adaptation to river floods, utilising the EU-EMS regional CGE model. We integrate regional damage data, adaptation cost-effectiveness for future climate scenarios, and household flood damage shares to enhance assessment granularity at the NUTS2 level, revealing indirect climate change effects often obscured in national assessments. Calibrating household expenditure data across income quintiles allows accurate estimation of adaptation impacts. We explore various financing options to inform policymakers at regional and national levels. Additionally, we assess the optimal timing for household adaptation, considering each country's capacity to manage climatic and adaptation challenges. Projected direct river-flood losses in Europe by 2100 are €44 billion annually, reducible to €8.1 billion with adaptation. Without adaptation, household flood damages could increase GDP by 0.15% in 2050 and 0.2% in 2100 due to forced reconstruction efforts. However, combined damages to firms and households reverse this effect. Household adaptation yields higher national and regional GDP compared to the baseline, with a 0.4% GDP increase in 2100, translating to an aggregate. Gains are unevenly distributed, with Denmark, Greece, Italy, Croatia, and Germany benefiting most. A government loan system to support household adaptation shows significant positive GDP impacts, particularly in countries previously facing negative GDP responses. The timing of household adaptation is crucial; immediate action is beneficial in some countries, while a delayed approach is better for others. Regional analysis reveals significant disparities in national versus regional outcomes, emphasising the need for region-specific adaptation strategies. Our findings provide actionable insights for policymakers to optimise economic outcomes through strategic household adaptation to river floods

Innovative approaches to empowering forgotten spaces within the framework of the European Union

Prof. Vítor João Pereira Domingues Martinho¹

¹Agricultural School (ESAV) and CERNAS-IPV Research Centre, Polytechnic Institute of Viseu (IPV), Viseu, Portugal

G12-O4 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 29, 2025, 11:00 AM - 1:00 PM

Unbalanced development creates injustices for some sectors of society and spaces, for which it is not easy to find solutions that can mitigate the impacts of the respective social and regional asymmetries. This is particularly worrying in the regional development, where these asymmetric developments seem to be self-reinforcing through cumulative processes, as explained in economic theory. This means that the richest spaces and contexts can become even richer and the poorest even poorer. These frameworks call for innovative approaches, notably to empower the populations living in the forgotten spaces. Some of these people have their personal and professional activities in the rural areas. Sometimes, the solutions to mitigate these spatial trends are known, however, in some circumstances, there is a lack of political interest, due to economic pressures, for example. In any case, the policy instruments and the stakeholder involvement can make relevant contributions to dealing with these challenges. With these motivations in mind, this study intends to bring more insights on identifying innovative approaches to forgotten spaces in European Union contexts. To achieve these objectives, a literature survey was carried out considering bibliographic data and systematic review approaches. The findings obtained highlight some suggestions for contributing to a more social and regional balanced development.

Acknowledgments: This work is funded by National Funds through the FCT - Foundation for Science and Technology, I.P., within the scope of the project Ref^a UIDB/00681/2020 (<https://doi.org/10.54499/UIDP/00681/2020>). Furthermore we would like to thank the CERNAS Research Centre and the Polytechnic Institute of Viseu for their support.

Returns to scale in the farming sector in different world regions: Increasing, constant or decreasing?

Prof. Vítor João Pereira Domingues Martinho¹

¹Agricultural School (ESAV) and CERNAS-IPV Research Centre, Polytechnic Institute of Viseu (IPV), Viseu, Portugal

G12-O3 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 28, 2025, 9:00 AM - 10:30 AM

In general, economic theory predicts constant or decreasing, returns to scale in the agricultural sector, nonetheless the literature shows that in some cases agriculture reveals evidence of increasing returns to scale. There are several explanations that can be presented for these findings, such as the modernisation of the sector, which implies a reduction in the employment used and an increase in the output obtained. This farming modernisation is linked to the use of synthetic fertilisers, mechanisation and, more recently, the use of digital technologies. On the other hand, the sector, like other economic sectors, is impacted by international events, namely economic crises, the Covid-19 pandemic and military conflicts, for example. The questions that arise here are how these trends and frameworks have effectively influenced the returns to scale in the agricultural sector worldwide, particularly in specific regions of the world. Taking this scenario into account, this research proposes to analyse increasing returns to scale in agriculture in specific world contexts, considering the developments in economic theory associated with Verdoorn and Kaldor's laws. The results obtained reveal that agriculture has undergone relevant changes over the last few decades and years, with implications for the sector's returns to scale, but these transformations have been asymmetrical in the different world regions.

Acknowledgments: This work is funded by National Funds through the FCT - Foundation for Science and Technology, I.P., within the scope of the project Ref^a UIDB/00681/2020 (<https://doi.org/10.54499/UIDP/00681/2020>). Furthermore we would like to thank the CERNAS Research Centre and the Polytechnic Institute of Viseu for their support.

Economic Complexity and Exchange Rate in the BRICS: An ARDL Investigation

Prof. Flavio Vieira¹, Ms Laura Silveira Paiva¹

¹Federal University of Uberlandia, Uberlandia, Brazil

G16-O3 Statistical And Econometric Methods of Urban and Regional Analysis, F5, August 29, 2025,
9:00 AM - 10:30 AM

The goal of this study is to investigate the role of economic complexity for exchange rate volatility and misalignment for the BRICS. We estimate three autoregressive distributed lag (ARDL) models of exchange rate volatility, exchange rate misalignment and misalignment based on Hodrick-Prescott filter for each country using data from 1995 to 2021. The results indicates that economic complexity has a long run role for the exchange rate misalignment models for Brazil, China, Russia and South Africa. Other variables such as the interest rate is significant for Brazil, China and India. Inflation is significant for all five countries. For the volatility models, economic complexity, inflation and interest rate are significant for China, and inflation for Russia. Regarding the error correction mechanism, for the volatility models the average is -0.564, for the misalignment models is -0.665 and for the misalignment HP models is -0.788, suggesting that in average the correction towards the equilibrium is slightly faster for the exchange rate volatility models compared to the exchange rate misalignment models.

Train Stations and Car Ownership: Evidence from Station Openings in Germany

Mr Joschka Flintz¹, Dr. Stefanie Gaebler², Ms Viktoria Kleinschmidt², Prof. Dr. Felix Roesel³

¹Ruhr University Bochum, Bochum, Germany, ²German Centre For Rail Traffic Research, Dresden, Germany, ³TU Braunschweig, Braunschweig, Germany

YSS5, G5, August 28, 2025, 11:00 AM - 1:00 PM

Car ownership and use are major contributors to environmental and climate-related issues. Understanding how improvements in public transport infrastructure influence car dependency is therefore crucial for developing sustainable transport policies. This study investigates the impact of railway station openings on private car ownership in Germany between 2010 and 2022. Exploiting a quasi-experimental setting with the staggered opening of 170 new railway stations, we use a difference-in-differences design to estimate causal effects. Our analysis is based on geocoded administrative data on vehicle registrations at the one-square-kilometre level. For identification, we compare areas around newly opened stations to a control group of potential station locations where stations have been proposed but not yet realised. We find that the number of car registrations per household declines by between 4 and 5.5 per cent around newly opened stations. Event study estimates reveal that this effect emerges with a delay of two to three years, suggesting that rail services must first become established and integrated into travel routines before affecting car ownership decisions. Further analysis shows that these effects do not differ significantly between urban and rural areas. We also find no evidence of changes in the characteristics of registered vehicles in response to the new stations. Our findings suggest that improving rail access could play a meaningful role within a broader portfolio of measures aimed at reducing car dependency and promoting sustainable mobility.

Analysis of Effects of Vertical Structure on Costs of Regional Railways in Japan

Dr. Fumitoshi Mizutani¹, Dr. Shuji Uranishi²

¹Kobe University, Kobe, Japan, ²Osaka Metropolitan University, Osaka, Japan

G05-O3 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 27, 2025, 4:30 PM - 6:30 PM

Railway services are generally regulated by the government due to the inherent nature of railways as natural monopolies. However, under regulated circumstances, inefficiency problems are often said to arise in railway organizations. Unbundling policies such as horizontal separation and vertical separation of rail operation from infrastructure management have often been adopted in order to avoid these problems.

As for structure in the railway industry, vertical separation is common in Europe, while vertical integration is common in Japan. In Europe, vertical separation occurs in varying types: for example, the complete organizational separation type, the holding company type, and the key power separation type. In Japan, although vertical integration is prevalent, vertical separation does exist. There are four types of vertical separation in Japan: (i) complete separation, (ii) the holding of rolling stock, (iii) separation of land for rail track, and (iv) virtual vertical separation. In contrast to the situation in Europe, the main purpose of vertical separation in Japan is to reduce infrastructure costs for railway operators. And, unlike in Europe, there is no competition among railway operators for the use of rail track.

This study focuses on the costs of railway operations and analyzes how the type of vertical separation and the competitive situation affect costs. Previous research was centered on large-scale intercity railways such as nationwide state-owned railways. However, it has not yet been verified whether these results will hold with regional railways, which provide regional passenger rail services. Fortunately, as the more than 100 regional railways in Japan create suitable conditions for research, the above-mentioned issues can be easily investigated.

With these issues in mind, this study uses econometric methods to estimate cost functions for regional railways in Japan, and aims to clarify the extent to which differences in the vertical structure type and competitive situations affect costs. After explaining the types of vertical separation in Japan, specifically, the following points are analyzed: (i) whether there is a relationship between the differences in the vertical structures of railways and costs, (ii) whether cost-effective vertical structure types, as revealed in previous studies, can be explained in the same way by train density, and (iii) to what extent other factors, such as ownership type, size of railways, regulatory situations, and competitive conditions with other transport modes, affect costs. It is intended that the results found in this study will be compared with results from previous studies.

Incentives, Preconditions, and Barriers to Transparency in Local Government Authorities

Ms Margarita Barer¹, Prof. Yotam Lurie¹, Prof. Fany Yuval¹

¹Ben Gurion University of the Negev, Beer Sheva, Israel

G21-O3 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 28, 2025,
4:30 PM - 6:30 PM

Democratic countries recognize transparency as an essential aspect of governmental accountability. Organization for Economic Co-operation and Development (OECD) members have adopted regulations or legislation to promote transparency at various levels. Even though transparency is very popular in public discussions, the research is limited mainly in the municipal area.

This research identifies and analyzes organizational, behavioral, and psychological incentives, preconditions, and barriers to transparency in local government authorities. The purpose is to generate an integrated overview of the incentives, preconditions, and barriers that influence transparency by providing evidence from the local government authorities. For example, technological or economic elements can be seen as incentives, preconditions, or barriers.

Both in literature and in practice, several motivations for transparency have been identified. These include ensuring integrity and responsibility among public officials, fostering trust and public participation, enhancing economic efficiency, and mitigating corruption (Simons, 2017; Welch et al., 2005; Shim and Eom, 2008; Andersen, 2009; Heald, 2018; Grimmelikhuijsen, 2017).

This study delves into the incentives, preconditions, and barriers faced by local government authorities in their pursuit of transparency, rather than their underlying motivations for it. It's crucial to differentiate between motivation, incentive, and precondition, as these terms encapsulate distinct concepts. Motivations refer to the perceived reasons or goals of the subject. On the other hand, incentives and preconditions represent organizational tools that aid or enable the realization of these goals.

The research questions are: what are local government authorities' incentives and preconditions to achieving transparency? What are local government authorities' barriers to achieving transparency? What are the relationships among the incentives and preconditions? What are the relationships among the barriers?

The research employs a mixed methodology, with elements of both quantitative and qualitative research. Namely, semi-structured, in-depth interviews, document analysis, and conduction of an electronic survey.

There are three theoretical contributions and applied potential contributions. First, this study deepens the understanding of local government authorities through empirical validation of the incentives, preconditions, and barriers to transparency. Second, this study contributes to the field of Public Administration Management by breaking down the broader field of Ethics and Transparency into a topic that will introduce the incentives, preconditions, and barriers that local authorities encounter towards transparency. Finally, this study's findings might contribute to practitioners in local government authorities and provide practical tools to manage their way to transparency.

Gender politics, environmental behaviours, and local territories: Evidence from Italian municipalities

Dr. Chiara Lodi¹, Prof. Agnese Sacchi¹, Prof. Francesco Vidoli¹

¹University Of Urbino Carlo Bo, Urbino, Italy

S27-S2 Gender Equality in Regions in Europe and Beyond, D12, August 29, 2025, 9:00 AM - 10:30 AM

This study investigates the impact of female representation in municipal councils on municipal waste collection and recycling behaviour in Italian municipalities belonging to different territories between 2010 and 2019. We used the staggered difference-in-differences design (CSDID) to obtain unbiased estimates and a causal interpretation of the estimated effect. First, we provide causal evidence indicating that the presence of a majority of women in the municipal council significantly influences pro-environmental behaviour among citizens. Second, we emphasised the importance of considering the location, not just the manner, in which this change occurs; our findings indicate that the impact of a female-majority council varies by region and is more pronounced in areas with lower levels of social capital. In general, this study highlights the intersection of gender politics and environmental sustainability in a local geographical framework, advocating for increased representation of women in political spheres as a catalyst for positive environmental change.

A Spatial Analysis of Artificial Intelligence and Market Competition

Prof. Wen-Chung Guo¹

¹National Taipei University, New Taipei, Taiwan

G06-O2 Space and Digital Transformation, A1, August 28, 2025, 9:00 AM - 10:30 AM

This study investigates the transformative impact of Artificial Intelligence (AI) on market competition and social welfare through a spatial oligopoly framework. AI technologies, including algorithmic pricing, machine learning, and data analytics, have revolutionized market structures, fostering efficiency but also raising concerns over inequality and monopolization. The research highlights the digital divide between large firms with advanced AI capabilities and smaller firms constrained by limited resources, analyzing how this disparity affects market competition.

Using a modified spatial oligopoly model, the study examines AI's role in cost reduction, quality enhancement, and strategic pricing, particularly for dominant firms. The analysis identifies significant shifts in equilibrium market structures, revealing how AI alters firm entry behavior, consumer surplus, and overall social welfare. Key findings demonstrate that while AI enhances efficiency, it may also exacerbate market concentration and competitive inequalities. Large firms gain competitive advantages, leveraging AI to improve product quality and reduce costs, while smaller firms face higher barriers to entry, intensifying digital disparities.

The study also explores regulatory and policy implications, advocating for measures such as the EU's Digital Markets Act to address challenges posed by AI-driven market dynamics. It integrates theoretical insights with empirical observations to propose strategies promoting fair competition and inclusive growth, ensuring that AI's benefits are equitably distributed. By addressing issues like algorithmic pricing, tacit collusion, and data privacy, the research contributes to the broader discourse on AI's role in economic transitions.

Through equilibrium analysis, the study evaluates the trade-offs between competitive intensity and market efficiency, identifying scenarios of excessive and insufficient market entry under varying levels of AI adoption. Policy recommendations emphasize balancing innovation with consumer protection, fostering an environment that mitigates digital disparities while maximizing social welfare. The findings provide actionable insights for regulators and stakeholders navigating the evolving competitive landscape shaped by AI technologies.

The Economic Impacts of Flooding in Egyptian Port Cities

Prof. Eduardo Haddad^{1,2,3}

¹University of Sao Paulo, Sao Paulo, Brazil, ²Policy Center for the New South, Rabat, Morocco,

³Université Mohammed VI Polytechnique, Rabat, Morocco

G08-O5 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, A1, August 29,
2025, 11:00 AM - 1:00 PM

This study evaluates the economic costs for three Egyptian coastal cities of catastrophic flooding resulting from either sea-level rise or intense rainfall. Using a computable general equilibrium (CGE) framework, we assess the higher-order impacts of physical capital loss on both regional and national economies. Leveraging global flood hazard maps for various scenarios and return periods, and a 100-meter-resolution buildings-exposure model, which estimates the replacement value of residential and non-residential buildings at each floor level, we estimate the share of physical capital at risk. Our analysis covers Egypt's main port cities on the Mediterranean Sea (Alexandria, Damietta, and Port Said), taking into account seven scenarios and three intensities of destruction. Results indicate significant variability in economic impacts, with coastal flooding due to sea-level rise posing a more substantial threat to Port Said and Damietta, whereas pluvial flooding from intense rainfall would more heavily impact Alexandria. The findings underscore the need for targeted investments in climate resilience, particularly for coastal infrastructure, to mitigate future economic losses.

A Two-Stage Pseudo-Maximum Likelihood Method for Poisson Models with Dual Endogenous Explanatory Variables: An Application to Trade and Investment Agreements

Prof. Ching-Mu Chen¹, Ph.D. Shih-Yang Lin², Prof. Shin-Kun Peng³, Prof. Wen-Jen Tsay⁴

¹National Changhua University of Education, Changhua, Taiwan, ²National Taiwan University, Taipei, Taiwan, ³Academia Sinica, Taipei, Taiwan, ⁴Academia Sinica, Taipei, Taiwan

G04-O4 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 29, 2025,
9:00 AM - 10:30 AM

This paper introduces a novel estimator for the Poisson model with dual binary endogenous explanatory variables, addressing the need to quantify the effects of preferential economic integration agreements. We develop a two-stage pseudo-maximum likelihood estimator and derive exact analytical gradient matrices as well as Hessian matrices to improve computational speed and eliminate approximation errors substantially. Applying our approach to trade data, we find that preferential trade agreements positively impact bilateral trade flows, while bilateral investment treaties have a negative effect. Additionally, the positive interaction term between these two treaties suggests that preferential trade agreements promote horizontal foreign direct investment.

The Spread of Airbnb and Its Impact on the Real Estate Market: Evidence from Italy

Mr Francesco Viviani^{1,2,3}, Dr. Claudia Ferretti², Dr. Chiara Agnoletti², Prof. Chiara Bocci¹, Dr. Sabrina Iommi²

¹University of Florence, Florence, Italy, ²I.R.P.E.T, Florence, Italia, ³University of Milano-Bicocca, Milano, Italia

S09 Opportunities, Risks and Challenges of the Digital Transformation in Tourism: ICT and LocalDevelopment, E12, August 29, 2025, 9:00 AM - 10:30 AM

The rapid spread of short-term rentals, especially through the Airbnb platform, has produced significant impacts on urban contexts, provoking widespread concern and sparking significant public and policy debates. One of the central issues lies in the conflict with permanent residency, both in qualitative terms (e.g., noise level, perceived insecurity) and quantitative terms (e.g., rising in residential property values and a reduction in the already limited supply of long-term rental housing). The impact of these externalities — whether positive or negative — varies. On the one hand, neighborhood livability may decline, potentially depressing property values, while, on the other hand, heightened demand for short-term rental properties may intensify housing affordability issues by driving up residential costs. These increasing emergence of spillover effects has placed cities, especially those where this type of offer is particularly prominent, in front of new regulatory challenges.

By analyzing a panel dataset for ten Italian cities, from 2012 to 2022, and employing a mixed effect model, findings reveal that, even in the Italian context, there is a positive and significant relationship between the presence of Airbnb and real estate market prices. This relationship is even more pronounced in historic city centers than in the suburbs and especially in cities that are highly attractive for both cultural and business reasons, compared to in cities specialized mainly in cultural tourism. Moreover, the study highlights how the presence of a more organized, entrepreneurial supply — evident from the number of listings managed by the same entity (multi-host) — shows a greater impact on property prices compared to short-term rentals managed by individual hosts.

Can COVID-19 Herd Immunity Be Achieved at a City Level?

Dr. Yuval Arbel¹

¹Western Galilee College, Acre, Israel

G22-O4 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, G6, August 28, 2025, 4:30 PM - 6:30 PM

We propose a new approach to estimate the vaccination rates required to achieve herd immunity against SARS-COV2 virus at a city level. Based on information obtained from the Israeli Ministry of Health, we estimate two separate quadratic models, one for each dose of the BNT162b2 mRNA Pfizer vaccine. The dependent variable is the scope of morbidity, expressed as the number of cases per 10,000 persons. The independent variables are the first and second vaccination rates and their squares. The outcomes corroborate that herd immunity is achieved in the case that 71 percent of the urban population is vaccinated, and the minimum anticipated scope of morbidity is approximately 5 active COVID-19 cases per 10,000 persons, compared to 53–67 cases per 10,000 persons for zero vaccination rate. Findings emphasize the importance of vaccinations and demonstrate that urban herd immunity may be defined as a situation in which people continue to interact, yet the COVID-19 spread is contained. This, in turn, might prevent the need for lockdowns or other limitations at the city level

Is there an endogeneity problem between health and apartment value? Gender differences and the impact of obesity on property self-evaluation

Dr. Yuval Arbel¹, Dr. Chaim Fialkoff, Dr. Amichai Kerner

¹Western Galilee College, Acre, Israel

S66 Sustainable Health: Progress Towards Universal Health Coverage as a Sustainable Development Goal (SDG 3.8) across the Globe, B3, August 29, 2025, 11:00 AM - 1:00 PM

Background Numerous studies have compared self evaluation and market values of apartments by employing hedonic regressions. Most of these studies demonstrated that self evaluation of apartments are typically overly optimistic. Yet, none of these studies explored the relationship between self-evaluation of apartments and obesity as a proxy for self esteem, particularly among women. Previous empirical evidence suggests weight discrimination against women in employment and income, education and romantic relationships. Following the influence of western values and norms regarding a slim body image of women and the implications of these social obesity penalties, one would anticipate a lower self evaluation of apartment value among obese women. Another strand of the literature shows that compared to men, women are more conservative financial investors. **Objectives** To explore gender differences in self-evaluation of apartments with respect to BMI ($\text{BMI} = \frac{\text{WEIGHT}}{\text{HEIGHT}^2}$ = kg

meter²

where $\text{BMI} \geq 30$ is defined as obese person) as a proxy for self esteem. In an economic rational domain, housing price evaluations are not expected to be influenced by personal characteristics (such as gender, wealth, employment marital and immigration status, number of children) and psychological features of the evaluator. Consequently, the current study is closely related to the literature that deals with real estate and behavioral finance and economics.

Methods We analyze a representative sample of the Israeli population, obtained from the 2015–2016 longitudinal survey carried out by the Israeli Central Bureau of Statistics (ICBS), where the responses of each individual were recorded twice (during 2015 and 2016). The survey includes information on weight and height of each family member, from which the BMI measure is calculated ($\text{weight} \div \text{height}^2$), as well as apartment value, gender and a long list of economics and socio-demographic control variables, and apartment

characteristics. To investigate this research question, we use a 2SLS methodology, and run the empirical model separately based on ethnic origin and gender. **Results** Findings suggest that for both genders, BMI is negatively correlated with self-evaluation of apartments.

Yet, compared to men, female self-evaluation of housing prices are more conservative and less influenced by BMI changes. This outcome is obtained despite the fact that as part of the modern western societies, Jewish Israeli women are more susceptible to weight gain.

Research findings thus support the conclusion that compared to males, the cognitive error in price evaluation is smaller among females.

Spatial Diversity in Innovation: Mapping High-Tech Firm Dynamics

Ms Monika Kot¹, Prof. Katarzyna Kopczewska¹

¹University Of Warsaw, Warsaw, Poland

S61-S2 Innovation, Entrepreneurship and Industrial Dynamics in Rural Areas, D12, August 27, 2025,
4:30 PM - 6:30 PM

The modern economy relies heavily on innovation, especially in high-technology firms (medium-high-tech, high-tech and high-tech knowledge-intensive services). Understanding the socio-economic environment in which these firms operate is crucial to fostering innovation and creating a supportive business climate. While high-tech firms are typically thought to cluster in metropolitan areas, close to similar firms, recent trends suggest that many are also thriving in peripheral locations, outside densely populated business centres.

The aim of this research is to explore the spatial factors that support the establishment and growth of high-tech firms. Key questions include whether proximity to other technology firms, to firms in different sectors, or to urban centres influences innovation and business success. The study also seeks to identify which sectors foster collaboration and clustering with technology firms, and where these clusters come from. All spatial factors are examined in the context of the socio-economic drivers of entrepreneurship and innovation, including supply and demand factors.

Preliminary results indicate a significant increase in high-tech firms in Poland between 2012 and 2021, from 4.3% to 6.08% of all firms, with knowledge-intensive services experiencing the most pronounced growth. Notably, almost a third of these firms operate in low to medium density areas, challenging the assumption that high-tech firms only thrive in metropolitan clusters. Using innovative methods tailored to high-granularity data (point and grid data), this research captures spatial phenomena at a highly localised scale. We apply spatial statistics, spatial econometrics and spatial machine learning to quantify the spatial relationships and identify the drivers of high-tech business location.

This research contributes to a deeper understanding of the spatial dynamics of high-tech firms and provides insights into the development of innovation-driven business environments. The study provides insights to further understand the spatial dimension of entrepreneurial ecosystems.

Modelling spatial density in urban and regional science

Prof. Katarzyna Kopczewska¹

¹University of Warsaw, Warszawa, Poland

G16-O4 Statistical And Econometric Methods of Urban and Regional Analysis, F5, August 29, 2025,
2:00 PM - 4:00 PM

This paper presents my book with Oxford University Press on 'Modelling spatial density'. It is an overview of spatial methods that use geo-located point data to detect, classify, and exploit global and local intensity. Geo-located point data are a natural source of information in urban and regional studies - they come from a variety of sources and are collected for a wide range of topics, from urban management and human mobility to health, environment, climate, natural resources, socio-economic development, business and industry, agriculture, infrastructure and culture. It is clear that geo-located point data are available for probably all areas of life, and rough estimates suggest that 80% of data may have a spatial dimension. Therefore, there is a need for good methodological overviews on how to perform quantitative analyses on these data.

The quantitative toolbox allows one to go beyond simple visualisation of data - one can detect high and low local density clusters, find density outliers, understand neighbourhoods of low and high density areas, measure the degree of agglomeration, track the spatio-temporal stability of observations and the relationships between their properties, and many others. This presentation covers a comprehensive set of methods based on four main statistical concepts: distances, circles, tessellations and grids. It goes far beyond the well-known Kernel Density Estimation plot or density clustering with DBSCAN. It is a combination of old fundamental concepts (such as entropy, kernel density estimation, graphical weighted regression, Voronoi polygons) mixed with recently popularised machine learning approaches (such as random forest, partitioning around medoids, k-means, artificial neural networks, time series clustering, etc.). The result is a unique, novel approach that balances spatial statistics, spatial econometrics and spatial machine learning. All examples on population and business location point data show how much potential there is in this information if it is well treated with appropriate quantitative methods.

An important element of an applied approach to quantitative methods is to understand what is being analysed for. This presentation links research questions within urban and regional science with specific methods and policy questions and implications that can arise. These include issues of cohesion, equity and efficiency in dealing with lagging places and their densities, the impact of depopulation, the importance of density for development, business location, innovation, saturation, overcrowding, elasticity, growth multipliers, over- and under-represented places, urban design and urban spillover policies, and diversity of densities.

Contemporary Albanian migrations towards Greece: an updated state-of-the-art based on the last two censuses in Albania and Greece

Dr. Ifigeneia Kokkali¹, MSc Nikolaos Kokosis, Dr Myrsini Fotopoulou¹

¹University of Thessaly, Volos, Greece

S54 Reactivating the Debate on Contemporary Albanian Migrations: an Updated State-of-the-art,
Amph 3, August 28, 2025, 9:00 AM - 10:30 AM

Albanian migration has been a mainstream phenomenon in the last three decades, so that the country has been characterized as ‘a laboratory for the study of migration’ (King, 2005). Albania is among the twenty major export-countries in the world with respect to its population (World Bank, 2016). In 2020, the Albanian emigration rate worldwide passed over 30 percent (1.25 million people), with most of Albanians abroad concentrated in Italy (43%) and Greece (35%) (OECD, 2022). Greece, that has been a major destination for Albanian emigrants since the 1990s, still captures an important part of this out-migration. In 1991, Albanian citizens formed 12% of the whole migrant stock in Greece, in 2001 surpassed 57%, and in 2011 formed approximately 53% of the total foreign population. In the last Greek Census (2021), Albanians are still the major migrant group, reaching 49% of foreigners. The proposed paper seeks to provide an updated state-of-the-art on contemporary Albanian migration towards Greece, relying upon census data from both countries over the past thirty years, with a particular focus on the post-2010 era. We conduct a spatio-temporal analysis to explore the directionality of Albanian international migration, with a specific focus on the Albania-Greece axis. By examining migration patterns from the 1990s to the present, we analyze the areas in Albania that “expel” migrants and those in Greece that “absorb” them. We assess whether migration trends from the 1990s-2000s share similarities with earlier and more recent movements; and we also seek to evaluate the impact of Albania's urban and territorial reorganization before and after 1990 on these dynamics. A key aspect of our investigation focuses on place-based characteristics and their potential in shaping the degree of migrant integration at the local level in host communities. Finally, we investigate the linkages between the regions, districts, and places of departure in Albania and the corresponding arrival points in Greece, identifying commonalities that influence settlement patterns.

Greece's depopulation: A need to rethink attitudes to immigration, citizenship and nation.

Prof. Paul Kalfadellis¹

¹Monash University, Caulfield East, Australia

G10-O3 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 29, 2025, 9:00 AM - 10:30 AM

Greece's population is predicted to fall to 6.4 million people by the end of this century (PopulationPyramid.net). The implications for Greece are existential. Fewer people mean less economic activity, less working age people to support an aging population, a shrinking job market forcing an exodus among those who can leave, thus creating a vicious cycle effect of continual population decline. How is this decline to be arrested?

This paper based on research and analysis of documentary texts argues, the solution rests with immigration and the permanent settlement into Greece of the 'other'. This will require a major rethink on the part of Greek society not only in its attitude to immigration, but ultimately who can belong as a Greek citizen. This will not be easy for Greeks, where the dominant national narrative post-national resurrection in 1821, has been that Greece is the home of the Hellenes (Beaton 2019), a nation strongly defined in ethno-cultural terms, underpinned by the idea of a common ancestry, culture and language (Veremis, 1990; Kitromilides, 1990). Greece has been unified by a national consciousness, that over the last 200 years has been instilled by the state through policies and education that have espoused religion (Greek Orthodoxy), the family and the state (Triandafyllidou & Kokkali, 2010).

For immigration to be an inclusive process of settlement and belonging, it will require the abandonment of 'jus sanguinis' on the part of the Greek State, as the main basis of conferring citizenship rights (Voutira 2012) in favour of 'jus solis' and 'jus domicile'. Such citizenship rights over time, will result in an ethnically diverse country, no longer just a nation born of Hellenes but inclusive of those who became Hellene. The implementation of such a public policy shift will require government "to bring the Greek people along" with the need for such change. This will not be easy, due to the resistance it is likely to face by many Greeks, including nationalist politicians looking to exploit the xenophobic sentiment of the Greek population (Koutouza 2019).

However, as Albanian migration to Greece has highlighted, becoming Greek rather than being born Greek is definitely possible. As the largest identifiable ethnic group in Greece (Kotzamanis 2022), Albanians have integrated well into Greek society (Kokkali, 2011), an integration that challenges and brings into question the historical Greek narrative around identity, belonging and Greece as the nation born of Hellenes (Triandafyllidou & Kokkali 2021).

Automation and vulnerability of migrant and native populations in terms of risk of technology-induced job loss.

Prof. Marcin Stonawski¹, Prof. Vegard Skirbekk

¹Statistics Denmark / CASPAR, Copenhagen, Denmark

G09-O3 Migration, Mobility Patterns and Impacts Across Space, A1, August 28, 2025, 4:30 PM - 6:30 PM

In the contemporary world, there is a megatrend towards automation and migration. In Europe, the factors of depopulation, ageing populations and high levels of education are driving immigration to countries within the region.

Migrants from outside Europe predominantly occupy positions the labour market that are susceptible to replacement as a result of automation in the near future. Consequently, these individuals are at a heightened risk of unemployment and may inadvertently impose an additional burden on the host society, rather than providing a solution to the issue. It is therefore important to ascertain whether this elevated individual risk is mitigated at the level of the household. For example, the consequences of losing one's job may be less severe if one's partner is employed in a secure position, and more significant if one is the primary income provider with numerous dependents.

The present study focuses on evaluation of the risk of technological-induced job loss among migrants, based on individual data from Danish registers and RTI methodology. The data allow us to assess both individual and household vulnerability to technological change and create a typology of households in this respect. The preliminary findings indicate considerable diversity among individuals and households with regard to the risk of job loss.

Worldwide Geographies of Wealth and the ‘Valued Attribute’ Concept

Prof. Boris A. Portnov¹

¹University Of Haifa, Haifa, Israel

G01-O7 Urban, Regional, Territorial and Local Resilience, B5, August 28, 2025, 4:30 PM - 6:30 PM

If we look at the geographic patterns of wealth distribution across the globe, these patterns are not immediately clear. Even in Europe, a relatively small and densely populated continent, the location of places that generate the most national wealth looks quite irregular, with isolated ‘peaks’ surrounding by ‘hollows’ that border each other interchangeably and do not show a clear pattern. Quite often, the ‘spikes’ on this map are the largest cities of nations and their capitals, while the ‘depressions’ between them are less populated regions and rural areas, but not always. Indeed, Oslo, Copenhagen, Dublin, Amsterdam, London, and Paris are largest cities of their nations and national capitals, which generate the most national income in terms of GDP per km² and GDP per capita. However, in a large number of cases, this general observation is not upheld. The conceptual model, termed the ‘valued attribute concept’, is suggested to explain such (ir)regularities. According to this concept, during each historical period, several attributes of location were important and the most valued, and places, which accumulated most of these favourable attributes, concentrated the most physical and the financial resources and most collective wealth as a result. If in antiquity, such attributes included the availability of fresh water, a temperate climate, and fertile land for agriculture and the cultivation of life stock, later elevated and naturally protected places gained importance, while previously valued attributes retained their importance as well. Next, the advantages associated with size gained prominence for different reasons, such as crafts and services, defence considerations, or both. With accelerated industrial development, the proximity to natural resources gained prominence, while the importance of size became even stronger than before, due to the size of the market for produced goods and services, albeit not due to sole defense considerations, as before. As development progressed, the available services and other urban functions, as well as the infrastructure linking places, allowing factor exchanges and urban expansion, gained prominence. More recently, environmental safety, limited commutes, and good climate have gained importance as ‘valuable attributes’ related to human comfort. As a result, geographically, national wealth accumulated in places that concentrated the most of such ‘valued attributes’. As the list of these ‘valued attributes’ tends to change with time, the location of the wealth loci may also change. In this presentation, this concept is supported by empirical data processed using geo-information tools, applied to European and worldwide data.

Responding to the challenges of integration. Activation policies towards Ukrainian refugees in Poland. A case study based on participatory research.

PhD Habilitation Ewa Flasińska

¹Warsaw University, Warsaw, Poland

G09-O1 Migration, Mobility Patterns and Impacts Across Space, B1, August 27, 2025, 11:00 AM - 1:00 PM

Poland has for several years become a destination country for an increasing number of labour migrants. They provide a very important support to the Polish labor market, allowing to fill the growing shortage of human resources in many industries and professions. It is very important to integrate them into the Polish labour market and Polish society in order to make the most of the potential of labor migration. The purpose of the paper is to analyze the effectiveness of the activation policy towards Ukrainian refugees in Poland, with a particular focus on integration challenges, such as the language barrier, recognition of professional qualifications or social integration. The paper will present the results of research participating in the “Together We Can Do More” Program. An evaluation of the practical solutions introduced by Poland will also be shown, the results of the surveys will be presented, and recommendations will be made for future measures to support migrants. The author of the paper participated in the preparation, implementation and conclusion of the program.

Mass shootings, employment, and housing prices: Evidence from different geographic entities

Mr Carlos Gayán-Navarro¹, Mr Marcos Sanso-Navarro¹

¹Universidad de Zaragoza, Zaragoza, Spain

G01-O9 Urban, Regional, Territorial and Local Resilience, B5, August 29, 2025, 11:00 AM - 1:00 PM

This paper investigates the economic effects of mass shootings taking advantage of a unique dataset with detailed information about their location. Using recent advances in difference-in-differences methods, we assess the influence of the attacks on employment and housing prices at three levels of geographical disaggregation. Obtained results show that the economic impact of mass shootings is more evident when census tracts are considered as the spatial unit of analysis, and when they are perpetrated in public spaces. Furthermore, mass shootings affect to a greater extent the employment of those sectors that are more reliant on face-to-face interactions.

The Book – Founding Principles of Culture Based Development, by Annie Tubadji – A Young Scientist Reflection

Ms Yashi Jain¹

¹Swansea University, Swansea, United Kingdom

S05 Founding Principles of Culture Based Development (CBD). A Book-launch Roundtable, G2, August 29, 2025, 9:00 AM - 10:30 AM

As a young researcher who has been bread as a member of the new generation of experts in Culture Based Development, I want to share my insights on why and how the methodological instruction in the new book by Annie Tubadji can be useful to researchers who endeavour to undertake a CBD type of analysis for the first time. I will share two sets of points. Firstly, I will share with candidate-novices in the CBD research field the five reasons why I wish I had read this book before writing my PhD papers. This is based on the fact that the book actually provides a useful compendium on the existing CBD papers and the theoretical and methodological specificities of each of them. This part of the book is entitled PRACTICE and is present in each chapter. I will also share with you the five questions I still want to ask about CBD and its methodology. I hope we will hear further insights on the latter five points from the author of the paradigm chairing the special session.

The Book – Founding Principles of Culture Based Development, by Annie Tubadji – AN OVERVIEW

Dr. Annie Tubadji¹

¹Swansea University, Swansea, United Kingdom

S05 Founding Principles of Culture Based Development (CBD). A Book-launch Roundtable, G2, August 29, 2025, 9:00 AM - 10:30 AM

The Book ‘Founding Principles of Culture Based Development – CBD: The Economics of WHY?’ by Annie Tubadji is the economic hitchhikers’ guide through the universe of culture, its definition and quantification for economic analysis purposes. The book offers the much needed and long-awaited definition of culture in economic terms, offering a comprehensive transdisciplinary in-depth motivation for this definition and the whole taxonomy and ontology of CBD as a paradigm. The overview of the book will focus on the structure of the book and what can be found in it in each chapter. Namely, each chapter starts with the original CBD value added, provides the economic theory behind it, continues with the empirical theory and actual summary of the existing CBD empirical papers that illustrate the theory. Each chapter finishes also with special type of policy implications focused on the unique cultural policy and human development approach known as aesthetic education, tackled from a learning city-relevant perspective. Understanding the logic of the structure of this book can help the reader to go faster and more efficiently into the main insights offered by the book and start using them successfully in their own research.

Cultural Capital, Social Capital, Intangible Capital vs All the Rest Forms of Capital – What Eliminates Local Inequality across Wales?.

Dr. Annie Tubadji¹

¹Economics Department, Swansea University, Swansea, United Kingdom, ²Local Challenges Research Office (LCRO), Swansea, Wales

S04 CBD and Forms of Capital for Local Well-being, G2, August 27, 2025, 11:00 AM - 1:00 PM

The paper presents the economic analysis work under the UKRI/ESRC & The Productivity Institute (TPI) funded MATHER Project in Wales. The paper offers a structured summary of the entire process of helping local authorities in Wales to address the issue of local inequalities in an evidence-based manner. The local authorities (PSB) were helped by the Swansea University Local Challenges Research Office (LCRO) and its CBD Team to create a novel database of their policy projects for fighting poverty. On the basis of this data, the CBD team has generated analysis and trained the local authorities to implement themselves the same CBD type of analysis in the future. This exercise results in enhancing the administrative capacity of the local PSB units to generate independently fully adequate modern socio-economic quantitative evidence for policy making purposes. In particular, the CBD team focuses in equipping the administration ahead of many economic scientific sub-fields with clear delineation of the forms of capital: cultural capital, social capital and intangible capital among others.

Fostering Peer-to-Peer Car Sharing in Italy: Key Factors for Sustainable and Inclusive Transport Solutions

Prof. Lucia Rotaris¹, Prof. Romeo Danielis¹, Prof. Mariangela Scorrano¹

¹University Of Trieste, Trieste, Italy

S90-S1 Transport Policies Shaping Sustainable Cities and Territories, Amphitheater II - SAKIS
KARAGIORGAS, August 29, 2025, 9:00 AM - 10:30 AM

Car sharing among peers presents a promising opportunity to enhance the environmental sustainability of urban transport systems. It can complement public transport services and active mobility options, helping to alleviate congestion, reduce emissions, and foster a more sustainable urban environment. Moreover, it can contribute to social inclusion by providing access to mobility for individuals who cannot afford the high costs associated with owning and maintaining a car. In northern European countries, peer-to-peer car sharing is already a popular and well-established model. However, in Italy, it remains underutilized, largely due to an undefined regulatory framework and the lack of awareness among the population.

The purpose of our research is to investigate the key technical features that can promote both the demand and supply of these sharing services in Italy. To this aim, we administered an online survey to a sample of the Italian population, including residents from the cities of Trieste and Taranto. By analyzing the data using discrete choice models, we identified the factors most important to potential renters and car owners.

Our findings reveal that potential renters are primarily concerned with the cost of the service, including the fare and the value of the deductible, as well as the walking distance to access the car. Car owners, instead, are more focused on the amount they can charge for their vehicle, the level of insurance coverage, and the availability of an app or platform feature to unlock the car. Additionally, for both groups, the fee charged by the platform manager to facilitate the match between supply and demand plays a crucial role in the attractiveness of the service.

These results have important implications for both policymakers and operators. For policymakers, understanding the preferences of both renters and car owners is essential for crafting regulations that create a conducive environment for the growth of peer-to-peer car sharing services. Effective regulation can help overcome current barriers, such as insurance and tax uncertainties, and allow the market to achieve the critical mass needed to make these services viable. For operators, the findings offer valuable insights into how to design platforms that meet the needs of both supply and demand, ensuring a smoother and more efficient operation. By focusing on the right pricing structures, insurance options, and user-friendly features, operators can better match the needs of car owners and renters, contributing to the success of this sustainable mobility model.

Impact of financial inclusion on regional financial health: A spatial perspective from the Global South.

Mr Richárd Farkas¹, Wencelaus Musyoka Muthama¹, Zoltán Gál¹

¹University of Pécs, Faculty of Business and Economics, Pécs, Hungary

G10-O1 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,

August 27, 2025, 11:00 AM - 1:00 PM

This study, employing spatial econometric analysis, uncovers the intricate interplay between financial inclusion and regional financial health. While financial inclusion is pivotal, other household characteristics and regional economic factors also influence significantly. The results underscore the need for tailored policies and interventions for regional economic development and financial health, highlighting spatial dependence. Importantly, this research provides practical insights that can inform policymakers' decisions and guide researchers' work. It contributes to the global dialogue on sustainable financial health, aligns with broader financial inclusion objectives, and supports sustainable development goals.

Subsidies and Climate Factors as Drivers of Regional Agricultural Productivity: A Conditional Efficiency Framework Analysis of Physical and Operational Models

Dr. Alexander Kaiser¹, Prof. Dr. Axel Schaffer

¹Universität der Bundeswehr München, Neubiberg, Germany

G12-O3 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 28, 2025, 9:00 AM - 10:30 AM

Increasing agricultural productivity is often highlighted as crucial for balancing the growing demand for agricultural produce with resource conservation goals. Consequently, studies on agricultural production efficiency examine economies of scope, scale and other operational factors such as subsidy schemes to understand differences in productivity levels and identify best practices. Surprisingly, while environmental concerns receive sufficient attention in the nonparametric production analysis literature – either considered as excessive input usage, avoidable waste or undesirable byproducts – a comprehensive assessment of climate factors in explaining inefficiency variations remains largely absent. While the latter might be reasonable in studies dedicated to climate-insensitive farming systems or highly localized contexts, in regional analyzes, climate factors may be important determinants of an agricultural sector's productivity. Moreover, they may interact with operational factors that are frequently cited as an explanation for inefficiencies relative to peers. Using a fully nonparametric conditional efficiency framework, we analyze the impact of various subsidy types (total subsidies, direct payments, environmental subsidies, and investment subsidies) and climate factors (evapotranspiration, radiation, precipitation, and temperature) on efficiency estimates for crop and mixed farming sectors across EU FADN regions from 2004 to 2021. This study further contributes to the literature by considering both a technical model - based on actual physical quantities of production inputs and outputs - and an operational model that incorporates monetary costs and gross results. To ensure robustness, we also explore differences in between input- and output-oriented specifications of the models. Our findings reveal a robust effect of varying climatic conditions on regional agricultural efficiency. In contrast, the influence of subsidies appears highly sensitive to model specification and cannot be fully disentangled from general size effects. Beyond this interaction with sectoral size, the conditional framework uncovers a more nuanced relationship between contextual variables and efficiency estimates. Pairwise nonparametric fits indicate a nonlinear relationship between climate factors and efficiency, which is limited to specific value ranges. These findings suggest that studies employing a semi-parametric two-stage approach may indeed have overestimated the role of subsidies in explaining inefficiencies in the past. Future research could benefit from acknowledging the complex interactions between both environmental and operational factors with regional agricultural efficiency more explicitly.

Reaching net zero-for smaller nations: industrial or household decarbonisation:

Dr Kevin Connolly¹, Dr Gioele Figus¹, Mrs Rebekah Tait¹

¹University of Strathclyde, Glasgow, United Kingdom

G19-O2 Urban, Regional and Local Policy Evaluation, G3, August 27, 2025, 4:30 PM - 6:30 PM

Combating climate change is a key global challenge, with many nations committing to net-zero emissions. While emission reductions are crucial, they must align with economic growth. The green transition presents an opportunity for economic expansion, particularly through "green jobs" in manufacturing and technology deployment.

Three core aspects of the green transition are decarbonising electricity, reducing heat demand, and transforming transport. Electricity generation has seen the most progress, particularly through offshore wind and solar power, which have become cost-competitive with fossil fuels. However, decarbonising heat and transport is more complex due to their diverse and individualised nature. Unlike electricity, which is produced centrally, decisions about heating and transport are often made at the household level, requiring multiple solutions.

This paper examines the economy-wide impacts of offshore wind investment and household decarbonisation using a CGE model for Northern Ireland. While many studies analyse elements of the green transition separately, this research compares two major pathways: achieving 2GW of offshore wind capacity by 2040 and implementing a household energy efficiency programme. Each scenario includes simulations of both demand and supply-side effects.

Our findings indicate that for smaller nations, household decarbonisation delivers stronger economic benefits than offshore wind. Although offshore wind requires greater investment, much of this spending occurs outside the region, limiting its local economic impact. Furthermore, offshore wind jobs tend to be short-term, benefiting only a few industries while others experience negative effects due to crowding-out. In contrast, household decarbonisation creates broader and longer-lasting economic benefits, supporting a more equitable transition.

This study's novelty lies in its direct comparison of offshore wind and household decarbonisation in a smaller nation. Northern Ireland, like many smaller regions, faces challenges related to "local content" and lacks the expertise to manufacture offshore wind components domestically. Understanding these challenges is crucial for policymakers aiming to balance economic and environmental goals in the green transition.

Economic linkages and the productive structure of Brazilian states: an empirical analysis for 2011 and 2018

Prof. Luiz Carlos de Santana Ribeiro¹, Prof. Luciano Ferreira Gabriel², Prof. João Prates Romero³

¹Federal University of Sergipe, São Cristóvão, Brazil, ²Federal University of Juiz de Fora, Juiz de Fora, Brasil, ³Federal University of Minas Gerais, Belo Horizonte, Brazil

G02-O5 Regional Growth Models, Competitiveness, and Convergence, B1, August 29, 2025, 9:00 AM - 10:30 AM

This paper provides new contributions to the literature on economic growth and regional development using data from Brazilian states. It aims to investigate the Brazilian productive structure in 2011 and 2018 (last available input-output matrix) by applying input-output methods and econometric estimations for 27 Brazilian states. The main findings suggest that the decrease in the share of the manufacturing in Brazil occurred simultaneously with a process of spatial deconcentrating of its activities in the period analyzed, mainly from the richest Brazilian States, such as São Paulo and Rio de Janeiro, to the remainder of the country. In addition, services and trade activities became relatively more important and manufacturing lost value-added share in the States where it is a key sector, i.e., where it simultaneously exhibits intermediate purchases and sales above average. Manufacturing decreased its linkages intensity over other sectors, such as services and trade, construction, mining and quarrying, among others, in most Brazilian states. *Pari passu*, the service and trade sectors did not prove to be more growth-enhancing (in terms of linkages) than the SIUP (Public Utility Industrial Services, such as Electricity, Gas and Water Supply) as well as manufacturing sectors and, in some states, as construction and SIUP. Furthermore, in a broader perspective, according to The Observatory of Economic Complexity (OEC) Brazil was closer to the most complex countries in 2000, in 26th position. However, it has fallen into the range of less complex countries in 2019, in the 53rd position, with a steady decrease in 2011 and 2018, which is the focus of this work. Our main hypothesis is that this process is closely related to loss of intersectoral linkages among the key sector activities in the Brazilian states. Evidence based on the field of influence analysis gives support to it as well as the econometric estimations. The research reveals that some states are stuck in a low and middle complexity trap due to a regressive productive specialization and that national industrial policies are not well suited for the enormous heterogeneity among Brazilian states. To reverse this process, it is needed an intense collaboration between public and private sectors of the different states to identify and invest in economic activities that can contribute for development based on growth enhancing key sector. Therefore, the evidence presented in this paper provides robust evidence of a falling behind pattern that is not homogenous among the states analyzed in a developing country.

Interregional Spillovers in European Science: A Spatial Durbin Approach

Dr. Mofei Jia¹, Prof. David Emanuel Andersson, Dr. Casto Martin Montero Kuscevic

¹Xi'an Jiaotong-liverpool University, Suzhou, China

G20-O5 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 29,
2025, 2:00 PM - 4:00 PM

The science output of a region may depend on various intraregional and interregional factors. Spatial Durbin models were used to estimate the impacts of regional factors as well as spillovers from other regions on science output in European NUTS2 regions. The main findings are that research and development (R&D) employment in higher education institutions in the region and in surrounding regions has a positive impact on science output, while R&D employment in high-tech industries in the region has a negative impact. There are also intraregional and interregional effects of disciplinary specialization, with less specialized regions exhibiting higher science output.

Mapping Europe's cultural diversity: A club convergence analysis of public cultural expenditure

Prof. Laura Vici¹, Prof. Antonello Eugenio Scorcu, Prof. Roberto Zanolà

¹University Of Bologna, Bologna, Italy

S37 Towards Local Development Through a Sustainable Valorization of Cultural Heritage, B4, August 29, 2025, 2:00 PM - 4:00 PM

The aspiration to create a cohesive European cultural space within Europe remains a cornerstone in the evolution of European integration. This endeavour highlights a dual focus: promoting shared transcultural values while safeguarding the unique cultural identities of individual nations. Achieving this delicate balance is particularly challenging due to the varying economic conditions and institutional frameworks that characterize the member states. This study employs the club convergence framework to explore whether European countries exhibit converging patterns in public cultural expenditures over the period 2012–2021. Drawing on the nonlinear dynamic log-t test of Phillips and Sul (2007) and an ordered logit model, we identify six distinct convergence clubs, highlighting persistent disparities in cultural expenditure strategies across 30 European countries. Our analysis reveals a stark North-South divide, with Northern European countries converging toward higher levels of cultural spending, while Southern and lower-income economies exhibit fragmented trajectories. When focusing on the Eurozone subset of 20 countries, a similarly heterogeneous pattern emerges, further constrained by stricter fiscal policies and unified monetary policies. Key determinants of club membership include initial cultural expenditure levels, government deficits as a percentage of GDP, and human capital, underscoring the critical importance of starting conditions and fiscal capacity in shaping national cultural policies. Interestingly, factors such as per capita GDP and democratic governance appear to have weaker or inconclusive influences on club dynamics. These findings have significant implications for cultural policy within the European Union, suggesting that achieving a unified cultural strategy may require a more nuanced, localized approach that reflects the unique economic and institutional contexts of member states. By emphasizing the role of education and fiscal flexibility, policymakers can better address existing disparities in cultural investment and foster a more integrated yet diverse cultural landscape. This study represents a pioneering effort in applying the club convergence framework to cultural policy, providing a robust analytical foundation for future research into the economic underpinnings of cultural integration in Europe.

The impacts of urban sprawl on soil resources in Tours Metropolitan Area: Mitigation strategies using Artificial Intelligence (AI)

Dr. Lamia Enab¹

¹Tours University, Tours, France

G06-O1 Space and Digital Transformation, A1, August 27, 2025, 11:00 AM - 1:00 PM

This research aims to study the impacts of urban sprawl on soil resources in Tours Metropolitan Area and the possibility of applying Artificial Intelligence (AI) to reduce its impact. The research focuses on the long-term study of improving the urban planning, with the objective of understanding the importance role of applying Artificial Intelligence applications in reducing the major impacts of urban sprawl especially on the soil resources. The study involves a combination of Artificial Intelligence applications, for example, analyzing various factors by using Artificial Intelligence algorithms, such as soil quality, land topography, and ecological sensitivity, to optimize land-use planning, also use AI-powered predictive modelling to assess the potential impact of urban development on soil resources. This involves considering factors like population growth, economic trends, and environmental conditions to forecast where sprawl might occur and identifying areas with vulnerable soil resources, moreover implementing Artificial Intelligence-driven systems to assist in designing smart zoning regulations that prioritize the conservation of valuable soil resources. Artificial Intelligence can help identify areas suitable for development while safeguarding critical soil and environmental assets. The collected data is analyzed using analytical and descriptive methods and models. The expected outcomes of the research are significant contributions to the field of urban planning in general and urban sprawl in particular, including a deeper understanding of the benefits and the importance role of applying Artificial Intelligence in minimizing soil degradation, monitoring and predicting soil erosion, developing new Artificial Intelligence applications that can be a part of Tours Metropolitan urban sprawl solution, and filling a critical gap in the existing literature by offering a comprehensive analysis that combines the understanding of the impact of urban sprawl on soil resources with innovative solutions derived from Artificial Intelligence. This research addresses important questions that are currently crucial for Tours Metropolitan Area, such as soil mitigation and environmental survey, and addresses several scientific questions related to the study of reducing urban sprawl impacts and improving soil resources using Artificial Intelligence technologies.

Patterns of movement and their societal impact in Kolkata Metropolitan Area, India

Dr. Jayati Das¹, Dr Manisha Bhor²

¹Shri Shikshayatan College, Kolkata, India, ²Allergy And Asthma Research Centre, Kolkata, India

G09-O2 Migration, Mobility Patterns and Impacts Across Space, G5, August 28, 2025, 9:00 AM - 10:30 AM

Changes have occurred in the regional dynamics of human mobility since the beginning of the 21st century. During the COVID-19 pandemic, changes were seen in Kolkata city mobility patterns, including in active transportation (walking, cycling, micro-mobility, and public transit use), creating a unique opportunity for global public health lessons and action. We explored the viability of using air quality as an alternative to aggregated location data in Kolkata and its surroundings. We determined whether air quality data depicted similar patterns to mobility data before, during, and after the lockdown and determined associations between air quality and mobility by computing Pearson correlation coefficients (R), conducting multivariable regression with associated confidence intervals (CIs), and visualized the relationships using scatter plots. Air pollution and climate change are major threats to rapidly growing cities in present times. Developing nations like India, which are switching from predominantly rural countries to increasingly urban, have to face critical challenges in terms of climate action and sustainable development (Van Duijne, 2017; Singh C. et al., 2021).

Climate plays a considerable role in the spatial and temporal distribution of air pollutants. Climate change can influence air pollutant concentration and catalyze the formation of secondary pollutants. Nitrogen oxide is an emerging problem in Kolkata and has recorded one of the highest levels of NO_x in the country. The change in land use land cover patterns in urban areas due to ongoing urbanization affects regional climate by altering the surface and boundary layer atmospheric properties (Shepherd, 2005; Ren et al., 2008; Yang et al., 2012).

Also, climatic conditions, atmospheric parameters, and urban settlements influence the atmosphere's dispersion, accumulation, and transformation of pollutants. The dispersal of these air pollutants may cause respiratory disorders. The urban heat island effect, caused by increased urban temperature due to climate change, increases the energy requirements for cooling in cities. The air conditioners used to reduce the high temperature in cities, in turn, emit harmful GHGs that cause urban air pollution. The city residents also suffer from thermal discomfort due to elevated urban temperature by the UHI effect, which exacerbates heat waves (Ohashi et al., 2007). The UHI effect influences air quality as the differential heating generates mesoscale winds that facilitate pollutant movement and circulation causing urban air pollution issues (Agarwal and Tandon, 2010). So, air pollution and climate change are interlinked with adverse impacts on human health in Kolkata city.

The possibility of applying Artificial Intelligence (AI) in Solid Waste Management in the developing countries towards building smart cities

Dr. Lamia Enab¹

¹Tours University, TOURS, France

G25-O2 Enriching Research and Policy Methods in Regional Science: Digital Tools, Artificial Intelligence, Participatory Methods, Mapping Techniques, Stakeholder Involvement, Amph 3, August 28, 2025, 4:30 PM - 6:30 PM

Solid Waste Management (SWM) has emerged as a critical concern for both developed and developing countries, contributing significantly to environmental pollution and health hazards due to improper handling and disposal practices. The rapid urbanization, population growth, and technological advancements have exacerbated the problem, with global waste generation projected to escalate from 2.01 billion tons in 2018 to 3.40 billion tons by 2050. This research addresses the urgent need for innovative and sustainable Solid Waste Management strategies by exploring the application of Artificial Intelligence (AI) technologies in the developing countries, taking Jordan as a case study, particularly in the urban context of Al-Radwan neighborhood in Amman. AI's potential to revolutionize Solid Waste Management through improved operational efficiency, cost savings, enhanced recycling rates, and data-driven decision-making is examined. The study identifies key research gaps in the perception and empirical evidence of Artificial Intelligence applications in Solid Waste Management. These applications include smart bin level estimation through sensor-based waste monitoring, smart bin systems and waste sorting, and collection improvement: waste collection, vehicle routing and route optimization. In addition, the research explains how Artificial Intelligence can help monitor and track waste throughout the recycling process, optimize the logistics and transportation of recycled waste, and thus explore the feasibility of adopting recycling practices management in the future. Using both secondary data and primary data, the research evaluates AI's role in waste generation, sorting, and collection processes. The findings aim to enhance understanding of AI's benefits and challenges, providing insights for policymakers, municipalities, and SWM organizations to optimize resource efficiency, reduce costs, and transition towards a circular economy. An AI simulation model was built from scratch for the purposes of Al-Radwan neighborhood, to determine the expected results of applying AI in its waste collection improvements. The results are anticipated to contribute significantly to urban planning and sustainable development in Jordan, offering best practices and recommendations that open doors and pave the way for future research studies regarding improving urban planning using AI applications, and be considered as a reference study for other developing countries with similar circumstances.

Anthropogenic drivers of land take – a spatial analysis for Bavarian municipalities

Mr Johannes Lohwasser¹

¹Bundeswehr University Munich, Neubiberg, Germany

G01-O4 Urban, Regional, Territorial and Local Resilience, B5, August 27, 2025, 4:30 PM - 6:30 PM

Land take represents the increase of artificial surfaces and soil sealing (i.e. the covering of soils by buildings and layers of (partly) impermeable artificial material) and is an important indicator for human influence on the local environment. It has direct negative impacts on multiple ecological functions of soil (e.g., resource, filter or habitat functions) as well as enhances the danger of flooding in exposed regions and heat islands in urban areas. Thus, land use can be considered a crucial element of climate policies.

A common way to analyze the relationship between anthropogenic factors and environmental degradation is the application of the STIRPAT (Stochastic Impacts by Regression on Population, Affluence, and Technology) model. While most STIRPAT studies investigate anthropogenic impacts on emissions at national level, the presented paper uses increases of the settlement and transport area (as proxy for land take) as an indicator for local environmental degradation. The local perspective is taken, as it is mostly the municipal authorities that decide on land use in Germany. Overall, the derived regression model employs local administrative data of more than 2000 Bavarian municipalities from 2014-2023.

The paper contributes to the literature in the following aspects. First, and in contrast to most STIRPAT applications, the thematically adapted model focuses on local impacts at the level of municipalities. Second, the model controls for spatial effects (it is reasonable to assume spatial dependencies of the dependent and independent variables due to communal networks or higher-level offices), communal policies (e.g., building permits or local taxes) as well as structural factors (e.g., population density or demographic factors). Additionally, the paper considers non-linear dynamics of variables (e.g., EKC hypothesis). Finally, the so derived results are compared with results based on district (NUTS 3) and federal states (NUTS 2) level data to investigate the potential value-added of data at a true local scale in this context.

The impact of the Spanish Civil War on regional marriage rates

Dr. Rafael González-Val¹

¹Universidad de Zaragoza & IEB, Zaragoza, Spain

G17 Geopolitics, Conflicts and Security: Spatial Impacts and Perspectives, G4, August 28, 2025, 9:00 AM - 10:30 AM

The Spanish Civil War (SCW) caused a significant population decline, disproportionately affecting young men who were married or of marrying age. This study investigates whether the male scarcity resulting from the war's exogenous shock had transitory or permanent effects on the Spanish marriage market. Using annual data from 1900 to 2011 for two spatial units—provinces and provincial capitals—we employ a range of analytical methods to explore these effects. Time series analysis and panel data unit root tests indicate that marriage rates are stationary, suggesting that, despite a major shock like the SCW, marriage rates tend to revert to their long-term mean, although structural break tests reveal significant negative shifts in the mean marriage rates during the war period in many cases. Panel data models further show that the SCW had a significant but temporary negative effect on marriage rates at both the provincial and city levels, with the impact dissipating within 5–6 years after the war. At the provincial level, which captures the total number of marriages and population in the country, a subsequent decline in marriage rates is observed two decades after the SCW. This later decline is attributed to the 'missing generation' caused by the war.

Mobile Internet Connectivity and Household Wealth in the Philippines

Dr Zhiwu Wei¹, Professor Neil Lee², Dr Yohan Iddawela³

¹University of Cambridge, Cambridge, United Kingdom, ²London School of Economics, London, United Kingdom, ³Asian Development Bank, Manila, Philippines

G06-O4 Space and Digital Transformation, A1, August 29, 2025, 2:00 PM - 4:00 PM

The rapid spread of mobile internet has had profound economic and social consequences. In this paper, we consider the impact of mobile internet on household wealth in the Philippines. Identification comes from the rollout of 0.27 million geocoded cell towers across the Philippines islands, augmented with an instrumental variable approach based on distance to submarine cable landing points. We find evidence that better mobile internet access leads to improvements in household wealth, a finding which is robust to empirical challenges. This positive effect persists across different education groups and appears to be more pronounced in urban areas compared to rural ones. Combining individual survey datasets with POI data, we investigate potential mechanisms. Our analysis reveals that mobile internet connectivity significantly stimulates activities in several key economic sectors. Furthermore, we find that mobile internet access enhances male employment opportunities, though this positive effect does not extend to female employment. Based on these results and the literature, we suggest policymakers should (i) improve cell tower coverage, particularly in areas further from landing points, and (ii) accompany efforts to improve internet coverage with digital literacy programmes and efforts to encourage access to technology.

The contribution of co-working spaces in promoting collaborations and entrepreneurship

Prof. Amnon Frenkel¹

¹Technion - Israel Institute Of Technology, Haifa, Israel

G03-O1 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 27, 2025, 11:00 AM
- 1:00 PM

This research focused on co-working spaces in Tel Aviv, Israel's economic and cultural hub, which boasts the highest density of such facilities. The study aimed to assess the role of these shared workspaces in facilitating collaboration and stimulating entrepreneurial ventures among employees. A survey was distributed to 500 coworkers across 37 co-working spaces in the city. The findings shed light on the prevalence of collaboration within these spaces and their impact on knowledge sharing, nurturing entrepreneurial endeavors, and advancing employees' professional development.

The research findings reveal that a significant proportion of respondents reported involvement in formal collaborations, highlighting the spaces' role in fostering professional networks. This finding is central and noteworthy, underscoring the tangible role of co-working spaces in fostering collaborative efforts. The research results indicate that co-working spaces promote both formal and informal collaboration, knowledge transfer, entrepreneurial activities, and peer-to-peer communication. Communication within co-working spaces is primarily informal, with an emphasis on the social dimension provided by informal relationships. Entrepreneurs and freelancers in co-working spaces are more likely to engage in formal collaborations compared to others. They believe that co-working spaces contribute greatly to knowledge transfer and encouraging entrepreneurial activity. They consult with other peers frequently and believe that the co-working space allows them to acquire skills that advance their careers.

Overall, the findings demonstrate the significant role of coworking spaces in fostering innovation, community, and professional development.

The determinants of national city size distributions: A BMA approach

Dr. Miguel Puente-Ajovin², Dr. Marcos Sanso-Navarro², Dr. María Vera-Cabello¹

¹Centro Universitario de la Defensa Zaragoza, Zaragoza, Spain, ²Universidad de Zaragoza, Zaragoza, Spain

G07-O3 Spatial Attributes of (de)Population, Ageing, Loneliness and Demographics, G1, August 29, 2025, 9:00 AM - 10:30 AM

This paper investigates the factors shaping the distribution of city sizes within nations. Using globally consistent definitions of human settlements, we calculate their sizes based on gridded population and nighttime lights data. To address model uncertainty in identifying robust determinants of variations in the degree of concentration across countries, we employ Bayesian model averaging techniques. Our results show that international trade, democratization, and natural resource revenues are strongly correlated with the estimated slope parameters derived from rank-size regressions at the national level. While the Polity score and openness to trade are positively linked to a more even distribution of population and lights, the share of income from natural resources shows the opposite relationship. These results underscore the potential roles of openness and institutional frameworks in promoting more balanced national urban structures.

Breaking free from the regional carbon trap: analysing the persistence of CO2 emissions in European regions

Prof. Sébastien Bourdin¹, M. Arsène Perrot

¹EM Normandie Business School, Caen, France

G01-O7 Urban, Regional, Territorial and Local Resilience, B5, August 28, 2025, 4:30 PM - 6:30 PM

This study explores the persistence of CO2 emissions across European regions through the lens of path dependence and socio-technical lock-ins, introducing the concept of the "regional carbon trap." By analyzing disparities in regional CO2 emissions from 1990 to 2022 across EU NUTS-2 regions, the paper identifies factors that hinder or facilitate the low-carbon transition. A novel typology classifies regions into four trajectories: virtuous loop, carbon-intensive trap, high-emission trap, and evolution trap. The findings highlight the critical roles of industrial structure, governance quality, and economic diversity in shaping regional emissions pathways. Policy recommendations include tailored exnovation, diversification, and leapfrogging strategies, emphasizing the need for place-sensitive approaches to achieve EU decarbonization goals.

Subnational population ageing in Australia: Past, present, and future

Prof. Michael Cameron¹

¹University of Waikato, Hamilton, New Zealand

G07-O3 Spatial Attributes of (de)Population, Ageing, Loneliness and Demographics, G1, August 29,
2025, 9:00 AM - 10:30 AM

The structural ageing of the population is one of the key global trends of the 21st Century. The importance of population ageing has gained prominence because of a growing recognition that future populations will include an increasing share of older people, raising potentially important resource implications for national and local governments alike. In this paper, I summarise past, present, and future measures of population ageing for Australia at the regional (state and capital city) level. I supplement this with a summary of past measures of population ageing at the Local Government Area (LGA) level. This exercise highlights two key facts, that are similar to those shown in previous research for New Zealand. First, all subnational areas have been, and are projected to continue, ageing. Second, not all subnational areas are ageing at the same rate. Moreover the ranking of subnational areas in terms of past, present, and future ageing depends on the measure of structural ageing that is employed. In particular, I highlight the differences between ‘traditional’ measures of structural ageing, such as the median age or the proportion of the population aged 65 years and over, and a new class of axiomatically-consistent structural ageing measures developed by Cameron (2022). Policymakers and other decision-makers should remain cognisant of the importance of subnational population ageing.

Health at the Heart of Sustainable Urban Development How prioritizing health can transform cities

Prof. Lakshmi Sivaramakrishnan¹

¹Jadavpur University, Kolkata, India

S66 Sustainable Health: Progress Towards Universal Health Coverage as a Sustainable Development Goal (SDG 3.8) across the Globe, B3, August 29, 2025, 11:00 AM - 1:00 PM

Good health is a fundamental component of human happiness and contributes significantly to overall prosperity and economic progress. A healthy population lives longer and is more productive. Urban health refers to the branch of public health that specifically focuses on the health challenges and outcomes within urban or metropolitan areas. Rapid urbanisation and the fast pace of life have a tremendous effect on the health and lifestyle of people living in urban areas. The COVID-19 pandemic has highlighted the importance and necessity of efficient and effective healthcare systems and public health measures. It underscored the need for early detection, efficient healthcare delivery, and global cooperation in tackling health crises. Health issues do not recognise political borders. In the 21st century, global health security is essential for preventing the spread of infectious diseases, addressing emerging health threats, and promoting global stability.

The field of urban health encompasses the intricate causal connections between urban structures such as access to green space, noise quality, and places for social connections and their impact on health outcomes, as well as the underlying mechanisms and political factors that shape decisions regarding the structure and characteristics of cities. As such, the study and practice of urban health are ever-evolving and connect many disciplines, trades, and traditions (Kim, J., el. 2022). As diverse stakeholders are involved, the approach to it may be different, but its importance is universal to all urban areas.

This study will focus on the health care system in Kolkata, with special emphasis on the public health care system and the challenges and loopholes.

Key words: Urban health; Urbanization; Healthy lifestyle; Health crisis; Public health; Health determinants; Health infrastructure; Well-being; Health care programmes, Kolkata

Borrowing size and functions from nearby cities: The mediating role of inter-municipal cooperation

Mr Juan A. Piedra Peña¹, Dr. Marie Breuillé², Dr. Julie Le Gallo²

¹University of Oviedo, Oviedo, Spain, ²CESAER, INRAE-l'Institut Agro Dijon, Dijon, France

G21-O1 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 27, 2025,

2:00 PM - 4:00 PM

This paper analyzes whether efficiency gains coming from agglomeration effects in larger municipalities can benefit their smaller neighbors through 'borrowed size' and 'borrowed functions' mechanisms and explores the role of inter-municipal cooperation (IMC) in these mechanisms. Based on a dataset of French municipalities over the period 2016-2018, we make use of stochastic frontier analysis to estimate a measure of municipal spending efficiency and investigate the effect that borrowing size/functions have on it. Regarding borrowed size, our findings show that smaller municipalities benefit from the perks of agglomeration of their bigger neighbors regardless of IMC, as expected. However, bigger municipalities within an IMC group are those that benefit the most from borrowing functions from their smaller neighbors. These results follow recent literature for developed economies that find that larger cities are the ones that profit from their relationship with surrounding ones, as many of their functions rely on the support provided by neighboring areas. Our finding also suggest that these bigger municipalities seem to be casting an agglomeration shadow over smaller ones. This study provides important policy implication at the moment of designing tailored policies that exploit agglomeration effects through borrowed size and functions mechanisms. By locating closer to bigger markets, smaller municipalities benefit from higher efficiency; however, these benefits can be offset if bigger municipalities take advantage by overusing (or relocating) functions in these locations.

Is the Cart Before the Horse? Investigating the Link between Economic Growth and Nighttime Light Emissions in the EU

Professor Boris Portnov, Dr. Rami Saad¹

¹Western Galilee College, Turan Villiage, Israel

G01-O3 Urban, Regional, Territorial and Local Resilience, B5, August 27, 2025, 2:00 PM - 4:00 PM

Understanding the directionality of relationships between artificial nighttime light at night (ALAN) and economic activity, which is normally captured by the gross domestic product (GDP), is important for regional economic analysis and policy development. However, the question is whether ALAN is a reliable predictor of economic growth or merely a byproduct of it. This study attempts to answer this question by examining the relationship between GDP and ALAN using data obtained from nighttime satellite observations and linking them to GDP records available for NUTS3 regions of the EU. The co-integrated data set covering the period between 2001 and 2021 was analysed using the Granger causality test. The test revealed that the relationship between GDP and ALAN varies depending on the satellite records used. For example, data for the 2001-2012 period obtained from the DSMP observations detected a bidirectional relationship between GDP and ALAN, suggesting that economic activity and artificial lights reinforce each other. However, the coefficient of GDP was higher than that of ALAN, indicating that the impact of GDP on ALAN was more pronounced than the reverse effect. However, more recent data for the 2013-2021 period obtained from the VIIRS satellite detected that GDP impacts ALAN, but not vice versa. We explain the results by diminishing marginal returns of artificial illumination, where the expansion and intensity of nighttime lights result from economic growth but reach saturation points in highly developed areas, reducing their role as an independent driver of economic activity. Therefore, GDP seems to be the factor that impacts ALAN, rather than the factor that influences GDP. This suggests that economic growth drives increased illumination, but once a certain level of development is reached, additional illumination does not necessarily indicate further economic expansion. These findings highlight the importance of dataset selection in regional studies to avoid wrongful bidirectionality assumptions, such as the idea that increasing nighttime light emissions necessarily lead to economic growth, without considering local economic conditions, energy efficiency improvements, or differences in sectoral composition. This has important implications for policy makers and urban planners, as it suggests that while nighttime lights can serve as a proxy for economic development, they should not be relied upon as a policy tool to stimulate economic growth.

Land Restrictions and Neighborhood Density

Prof. André Seidel¹, Prof. Melanie Krause²

¹Western Norway University Of Applied Sciences (hvl), Haugesund, Norway, ²Leipzig University, Leipzig, Germany

G22-O4 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, G6, August 28, 2025, 4:30 PM - 6:30 PM

This paper studies how the variation in the availability of land for development within cities affects neighborhood density. We use within-city geographical obstacles as exogenous sources of scarcity of certain land types. We show that scarcer land types have higher urban density, which arises mostly from taller buildings and less from crowding or residential coverage. Importantly, the effect operates through the heterogeneous citywide supply of different land types rather than preferences for local geography. Our findings reveal a potentially significant effect that local regulations can have on the heterogeneity of city-wide urban density.

Regional Differences in the Stochastic Frontiers of Small-Scale Dairy Farmers Assisted by Technical Support in Brazil

Professor Mariza Almeida, Prof. Carlos Bacha

G12-O1 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 27, 2025, 11:00 AM - 1:00 PM

Although Brazil was the fifth largest producer of cow's milk in the world in 2023, the annual productivity of its cows reaches only 25% of that in the United States (the world's largest milk producer) and just 43% of the average achieved in Argentina. Furthermore, the average productivity of Brazilian dairy farming differs by up to 194% between the South and North regions of the country. Nevertheless, some regions in the country reach international levels of dairy cattle productivity, indicating that there is technology (whether in the form of cattle breed, feeding practices, and/or animal management) available in the country to increase its productivity. And one of the ways to disseminate this technology is through rural extension services. But even among producers who receive technical assistance, is there homogeneity in their technological levels? The objective of this article is to estimate stochastic production functions, using the Cobb-Douglas formulation, for small dairy producers assisted by the ATeG-Senar program and to highlight the differences in their Stochastic Frontiers and technical efficiencies. This program assists small producers for up to 24 months, and the article analyzes the situation of 4,767 dairy producers attended by this program in 2021. Six Stochastic Production Frontiers were estimated: one considering all producers together without distinguishing their regions, and the other five considering Brazil's five regions separately. Technical efficiency levels were then calculated based on these estimates. It was found that the coefficients associated with production factors and the determinants of inefficiencies are not of the same magnitude across the five regions considered, nor are the dimensions of their technical efficiencies. This suggests that something beyond just technical assistance is needed to standardize and improve the technological level of the national dairy farming sector.

Intercity innovation collaboration and catch-up of laggard cities

Prof. Cui Zhang¹, PhD Baifang Wang¹

¹Jinan University, Guangzhou, China

S41 Regional Science and Economic Development: Synergies, Insights, and Opportunities, E12, August
29, 2025, 2:00 PM - 4:00 PM

Does intercity innovation collaboration contribute to the catch-up of laggard cities? We study this question in China and show that intercity innovation collaboration helps laggard cities catch up with frontier cities. Technological capability improvement is an important underlying mechanism. However, the role of intercity innovation collaboration in catching up varies according to the partner chosen. Collaboration with frontier cities is more important for laggard cities to close the gap with the frontier than collaboration with other laggard cities. Furthermore, we show that intercity innovation collaboration widens the gap between laggard cities close to the frontier and those further from the frontier, with important implications for innovation disparities.

Refugees, dispersal policies and labour market integration: Insights from Norwegian data

Mr. Karl-Gunnar Severinsen¹, Dr. Arnstein Gjestland¹, Prof. Inge Thorsen¹, Prof. Jan Ubøe²

¹Western Norway University Of Applied Sciences, Haugesund, Norway, ²Norwegian School of Economics, Bergen, Norway

G10-O4 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 29, 2025, 11:00 AM - 1:00 PM

Using a quantitative approach in a causal design based on Norwegian registry data, our main ambition is to discuss how characteristics of the local labour market affect the integration process of refugees. We use data on four groups of refugees. The first group arrived in the mid-90s from Bosnia, the second group consisted of Kosovar refugees arriving in 1999, the third group arrived from Syria in 2015/16, while the fourth group is still arriving from Ukraine, after the Russian invasion in 2022. The refugees we are considering are upon arrival subject of a policy of forced dispersal across municipalities. We discuss the consistency between the observed dispersal policy and the demand for a successful labour market integration of the refugees. We evaluate a set of complementary measures representing the local demand for labour and employ a 3SLS approach to account for the simultaneity between getting a job and staying in the initial municipality during the process of social and labour market integration. Our analysis focuses on a set of conflicting goals, such as the balance between rural and urban areas and the integration of refugees. The results demonstrate that authorities should better account for local labour market conditions when designing their dispersal policy, while also considering local amenities and housing prices.

Divided by Social Frontiers: How Neighbourhoods Shape Immigrant Labour Market Participation in Norway

Mr Karl-Gunnar Severinsen¹, Dr. Arnstein Gjestland¹, Prof. Inge Thorsen¹, Prof. Jan Ubøe²

¹Western Norway University of Applied Sciences, Haugesund, Norway, ²Norwegian School of Economics, Bergen, Norway

G10-O2 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 27, 2025, 2:00 PM - 4:00 PM

This paper investigates the impact of social frontiers (SF) on labour market participation and unemployment among immigrant groups in Oslo, Norway. Using Norwegian registry data from 2018, we examine how the presence of social barriers within urban neighbourhoods influence the economic engagement of both native and immigrant workers. Our study hypothesises that the propensity to be outside the workforce is influenced by demographic and socioeconomic characteristics, as well as the residential neighbourhood's social composition. We distinguish between areas with high proportions of non-Western immigrants (SF High), low proportions of immigrants (SF Low), and areas with insignificant differences (SF None). Employing a nested logistic regression model, we analyse the probabilities of various labour market and educational positions, accounting for gender, age, wage, education, and family background. Our findings reveal that social frontiers significantly hinder the integration process of immigrants. Specifically, immigrants in SF High neighbourhoods exhibit lower labour market participation rates, higher unemployment rates, and reduced likelihoods of entering higher education or self-employment compared to those in SF Low or SF None areas. These barriers are particularly pronounced for non-Western immigrant women. Overall, our research highlights the detrimental effects of social frontiers on the economic and social mobility of immigrants, underscoring the need for policies that promote integration and equal opportunities across urban areas.

Climate neutrality framework for rural settlements

Mr Tristan Berchoux¹, Mr Yuval Damari¹

¹Iamm, Montpellier, France

S55-S2 Taking into Account Diversity to Shape just Rural Futures: Novel Indicators for Resilient and Inclusive Development, Amph 2, August 27, 2025, 2:00 PM - 4:00 PM

This contribution introduces a modular, indicator-based framework specifically tailored to measure climate neutrality in rural regions. Its core objective is to provide local policymakers and stakeholders with a decision-support tool that can track progress, identify high-impact interventions, and align closely with the EU's Long-Term Vision for Rural Areas. Recognizing that rural communities often face unique conditions—such as dispersed populations, resource constraints, and distinct economic structures—the framework addresses six key domains: Energy, Transportation, Agri-food, Waste, Industry, and Buildings, each supplemented by cross-cutting values like environmental sustainability, affordability, and resilience.

Methodologically, the framework builds upon a comprehensive literature review of sustainability indices, policy documents, and technical studies. Through a structured selection process, a suite of quantifiable indicators was identified, ensuring that each met criteria for specificity, measurability, and relevance to rural contexts. To account for the varying availability of local data, the framework supports multiple spatial scales, applying a min–max normalization technique that allows for cross-comparisons while remaining adaptable to region-specific targets. Weighting schemes are similarly flexible; communities may adopt equal weighting, statistical approaches, or even internet search volume-based methods to reflect public interest.

Data sources are drawn from both open-access databases and policy repositories—particularly the European Environment Agency's policy database and the Covenant of Mayors' submissions—to capture diverse local measures on process and impact. By integrating indicators with a curated toolbox of 104 policy measures, the framework offers practical guidance on how local actions can be tracked in both their implementation and outcomes. In doing so, it not only empowers rural areas to tailor interventions to their specific priorities but also fosters broader comparability and consistency with EU-level climate neutrality goals.

From Arrival to Employment: How Local Labour Markets Shape Refugee Integration

Mr. Karl-Gunnar Severinsen¹, Mr Arnstein Gjestland¹, Prof. Inge Thorsen¹, Prof. Jan Ubøe²

¹Western Norway University Of Applied Sciences, Haugesund, Norway, ²Norwegian School of Economics, Bergen, Norway

G10-O1 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 27, 2025, 11:00 AM - 1:00 PM

The aim of this paper is to examine the integration of refugees into local labor markets in Norway, with a specific focus on the time it takes for Ukrainian refugees to gain employment after arrival. Building on previous research, we utilize population register data of refugees aged 18-60 who arrived in Norway between 1992 and 2023 from Bosnia, Kosovo, Syria, and partially Ukraine. After some initial descriptive analysis, using survival and cumulative hazard functions, we employ Cox regression to estimate the duration until first employment. We introduce various measures of the local labor market situation as explanatory variables, such as job diversity, accessibility relative to alternative job locations, and the local job balance. In addition we discuss unobserved heterogeneity. Then, we analyze how the "hazard" of employment depends on these measures. Our aim is to understand how local labor market characteristics influence the integration process and predict and compare employment outcomes for newly arrived Ukrainian refugees based on historical data. Since the data for Ukrainian refugees is limited, we also utilize data covering the refugee groups mentioned above. Preliminary results indicate that Ukrainian refugees enter the labor market faster compared to previous groups. This conclusion is based on approximately 400 days of available data. Additionally, we estimate gender and age differences within the groups. The findings will contribute to the ongoing discussion on the effectiveness of dispersal policies and how integration systematically differs between rural and urban areas.

Migrant integration policies and pro-immigrant sentiment in Europe

Prof. Alessandra Michelangeli¹

¹Università di Milano Bicocca - DEMS, Milan, Italy

S14 Migrant Integration Challenges and Policies, F1, August 28, 2025, 4:30 PM - 6:30 PM

Growing migrant inflows from outside Europe have intensified the efforts to foster social and economic inclusion of migrants and enhance social cohesion. At the supranational level, the European Commission has launched several initiatives, such as the action plan of integration and inclusion 2021-2027. At national level, governments have implemented a variety of policies in different areas to promote integration of migrants. This is essential for the development of a fair society, which may enable people to move towards a dynamic economy that works for all. As Winkler (2021) points out only “countries with a clear, positive attitudes to immigration are more likely to attain their potential.” In this paper, we investigate natives’ positive attitudes towards immigrants in 18 European countries with the aim of determining what factors shape pro-immigrant sentiment. To this purpose, we use data from the European Social Survey Round 10 that provides information about natives’ attitudes towards immigrants in the two-year period September 2020 - August 2022. The empirical design is based on the instrumental variable approach that allows to control for the possible endogeneity between pro-immigrant attitudes and immigrant inflows. We also investigate possible non-linearities of explanatory variables in determining pro-immigrant attitudes across European regions.

Our results suggest that countries, which are moving towards more favorable conditions to immigrants, experience a rise in the overall positive attitudes and in positive attitudes with reference to hosting country’s economy. Positive attitudes with reference to hosting country’s culture are instead always increasing as further inclusive policies are implemented.

Understanding Risk Perception for Safer Living Environments: An Analysis of Natural and Man-Made Disasters

Ms Soyeon Kim¹, Prof. Brian Hong Sok Kim¹

¹Seoul National University, Seoul, South Korea

G01-O1 Urban, Regional, Territorial and Local Resilience, B4, August 27, 2025, 11:00 AM - 1:00 PM

A safe living environment is a crucial contributor to an individual's quality of life. The increasing prevalence of uncontrollable risk factors, such as climate change, air pollution, emerging infectious diseases, and serious crimes, has underscored the essential role of governments in ensuring societal safety. To develop effective risk mitigation strategies, it is imperative to understand which threats local residents perceive as most significant. This study aims to analyze the factors influencing natural and man-made disasters. Additionally, it seeks to examine the safety systems required to enhance quality of life. Utilizing seven waves of data from the Social Survey conducted biennially by Statistics Korea between 2010 and 2022, we employed a Hierarchical Age-Period-Cohort (HAPC) model to assess perceptions of risk from natural disasters and structural or facility-related hazards (man-made disaster). The results reveal a U-shaped age effect on risk perception, indicating that both younger and older age groups perceive higher levels of risk compared to middle-aged individuals. Significant differences in risk sensitivity were also observed based on gender, education level, and income. Notably, disparities between urban and non-urban residents were identified: non-urban residents perceived natural disaster risks as more severe, while urban residents were more concerned about man-made disasters. These findings highlight the importance of developing region-specific safety systems and tailored interventions to address local vulnerabilities. On the other hand, an examination of the period effect by income level revealed that higher-income groups are more influenced by events occurring at specific periods in shaping their risk perception. This result indicates that period effects were present among high-income groups for both types of disasters. This can be attributed to differences in risk perception across income levels, which are linked to disparities in access to information. By understanding the demographic and regional factors that influence risk perception, policymakers can enhance overall societal safety and improve the quality of life for all citizens.

European, country, sectoral, and regional factors driving BC fluctuations in the Eurozone

Dr. Aikaterini Karadimitropoulou¹, Prof. Krysztof Beck¹

¹University Of Piraeus, Piraeus, Greece

G16-O1 Statistical And Econometric Methods of Urban and Regional Analysis, G1, August 27, 2025,
11:00 AM - 1:00 PM

Ongoing monetary integration in Europe requires close monitoring of the degree of business cycle (BC) synchronization to assess the effectiveness of the common monetary policy. A Bayesian dynamic latent factor model is estimated using disaggregated real gross value added (GVA) data that includes four different types of factors: European, country, sectoral and regional. A richer factor structure reduces the variance attributed to the European factor (9%), while country, sectoral, and regional factors account for 26%, 21%, and 27%, respectively. Sectoral factors are the main drivers of international BC. Sub-periods analysis shows that the share of variance explained by the European factor increased modestly, while the share explained by the sectoral factor increased significantly at the expense of the country factor. The results support that, when using a rich data structure, the European Commission's view and Krugman's view on the synchronization of BC in the monetary union can co-exist. Next, using Bayesian model averaging, the country factor is prevalent in regions characterized by the highest degree of specialization and belonging to countries with the least developed financial markets and most volatile exchange rates. The sectoral factor is most prevalent in regions that are part of countries with the most developed financial markets. Finally, the importance of commodity, monetary, fiscal, productivity, and terms of trade factors is examined for the European and country factors using factor-augmented vector autoregression models.

On the evolution over time of Financial Inclusion: A new multivariate index for Mexican municipalities

María del Carmen Dircio-Palacios-Macedo², Dr. Paula Cruz-García¹, Dr. Fausto Hernández-Trillo³, Dr. Emili Tortosa-Ausina²

¹Universitat de València, València, Spain, ²Universitat Jaume I, Castelló de la Plana, Spain, ³CIDE, , Mexico

G10-O3 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 29, 2025, 9:00 AM - 10:30 AM

Access to financial services is unequal around the world. In many countries, less than half of the population has an account at a financial institution, and this lack of access to finance is often the critical mechanism for generating income inequality and uneven growth. This is the case of Mexico, where financial exclusion affects large shares of the population—mainly in rural and poorer localities. This is an ongoing concern for policymakers, given the way it thwarts socioeconomic opportunities to families and businesses alike, hampering economic growth and development. However, assessing the relevance of the issue requires a careful measurement of financial inclusion which, up to now, has been achieved to a limited extent. We contribute to the literature and in this context by proposing a multivariate index of financial inclusion for Mexico, at the municipal level for the period 2013-2021. This index covers different dimensions, including Access, and Usage. The results corroborate that the proportion of unbanked population are still large, although it is unevenly distributed in space.

The role of global value chains in the EU regions catch-up

Dr. Lucía Bolea¹, Prof. Rosa Duarte¹, Prof. Geoffrey J.D. Hewings², Dr. Sofía Jiménez¹

¹University Of Zaragoza, Zaragoza, Spain, ²University of Illinois, Urbana-Champaign, United States
G04-O2 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 27, 2025,
4:30 PM - 6:30 PM

Since the last decades of the XX century, countries worldwide become increasingly interdependent. This new era of globalization has been characterized by an increasing fragmentation of production and the irruption of the so-called Global Value Chains (GVCs). In this context, the behavior of economies advancing at different speeds is highly related to the concepts of economic convergence and catch up. One of the clearest examples of the convergence process is the European Union. At the regional level, the goal of regional convergence has been declared and committed to in the EU Treaties. However, the level of inequality between regions remains high, and different international institutions have claimed on the effects of these raising income differences in the observed dissatisfaction level within specific geographical areas and social groups, threatening social cohesion. GVCs have been, commonly, studied at country level. Nevertheless, recent literature has also paid attention to their regional scale, existing literature shows that regional economic specialization affects the economic performance of regions.

Within this framework, the main objective is to analyze to what extent the configuration of GVCs in Europe, and the way in which the regions have engaged in them, has contributed to the processes of economic and technological catch-up in Europe. In this context, some works claim the necessity of incorporating the potential spillovers among regions to capture a more informative picture of regional economies. Thus, we also aim to check the importance of neighboring regions, both geographically and economically, in explaining these processes. From an empirical standpoint, we combine multiregional input-output framework, for the design of the main indicators of regional engagement in the GVCs, with a spatial econometrics' strategy, which is used to evaluate the main relationships, and to identify the main drivers and regional spillovers. Notably, we take advantage of the recently published FIGARO-REG database, which contains information on 240 NUTS2 EU regions for the year 2017, and EUROSTAT Regional Statistics as main databases. It should be noted that we consider not only the catch up of regions within the whole of Europe, but also with the closer countries and within the country, what let us understand the different development paths. First results reveal the existence of spatial dependence, and a positive and significant relation between participation and catch-up, while there is more uncertainty in relation to position.

The Cost of Living for Elderly Households in Brazil: Regional Disparities and Policy Implications

Mr Alexandre Nunes Almeida¹, Mr. Carlos Roberto Azzoni², Mrs. Tatiane Almeida Menezes³, Mrs. Ana Luiza Neves de Holanda Barbosa⁴

¹University of Sao Paulo (ESALQ), Piracicaba, Brazil, ²University of Sao Paulo - School of Economics (FEA), Sao Paulo, Brazil, ³Federal University of Pernambuco (UFPE), Recife, Brazil,

⁴Institute for Applied Economic Research (Ipea), Rio de Janeiro, Brazil

G07-O3 Spatial Attributes of (de)Population, Ageing, Loneliness and Demographics, G1, August 29, 2025, 9:00 AM - 10:30 AM

The rapid demographic transition in Brazil has led to a significant aging of the population, resulting in a shift towards an age distribution pattern similar to those seen in developed countries. This structural and irreversible transformation highlights the need to understand the consumption patterns of the growing population aged 60 and over, including emerging family configurations, such as the increasing number of children and grandchildren living with elderly parents. Additionally, a significant portion of the elderly's budget is allocated to health services and pharmaceuticals for treating chronic-degenerative diseases, which can affect the financial stability of the entire family.

The objective of this study is to examine the cost of living for elderly families across 13 Brazilian metropolitan regions. The analysis uses expenditure data from 58,039 households collected between July 2017 and July 2018, along with prices from the Consumer Price Index, covering 264 consumer goods. To estimate comparative costs and assess purchasing power parity, we employ the Country Product Dummy model, a robust methodology for evaluating regional price differences.

Our main results reveal that elderly household heads generally face higher living costs than their non-elderly counterparts across the majority of the cities studied. Brasilia, Rio de Janeiro, and Curitiba are the most expensive cities for elderly individuals, while Salvador, Fortaleza, and Belem/Recife have the lowest costs. In addition, specific expenditure categories significantly increase the financial cost for the elderly population, with food prices particularly high in Brasilia and Sao Paulo, elevated transportation costs in Belo Horizonte, and substantial healthcare expenses in Goiania.

These findings are crucial for regional economic research and public policy, as they provide a more precise understanding of inequality by accounting for variations in the cost of living between metropolitan areas. As Brazil's demographic transition accelerates, policymakers, businesses, and social programs must adapt to address the needs of the aging population. A better understanding of the financial challenges faced by elderly individuals also helps map regional disparities and supports strategies aligned with the Sustainable Development Goals to improve well-being and quality of life for this growing population.

Equity and efficiency impacts of alternative property tax regimes for funding urban infrastructure

Prof. Arthur Grimes

¹Motu Economic & Public Policy Research, Wellington, New Zealand

S22 Taxes, Public Finance and Spatial Development, D12, August 29, 2025, 11:00 AM - 1:00 PM

A land tax has long been recognised as an efficient tax through which central or local government can fund its expenditures. It is also recognised that a capital value tax (which taxes the value both of the land and any improvement on it) discourages development whereas a land tax has no associated discouragement for development. A land value tax therefore contributes to greater urban intensification relative to a capital value tax. A related literature analyses the properties of a 'betterment' tax based on the uplift (betterment) in property values that may result from a new infrastructure investment, as mooted by JS Mill. This paper analyses equity, as well as efficiency, outcomes that arise when funding a new infrastructure development through these three different types of property tax, i.e. (i) a proportional capital value tax, (ii) a proportional land value tax, and (iii) a betterment tax on land value uplift. The comparison is formulated initially within a partial equilibrium model that takes city population as given. The paper then adopts a general equilibrium approach which examines city level outcomes of an infrastructure investment where that investment is funded either by a land value tax or some other form of tax. The analyses demonstrate not only the efficiency advantages of land value and betterment taxes relative to a capital value tax, but also the equity advantages of a betterment tax over Henry George's 'single tax' on land value.

FinTech and Regional Economic Performance in China

Dr. Minzhi Wu, Dr. Iván Arribas, Dr. Jesús Peiró-palomino¹, Dr. Emili Tortosa-Ausina

¹University Of Valencia, Valencia, Spain

G02-O5 Regional Growth Models, Competitiveness, and Convergence, B1, August 29, 2025, 9:00 AM - 10:30 AM

With the emergence of FinTech, understanding the mechanism by which this phenomenon promotes economic development is becoming increasingly important. However, very few scholars have touched on this issue and the link between FinTech and economic performance is still far from clear. This study empirically examines the effects of FinTech on economic performance for a panel of 31 provinces in mainland China between 2012 and 2019. We divide the selected provincial administrative regions into three sub-samples---namely, the Eastern region, the Central region, and the Western region---to investigate whether the impact varies across different geographical areas. We use the digital financial index compiled by the Digital Finance Research Center of Peking University as a proxy for FinTech. Per capita gross domestic product (GDP) and labour productivity are used to measure economic activity in this study. A set of control variables from three aspects, namely economic characteristics (government expenditure, industrial structure and trade openness), demographic factors (population growth and urbanization), and capital stock indicators (human capital and investment in fixed assets), are considered to control for their impact on economic performance. To do this, we consider a robust version of the instrumental quantile regression approach, which is particularly interesting when the units under study (in our case, Chinese provinces) are at different stages of economic development. Our findings show a positive effect of FinTech on provincial economic development. However, the magnitude and significance of the effect vary across provinces and dimensions of FinTech, highlighting the convenience of designing policies that take into account the economic disparities across regions and provinces.

Qualitative differences in understandings of capital in Public Services under the Wellbeing of Future Generations (Wales) Act

Dr. Thomas Avery¹

¹Swansea University, Swansea, United Kingdom

S04 CBD and Forms of Capital for Local Well-being, G2, August 27, 2025, 11:00 AM - 1:00 PM

Wellbeing is a key concept and responsibility in Welsh policymaking and legislation, broadly defined by the Welsh Future Generations (Wales) Act (WFGA, 2015). However, local implementation and reporting on this statutory duty, which falls to regional Public Services Boards (PSBs), has to date been relatively ad hoc. While PSBs must assess and evaluate their impact on local wellbeing, there is no agreed means for achieving this and the value to society of this work goes unmeasured.

This paper summarizes support provided to two PSBs through the UKRI/ESRC & The Productivity Institute (TPI) funded MATHER Project. The project aimed to operationalize wellbeing and productivity concepts to enable feasible data collection and evidence-based reporting by PSBs. An analytical tool was co-created with input from stakeholders, policy makers, and the researcher team to enable consistent reporting across PSBs. These processes enabled the structured measurement and analysis of capital inputs from PSB work and the resultant outputs in terms of measures of wellbeing.

Findings are presented from qualitative analysis of focus group discussions, in-depth interviews and SWOT analysis that accompanied the economic Culture Based Development (CBD) analysis. This engagement, supported by Swansea University's Local Challenges Research Office, explored how local stakeholders engage with the eight forms of local capital as defined by CBD and how they contribute to local development and wellbeing. We cross-checked how the capitals as conceived in the MATHER tool were perceived and used by PSB workstream leaders in promoting wellbeing. The qualitative interventions therefore enabled a transfer of knowledge from academia to practice and ensured consistent and clear development and usage of the tool for all involved parties. These processes will enable project scaling across Wales, offering PSBs a means to better measure and compare their wellbeing work's impact on local productivity.

Initial findings from workshops held in 2024 and 2025 suggest social capital plays a strong role in offsetting limited financial capital, with much of the PSB's work relying on goodwill within shared partnerships between public bodies. More comprehensive findings and policy implications will be presented subject to the completion of interviews and further workshops in spring 2025.

Direct and indirect economic damages posed by the compound threat of climate-driven sea-level rise and river flooding in European regions.

Mr Shane Dunne¹, Dr. Theodoros Chatzivasileiadis¹, Prof.dr. Tatiana Filatova¹, Dr. Olga Ivanova²

¹Delft University Of Technology, Delft, The Netherlands, ²PBL Netherlands Environmental Assessment Agency, The Hague, The Netherlands

S15 Regional Climate Change Adaptation, G5, August 27, 2025, 4:30 PM - 6:30 PM

Coastal and riverine regions in Europe face increasing threats from sea-level rise (SLR) and river floods exacerbated by climate change. Although economic assessments of these hazards traditionally rely on aggregate metrics at national or continental scales, regional disparities and sectoral specificities remain insufficiently examined. To quantitatively explore these distributional impacts, this paper employs a dynamic Computable General Equilibrium (CGE) model EU-EMS at the NUTS2 level for the EU and the UK. Our approach integrates detailed spatial data on hazard exposure and vulnerability with an intertemporal CGE framework capable of capturing complex economic feedbacks across regions and sectors to estimate both the direct and indirect economic repercussions of combined SLR and river flood events by 2100. In contrast to aggregated studies, this methodology employing fine regional and sectoral resolutions reveals wide heterogeneity in outcomes. Coastal zones incur the largest relative GDP losses due to direct damage from climate-induced SLR, with some heavily exposed regions experiencing declines in the range of 10–20% relative to a no-impact baseline. Meanwhile, significant river flood risks extend into inland regions, potentially driving flood-related losses up to €44 billion annually in a high-end warming scenario without adaptation. These shocks have non-negligible spillover effects in interconnected sectors such as construction, public services, and manufacturing, as businesses grapple with disrupted supply chains, damaged infrastructure, and shifts in consumer demand. By jointly examining these compounding hazards, we show that the path to economic recovery is significantly more constrained than in scenarios where only one hazard is considered. Both SLR-exposed coastal areas and inland regions prone to river flooding require extensive repair efforts from the construction sector. However, capacity constraints within the construction industry—already overtaxed by simultaneous reconstruction demands—create disproportionately large knock-on effects that ripple throughout the wider European economy, magnifying the initial damages. Our findings underscore that spatially differentiated policies are essential to addressing the uneven distribution of climate impacts across Europe. This is crucial when analyzing the effects of compounding hazards jointly, especially when they revert the investments and other economic mechanisms into opposite directions across coastal and inland regional economies. Regions with high exposure to SLR and river floods require targeted, region-specific adaptation strategies that consider local sectoral compositions and vulnerability profiles to meet the challenges of ensuring finance for both covering climate losses and funding climate adaptations.

Assessing Innovative and Sustainable Solar Energy Production in Agroecosystems

Prof. Aliza Fleischer¹, Dr. Aviv Stern¹, Dr. Ofir Rubin², Mr. Yehuda Slater¹, Prof. Iddo Kan¹

¹Hebrew University of Jerusalem, Rehovot, Israel, ²Ben Gurion University, Negev, Israel

G12-O5 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 29, 2025, 2:00 PM - 4:00 PM

Policies promoting agrivoltaics face the challenge of balancing between mitigating climate change and farmland preservation. This study applies an ecosystem-services (ESS) approach to evaluate the introduction of transparent solar panels (TSP) as photovoltaic and agricultural greenhouse systems (PVGs) with low impact on agricultural activities. Using a partial equilibrium model of Israel's vegetative agriculture, we simulate the introduction of TSP on farmers' optimal land allocation between open-field and covered crops and its sustainability. The model accounts for food and energy production as provisioning vegetative-agriculture ESS (VAESS), and for greenhouse-gas (GHG) emissions and open-field landscape as non-provisioning VAESS. Our findings suggest that TSP represents an economically viable and sustainable PVG technology. The adoption of TSP, alongside policies that internalize the value of non-provisioning ESS, is projected to convert 1.3% of Israel's cultivable land from open fields to covered crops, contributing approximately 7% to the nation's electricity supply. The estimated annual increase in VAESS per hectare is valued at \$864, comprising \$812 from electricity generation, \$259 from GHG emission reductions, \$277 in consumer surplus from agricultural products, offset by a \$441 reduction in agricultural output, and a \$43 decrease in landscape value. Our analysis demonstrates how an ecosystem services framework can guide policy decisions toward optimal land-use allocation in agrivoltaic systems.

Getting older in Italy: how to foster the transition from private transportation to shared mobility solutions

Dr. Federica Rossi¹, Dr. Tiziano Pavanini

¹Politecnico di Milano - DASTU, Milano, Italy

G07-O1 Spatial Attributes of (de)Population, Ageing, Loneliness and Demographics, A4, August 27,
2025, 2:00 PM - 4:00 PM

According to the World Health Organization (WHO, 2022) the global population is aging at an unprecedented pace: experts predict that by 2030, 1 in 6 people in the world will be over 60. In order to better address this phenomenon at a global level, WHO created a program of policies and measures together with the member states, called "The Decade of Healthy Aging 2020-2030", aimed at supporting each country in tackling the economic and social implications that this trend entails (Rudnicka et al., 2020). In scenarios of this nature, local public transport (LPT) assumes a crucial function in mitigating the social and economic discrimination that often accompanies the retirement phase for the elderly. In this context, active ageing policies, delineated as "the process of optimising health, participation and safety opportunities to enhance the quality of life of ageing individuals" (WHO, 2002), ensure that the elderly maintain good health, psychological well-being, and elevated levels of happiness (Kim et al., 2021). Nevertheless, the failure of local governments to provide adequate solutions has a negative impact on the accessibility of the elderly to LPT. Indeed, it has been observed that the elderly often avoid using LPT altogether, preferring to use cars instead (Sun and Lau 2021). The objective of the present study is to administer a questionnaire to elderly people residing in the Italian cities of Milan and Genoa in order to ascertain their primary mobility needs and the factors that motivate or impede their transition from private transportation to shared mobility solutions. The results of this study are expected to provide decision-makers with more precise indications, thereby encouraging them to cease the planning of public transport provision in an aggregate manner. It is imperative that they recognise that different age groups correspond to different needs and requirements. This is particularly salient in the case of the elderly, who must be assured improved accessibility to the LPT and to all urban services.

Systemic and Temporal Assessment of the Oil and Gas Sector in Sergipe, Brazil

Prof. Luiz Carlos de Santana Ribeiro¹, Prof. José Ricardo de Santana¹

¹Federal University of Sergipe, São Cristóvão, Brazil

G19-O3 Urban, Regional and Local Policy Evaluation, G3, August 28, 2025, 9:00 AM - 10:30 AM

Oil and gas (O&G) production in Brazil has its origins in the state of Sergipe, located in the country's Northeast region. The state's production began in 1963 in the municipality of Carmópolis, which also hosted Brazil's first offshore production. O&G exploration has become one of the main drivers of economic development in Sergipe, with Petrobras playing a central role in generating income and employment in the state's economy. Recently, Petrobras has restructured its operations in the region, selling onshore exploration assets. In the offshore segment, the company announced a divestment plan for shallow-water fields, with projected investments of USD 2.0 billion, alongside the commencement of deepwater exploration, with expected investments of USD 5.0 billion.

This study aims to conduct a systemic and temporal assessment of Sergipe's O&G sector. To this end, input-output indicators and methods will be employed, based on two compatible interregional matrices for the years 2011 and 2018. These matrices comprise 67 sectors and two regions: Sergipe and the rest of Brazil. This study provides a novel contribution by using these matrices in a comparative framework, enabling the identification of the O&G sector's role within Sergipe's production chain and assessing whether significant structural changes have occurred over the period analyzed. The findings are expected to inform sectoral policies by identifying intersectoral characteristics and specificities of Sergipe's O&G sector, thereby enhancing public and private investment strategies in light of the state's evolving economic landscape.

Circular Economy and Trade in Global Value Chains: innovative milieu approach

Dr. Damares Lopes Afonso¹

¹UCLouvain, Louvain-la-Neuve, Belgium

S01-S1 The Spatial, Regional and Urban Dimensions of Circular Economy, Amphitheater II - SAKIS

KARAGIORGAS, August 27, 2025, 11:00 AM - 1:00 PM

The role of international trade in accelerating the transition to a Circular Economy (CE) is in the mainstream of the current literature; however, little is known about both CE trade within Global Value Chains (GVCs) and regional participation in this trade. The present article identifies regional features related to Domestic Value Added (DVA) growth in CE trade in Italy, which is seen as advanced country in CE, in its theoretical and empirical approach. Theoretically, the article is an analysis of factors capable of promoting CE at regional level and influencing its trade, including market, institutional and technological factors, which compose the milieu. Empirically, it shows the positive impact of these factors on DVA growth in CE trade, unlike what happens in trade, in non-CE sectors. These factors should be taken into consideration by policymakers and stakeholders, altogether, to promote CE at regional level in Italy.

Impacts of inequalities in living standards on sectoral production: an input-output analysis applied to the Overseas Departments and mainland France

Dr. Zoulfikar Mehoumoud Issop¹, Pr Yves Croissant², Philippe Randriamasimanjato¹

¹University Of La Réunion (CEMOI), Saint-Denis, France, ²Université Lumière Lyon 2 (LAET), Lyon, France

G19-O3 Urban, Regional and Local Policy Evaluation, G3, August 28, 2025, 9:00 AM - 10:30 AM

The objective of the article is to study the impact on sectoral production of the French overseas departments (DOM) and mainland France according to the differences in living standards of households.

We use the input-output approach extended to differences in living standards to compare, according to the territories and sectors, the links between household consumption and the production of the different sectors of the economy, and to identify the sectors that are most sensitive to changes in living standards. The interest for public decision-makers to know such multipliers is to effectively target economic policies (Docks dues as “octroi de mer”, sectoral subsidies, etc.) towards the sectors with the greatest effects and towards the categories of households having the greatest impact on production. It is known, for example, that low-income households may spend a larger share of their budget on food and housing, while high-income households may spend more on leisure, education and health. Targeting the categories of households with the greatest multiplier effects makes it possible to better target fiscal policies in a context of budgetary constraints.

The extended input-output approach combines data in consumption according to household living standard quintiles provided by the Household Budget Surveys (HBS) and the intersectoral links provided by the symmetrical Input-Output Tables (IOT), coming from the 2017 HBS surveys and the 61-sector symmetrical IOTs for Reunion Island in 2019 and the 18-sector symmetrical IOTs for the other overseas territories (French Guiana, Guadeloupe and Martinique) and mainland France. We then evaluate the multiplier effects on the production of each sector of a change in final demand, breaking down the direct and indirect effects (from the Leontief matrix). The direct effect represents the change in production by sector that responds immediately to the demand shock. The indirect effect represents the change in production due to the intermediate consumption of the previous sectors as well as the changes in production due to these last intermediate consumptions and so on. The production multipliers obtained are then combined with the budget coefficients according to the shares of income that each quintile of households allocates to different types of products and sectors.

Multipliers estimated in the DOM show a downward trend with the increase in the standard of living quintile. Multipliers for France stand out from those for the DOM because households in all quintiles tend to spend a larger proportion of their income, which reinforces the multiplier effects there.

The general nesting spatial panel data model

Prof. Paul Elhorst¹, Dr. Chang Tan¹, Dr. Michaela Kesina¹

¹Rijksuniversiteit Groningen, Groningen, The Netherlands

G16-O4 Statistical And Econometric Methods of Urban and Regional Analysis, F5, August 29, 2025,
2:00 PM - 4:00 PM

This paper sets out the general nesting spatial econometric model with spatial lags in the regressand, regressors and the error term, as well as individual and time fixed effects for both large N fixed T and large N large T panel data settings. The error term is specified as a spatial moving average process and heteroscedastic disturbances. The spatial weight matrices are distance-based, parameterized and different for each spatial lag to achieve that the magnitude and spatial reach of the spillover effects caused by changes in the regressors or shocks to the error term take different values. The model parameters are estimated by an iterative two-stage quasi-maximum likelihood procedure. It is demonstrated that this modelling setup and estimation procedure significantly reduces theoretical and practical identification problems that have prevented broader application of this model in empirical research. Its finite sample properties are investigated by means of Monte Carlo simulation. GDP per growth data is used to illustrate the benefits in an empirical setting.

New skill adoption and cities

Dr. Harm-Jan Rouwendal¹, Anet Weterings, Sierdjan Koster

¹University Of Groningen, Groningen, The Netherlands

YSS1, G1, August 28, 2025, 11:00 AM - 1:00 PM

This paper studies the relationship between new technology adoption and agglomeration economies. We assess to what extent the adoption of new technologies differs across space by studying differences in the demand for new digital skills in the Netherlands. The use of online job vacancy data allows us to study the implementation of new technologies on the skill level in the workplace and empirically analyse the spatial variation in new digital skill adoption within occupations. Results show that employers in urban areas demand new digital skills for open jobs more frequently and more intensively than elsewhere, especially when it comes to skills for emerging technologies like Deep learning and Blockchain. This indicates new technology adoption is higher in cities, which helps explain the productivity premium of urban areas.

The role of domestic and international markets in the loss of nature across Brazil

Dr. Damares Lopes Afonso¹, Dr Fernando Perobelli², Dr Weslem Faria², Dr Erasmus zu Ermgassen¹

¹UCLouvain, Louvain-la-Neuve, Belgium, ²UFJF, Juiz de Fora, Brazil

G04-O2 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 27, 2025,
4:30 PM - 6:30 PM

The Brazilian biomes not only provide essential environmental services on a global scale but also contribute to income generation in the country through activities related to agribusiness. Given their social and ecological importance, we analyze the vegetation loss caused by agricultural activities and embodied in Brazil's intra- and inter- national trade, considering all Brazilian biomes and all types of vegetation (forest and other types). The results highlight the impacts of trade on vegetation loss in Brazilian biomes beyond the Amazônia, where other biomes emerge as critical hotspots. Protein-rich food sectors show high concentrations of vegetation loss in intra- and inter- national trade. These results represent the first comprehensive analysis of vegetation loss caused by agriculture and embodied in all the country's biomes, offering policymakers valuable insights.

Older Adult Migration and Mobility: New Insights from the Canadian Longitudinal Survey on Aging

Prof Bruce Newbold¹

¹McMaster University, Hamilton, Canada

G09-O2 Migration, Mobility Patterns and Impacts Across Space, G5, August 28, 2025, 9:00 AM - 10:30 AM

As of the 2021 census, 19% of Canada's population was aged 65 and over (Statistics Canada, 2023), with this share projected to increase to approximately 23% by 2043 as Canada's population continues to age rapidly and fertility rates remain low (Statistics Canada, 2022). While many of older adults will expect or desire to age in place, many will move to 'downsize' their living space, move to be closer to family for support, or move into care facilities. Despite significant attention to migration flows within the labour force, there has been much less attention given to migration within Canada's older adult population. Further, while the demographic and economic impact associated with the movement of older adults is important on its own, the reason behind moves, including the role of changing health, environmental, and behavioral factors, needs additional exploration.

Drawing on the Canadian Longitudinal Survey on Aging (CLSA), this presentation will explore the patterns, motivations, and timing for moves among older adults. The CLSA is a large, national research platform on health and aging that follows 53,338 older adults (aged 45+) for around 20 years from 2010. Methods will include both descriptive and multivariate analysis of the covariates associated with migration. In addition to understanding how sociodemographic and socioeconomic factors impact the decision to migrate (or not), the CLSA includes several health, environmental, and behavioral constructs which will be evaluated for their impact on the decision to move.

Future Regional Economic Scenarios for Netherlands

Dr. Olga Ivanova¹, Dr. Corjan Brink, Mr Kristian Bakker, Prof. Theodoros Chatzivasileiadis

¹PBL Netherlands Environmental Assessment Agency, The Hague, The Netherlands

G04-O3 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 28, 2025,
9:00 AM - 10:30 AM

Dutch regional economic and transport WLO (Welvaart en Leefomgeving) scenarios are developed every seven years and provide policymakers with scenario-based insights to guide decisions on mobility and urbanization. Given the inherent uncertainty of the future, WLO study employs multiple scenarios to analyze the impact of various developments and assess the effectiveness of policy measures. The WLO study combines different scenario elements including regional demography, regional economy and transportation.

For the development of Regional Economic and Sectoral scenarios we employ a methodological approach that combines qualitative scenario narratives, econometric data analysis, and dynamic regional general equilibrium model (EU-EMS model). This approach aims to quantify sectoral and regional development trajectories within the four scenarios of the future along the dimensions of economic growth (High and Low) and the speed of international climate policy (Rapid and Delayed). Inputs for these analyses include demographic data at the provincial level, labor force participation, productivity, and GDP projections for the Netherlands. The international dimension is modeled using CEPII's MaGE model, which simulates labor productivity, GDP, and employment trends across EU and non-EU countries.

An essential aspect of the analysis is the integration of marginal abatement cost (MAC) curves derived from the IMAGE global Integrated Assessment Model and CO₂ price trajectories corresponding to emission reduction targets. These MAC curves outline the costs associated with emission reductions by sector and country group, ensuring consistency across the future scenarios.

Scenario analysis within the EU-EMS model proceeds in three phases. Initially, the "WLO High, Delayed" scenario is validated using national and international sectoral and consumption data. Subsequently, the "WLO Low, Delayed" scenario is developed, reflecting slower demographic and macroeconomic growth, lower investments in education and R&D, and increased domestic production reliance. Finally, ambitious climate policy is explored within "WLO High, Rapid" and "WLO Low, Rapid" scenarios, targeting a maximum global warming threshold of 1.8 degrees Celsius, with CO₂ price pathways adjusted accordingly.

Education, Gender, and Labor Informality in Urban Areas of Colombia

Dr. Luis Galvis¹

¹Banco De La Republica, Cartagena, Colombia

G23-O2 Labor Markets, Unemployment, Gig Economy, Digital 'Nomads', Amphitheater II - SAKIS
KARAGIORGAS, August 28, 2025, 4:30 PM - 6:30 PM

This paper examines urban labor informality in Colombia, highlighting its relationship with educational attainment, gender inequalities, and regional disparities. Using data from the Gran Encuesta Integrada de Hogares (GEIH) for the 23 main metropolitan areas between 2010 and 2023, the probabilities of informality are estimated through a probit model with an endogenous variable, which addresses the relationship between education and labor informality by using an instrumental variable approach.

The importance of this study lies in the need to understand the relationship between labor informality, education, gender inequalities, and regional disparities in Colombia. Informality is a phenomenon that impacts fiscal stability, limits social safety nets, and perpetuates poverty and income inequality, representing one of the main structural challenges for developing economies. Moreover, gender inequalities and regional disparities add complexity to the phenomenon, as they reflect persistent barriers to accessing formal employment. Understanding the causes and characteristics of informality is essential for designing public policies that promote labor inclusion and equity in a country where these issues have shown high persistence over time. Since education is closely related to other determinants of informal employment, this study models its behavior to assess its impact on informality rates, recognizing that an improvement in educational attainment could positively influence productivity and job formalization.

The results show that each additional year of education is associated with a reduction of more than two percentage points in the probability of being informal. Urban labor informality is more pronounced in less prosperous metropolitan areas, which are generally located on the periphery of the country. The incidence of this labor market indicator has shown progress in terms of reduction in much of the country; however, we still record levels above those of several Latin American economies. This phenomenon is more frequently observed among women, young people, older adults, and individuals with lower educational attainment, as well as in small businesses and less prosperous regions. These population groups and entities tend to be linked to sectors that, on average, exhibit lower levels of productivity.

Despite improvements in formalization observed in recent years, gender and regional disparities persist, underscoring structural inequality in access to formal employment. These findings underline the importance of implementing public policies that promote employment formalization, reduce gender inequalities, and address regional disparities, fostering labor inclusion in the most affected areas of the country.

Opportunistic Investment: The Political Economy Impacts of FEMA Hurricane Declarations.

Dr Amanda Ross, Dr. Amir Borges Ferreira Neto¹, Dr Rushaine Goulbourne, Dr Matthew Fannin

¹Florida Gulf Coast University, Fort Myers, United States

S75 Cities Under Pressure: Building Resilience and Adapting to Climate Challenges, G5, August 27,
2025, 11:00 AM - 1:00 PM

FEMA aid plays a crucial role in helping localities recover from natural disasters, yet its allocation is not always determined solely by objective measures of need. While some FEMA programs are formula-based and insulated from political influence, others allow for discretion in distribution, creating opportunities for political factors to shape outcomes. This paper examines the allocation of FEMA aid following hurricanes in Florida, analyzing the extent to which political considerations influence aid distribution. Specifically, we investigate whether swing districts receive more aid, whether districts represented by members of the president's party benefit disproportionately, and how these patterns vary across different FEMA programs. Importantly, we incorporate detailed data on hurricane wind speeds and storm paths to assess the actual damage experienced, allowing us to identify instances where aid allocation appears inconsistent with the severity of the disaster. By combining data on FEMA declarations, aid allocations, storm impact, and the political characteristics of the areas, this study provides new insights into the extent to which disaster relief funding is shaped by electoral incentives rather than objective need. Understanding these dynamics is essential for improving the fairness and effectiveness of disaster response policies.

Does State Administration Shape Demographic Growth? Evidence from the 1926 Removal of Sub-Prefectures in France

Ms Aurélie Lalanne¹

¹UNIVERSITE DE BORDEAUX, , France

G19-O4 Urban, Regional and Local Policy Evaluation, G3, August 29, 2025, 9:00 AM - 10:30 AM

At the end of the 18th century, the French Revolution initiated a profound restructuring of the administrative system to rationalize and unify the national territory. In 1800, 376 sub-prefectures were established alongside departmental prefectures to ensure decentralized administration and strengthen state control across the country. These sub-prefectures concentrated key administrative functions, such as courts of first instance, tax services, gendarmerie posts, and other public services, while also playing a vital economic role by stimulating local economies. As such, sub-prefectures were crucial in maintaining territorial balance.

Since their creation, only one major reform has significantly altered this administrative structure.

Following World War I, amid a budgetary crisis and modernization efforts, the French government reconsidered its territorial organization. In 1926, the Poincaré decree led to the removal of 106 sub-prefectures as part of a rationalization policy aimed at reducing public expenditures. However, the long-term impact of this decree remains largely unexplored. The loss of sub-prefecture status likely diminished the economic and administrative appeal of the affected municipalities. With the disappearance of public services and the economic flows they generated, these areas may have experienced demographic decline, characterized by migration to larger cities. This trend aligns with broader patterns of rural exodus and centralization, further exacerbating territorial inequalities.

Although intended to optimize administration, this reform may have had significant consequences for local demographic dynamics, highlighting the complex relationship between state administrative organization and territorial development.

This article seeks to quantify these effects using a difference-in-differences econometric approach to assess the long-term demographic impact of the reform on the affected municipalities. The study relies on an extensive database of French municipal census data spanning the period 1800–2015. This approach compares demographic trends in former sub-prefectures to two control groups:

municipalities that were never sub-prefectures and those that retained their sub-prefecture status. By controlling for pre-existing trends, this methodology isolates the causal effect of losing administrative status.

Regional Disparities in Environmental Attitudes: The Role of Social Capital Italy

Prof. Bianca Biagi¹, Prof. Marta Meleddu, Ester Rita Lucia Sanna

¹Università di Sassari - DISEA - Crenos e GSSI, SASSARI, Italy

G13-O1 Social Capital, Territorial Capital, Institutions and The Commons, F5, August 27, 2025, 11:00

AM - 1:00 PM

Regional Disparities in Environmental Attitudes: The Role of Social Capital in Italy

Environmental policies aim to mitigate negative impacts but often fail to address root causes. Social capital influences environmental behaviour by shaping norms (Kollmuss & Agyeman, 2002). Studies highlight regional disparities in Italy, showing that higher social capital fosters pro-environmental behaviour (Atshan et al., 2020). This study, based on an ad hoc survey, confirms that social capital's effect varies by region due to cultural and economic differences.

The intersection of productivity and governance capacity in spatial inequality: the case of England's devolution periphery

Dr Jack Newman¹, Dr Charlotte Hoole²

¹University of Bristol, , United Kingdom, ²University of Birmingham, , United Kingdom

G21-O1 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 27, 2025,
2:00 PM - 4:00 PM

Effective local and regional governance is important for tackling economic inequality between regions. However, a common problem is that the effectiveness of governance institutions also has an unequal spatial distribution. The relationship between regional distributions of productive and governance capacity is therefore crucial for a state's ability to revitalise lagging regions. In the UK, a new decentralisation agenda has been launched by the recently elected Labour government. The plans offer a more consistent framework for devolution in England, but they also further embed the policy of rewarding those places that already have the most advanced governance arrangements. In our analysis of 'productive capacity' and 'governance capacity' across England's strategic authorities, we identify a 'devolution periphery', located primarily in the east and west, which is lagging in both economically and administratively. The latest policy developments in the UK suggest that England's 'devolution periphery' is likely to fall further behind in the coming years. To interpret these findings, we assess spatial inequality and the history of spatial rebalancing in France, Germany, and Italy, identifying key risks and success factors. While the UK tends to perform particularly poorly against these success factors, there is a consistent tension across all these countries between spatial rebalancing and asymmetric decentralisation.

Chinese Rare Earth Elements dominance and European “green transition”: an analysis of supply dependence and political economy

Mr Charalampos Bakagiannis¹

¹University Of Macedonia - Department of Balkan, Slavic and Oriental Studies, Thessaloniki, Greece
G17 Geopolitics, Conflicts and Security: Spatial Impacts and Perspectives, G4, August 28, 2025, 9:00 AM - 10:30 AM

Since their emergence to the geopolitical and economic spotlight in the last decades, Rare Earth Elements (REEs) lately consist a critical fragment of the ongoing trade war between China and the United States (U.S.), with the European Union (E.U.) entering the trading turbulence as a latecomer. The European Union heavily relies on Chinese raw materials that are essential for the “green transition” – more specifically the European clean energy sector showcases 98% dependence on Chinese rare earths. The leadership of the 27-member bloc has crafted ambitious plans, like the European Green Deal, encompassing large scale investments and commitments. At the same time however, the Commission has been a strong advocate of "de-risking," essentially referring to diversification of raw material sourcing: in that regard, at the end of 2023 it released the Critical Raw Materials Act (CRMA), aiming to include a partial autonomy in mining, processing as well as import diversification.

Nonetheless, these commitments appear to be embodied in gradually pushing China out of global trade – especially with strict restrictions against the Asian superpower in other strategic areas, such as semiconductor technology and tariffs regarding electric vehicles the latter becomes evident. This sort of political misconduct has led Beijing grown tired of being unilateral and opened the doors to a trade war between the two parties, consequently escalating the already enlarged geopolitical turmoil. The present research aims to scrutinize Chinese REEs-related dominance and its implications for major global economic players, namely the European Union in the context of international trade and political economy. Taking into account the E.U.’s contradictory political decision-making, the study seeks to examine Chinese REE-supply's effects on European renewable energy. More specifically, the aim is to study the effect on European energy prices, particularly on electricity by drawing data from 2000 to 2022.

Furthermore, taking into account the theory of economic patriotism as described by Clift & Woll (2012), the research seeks to address the political economy behind China’s development plans in regard to the REE’s sector and their implications for European decarbonization. Undertaking notions like industrial policy and state intervention, China’s rare earth policies reflect a strategic blend of economic, environmental, and geopolitical considerations.

To this purpose, statistical data for several international and European databases will be employed, such as the UN COMTRADE (REE trade) and the Eurostat database, where data on electricity prices and the share of renewable energy are available.

The consequences of changes in the economic structure for environmental sustainability - the case of developed and developing countries

Dr. Mateusz Jankiewicz¹

¹Nicolaus Copernicus University, Torun, Poland

G06-O1 Space and Digital Transformation, A1, August 27, 2025, 11:00 AM - 1:00 PM

The paper presents an analysis of the impact of changes in the economic structure on the achievement of environmental sustainability in countries worldwide. The ongoing transformations of the modern economy, particularly digital transformation, lead to changes in the production structure of countries. More and more countries are focusing on the development of the service sector, which results in modifications to the economic structure and subsequently affects the achievement of sustainable development (SD). The analysis is conducted using data from 124 selected countries (52 developed and 72 developing) for the years 2015-2020. The environmental situation of each country is calculated using the composite indicator, using ecological indicators from the set of characteristics defined by the United Nations to achieve Sustainable Development Goals (SDGs). The composite indicator assesses the environmental sustainability with one value calculated with the values of specific diagnostic variables. In turn, the economic structure is characterised by the share of value added by agriculture, industry, and services in Gross Domestic Product (GDP). The relationship between changes in the economic structure and environmental sustainability is verified using the spatio-temporal sensitivity model, which is further enhanced with the factor of spatial dependence between neighbouring units. In the analysis, the proximity of countries is defined based on two criteria: the common border criterion and the ecological similarity criterion measured by ecological footprint (EF) values. The crucial part of the research is to examine the differences in the influence of modifications to the economic structure on environmental sustainability between developed and developing countries.

The possibilities for the widespread application of responsible innovation in less developed countries from the perspective of the younger generation

Dr. Nikoletta Nádas¹

¹University Of Szeged, Szeged, Hungary

G02-O5 Regional Growth Models, Competitiveness, and Convergence, B1, August 29, 2025, 9:00 AM - 10:30 AM

In recent decades, European innovation policy has undergone significant transformation, with a growing emphasis on making scientific research, development, and innovation more transparent and inclusive. This shift has reinforced the importance of responsible research and innovation (RRI), which seeks to anticipate and assess the potential impacts of innovation while aligning with societal expectations. Various methods have been introduced to incorporate responsible innovation into decision-making processes; however, many of these approaches have not led to its widespread adoption.

One key challenge is the limited understanding of how RRI can be effectively applied within the business sector. Additionally, responsible innovation has primarily been developed and implemented in developed economies, tailored to their specific innovation environment. This study aims to address two main issues: first, how to raise awareness among businesses about RRI and encourage its adoption, and second, how to implement responsible innovation effectively in less developed regions. Since the younger generation represents the future consumer base, this research focuses on their perspectives and preferences. The primary objective is to explore ways to expand the application of responsible innovation and to understand young consumers' attitudes toward products developed under RRI principles. To achieve these goals, a multi-method research approach has been employed, including a Likert scale-based survey, along with MaxDiff and choice-based conjoint analysis techniques, to provide comprehensive insights.

Cooperatives and SMEs in the Twin Transition: A Comparative Analysis

Ms Ginevra Coletti¹, Ms Asia Guerreschi¹, Ms Emy Zecca¹

¹University of Ferrara, Ferrara, Italy

S20 Circular Economy and Eco-Innovation in the Cooperative Movement, Amphitheater I - SAKIS
KARAGIORGAS, August 29, 2025, 9:00 AM - 10:30 AM

The twin transition (TT) has become a crucial challenge for businesses. While cooperatives are often assumed to be more committed to sustainability due to their democratic governance and long-term orientation, empirical evidence on their actual performance compared to small and medium enterprises (SMEs) remains limited. This paper aims to explore whether a cooperative business model provides an advantage in fostering both the green and the digital transition, compared to SMEs.

To address the research question, we use cross-sectional data collected from two independently conducted surveys, one focusing on cooperatives (350 observations) and one on SMEs (4000 observations). Although the surveys were conducted in different years, they provide comparable information on firms' environmental strategies, in particular circular economy strategies (CES), technology adoption, and organizational characteristics. The first methodological challenge is to assure that differences in survey timing do not bias our results. We address this by introducing a dummy for the survey year that can capture time effects and an interaction term between firm type and survey year, to test whether the gap between SMEs and cooperatives varies across the two distinct periods. The empirical strategy of this study relies on a regression framework to examine the determinants of the interconnections between the introduction of CES and technology adoption in these firms. We aim to pursue two analytical approaches: (i) Running separate regressions for cooperatives and SMEs to identify differences in the factors influencing adoption. (ii) Estimating a unified model with an interaction term to capture the influence of the cooperative business model on these decisions. (iii) Conducting a spatial analysis to explore potential geographical heterogeneity in firms' approaches to the TT, distinguishing between Northern, Central, and Southern Italy. This allows us to assess whether regional disparities affect the adoption of CES and digital technologies differently for cooperatives and SMEs.

Existing literature suggests that cooperative enterprises may not necessarily outperform SMEs in sustainability efforts, as their motivations and constraints often mirror those of private businesses. By analyzing whether cooperatives differ in their approach to the TT and what factors drive their choices, this study provides new insights into the role of that this kind of businesses can have in achieving sustainability goals. Our findings will contribute to the ongoing debate on sustainable business models and offer policy implications for supporting firms in their transition toward greener and more digitally integrated operations.

Foreign Direct Investments and Economic Integration: the case of EUSAIR (EU Strategy for the Adriatic and Ionian Region)

Prof. Donato Iacobucci, Mr Daniele Bregoli

¹Polytechnic University of Marche, Ancona, Italy

S19 Regional Integration AndEU Macro Regional Strategies, G4, August 29, 2025, 11:00 AM - 1:00 PM

The EU Strategy for the Adriatic-Ionian Region (EUSAIR) was set-up in 2014 as a policy framework aimed at fostering economic integration and regional cooperation between its member countries. In this context, Foreign Direct Investments (FDIs) play a pivotal role in enhancing economic integration and competitiveness thus promoting economic growth. FDIs contribute directly to the strategic goals of the EUSAIR region facilitating among other aspects capital flows, technology and innovation transfer, and job creation. Despite these expected benefits, the dynamics of FDIs across the region remain underexplored, particularly regarding their evolution since the establishment of the EUSAIR. More precisely, it appears overlooked whether the integration mechanisms promoted by EUSAIR have effectively contributed to increasing or stabilizing FDI flows across its member countries. To address this, we conducted a comprehensive analysis of inward and outward FDI positions across 10 EUSAIR countries from 2009 to 2024. The dataset covers a period long enough to capture both pre- and post-EUSAIR trends, with 2014 serving as a key milestone for assessing its potential impact. Our methodology includes tracking shifts in FDI flows to identify patterns of growth or stagnation, and analysing country-specific performance within the regional landscape.

Preliminary results suggest varying degrees of FDI development, with some countries exhibiting substantial growth in both inward and outward investments, while others have lagged, reflecting persistent structural barriers. Cross-country comparisons highlight factors such a country's business environment and how stable or supportive its institutions are. This research underscores the importance of addressing investment disparities within the region to ensure that the benefits of integration are broadly shared. This immediately connects to the need to enhance institutional support, and improving the ease of doing business together with strengthening cooperation mechanisms to create a more balanced and resilient investment panorama. By doing so, EUSAIR can better serve its mission of fostering long-term regional cohesion and prosperity through sustainable economic development and integration.

Bridging Local and Global Networks: Middleground Association Affiliation and Stakeholder Embeddedness in Regional Innovation Ecosystems

Dr. Yihan Wang¹, Dr. Sébastien Bourdin¹, Dr. Ekaterina Turkina²

¹EM Normandie Business School, , France, ²HEC Montréal, Montréal, Canada

G03-O7 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 29, 2025, 2:00 PM - 4:00 PM

The establishment of regional innovation ecosystems involving interdependent stakeholders (e.g., multinational enterprises, innovative startups, universities, R&D centers, incubators, accelerators, government bodies, financial institutions, and civil society organizations) contributes to a region's economic growth and industrial competitiveness. In this configuration, the innovation intermediaries, which are the public or private entities that facilitate and support inter-organizational collaboration among stakeholders, play a vital role in the governance of regional innovation ecosystems. By organizing social events and innovation projects in designated places and spaces, the innovation intermediaries create a “middleground” within the complex network structure of the regional innovation ecosystem where “upperground” formal organizations (e.g., enterprises, government bodies, universities, and R&D organizations) and “underground” creative individuals can connect. In turn, connected stakeholders can achieve network-based competitive advantages thanks to the middleground intermediation.

This study examines how affiliation with middleground associations impacts stakeholders' network embeddedness in regional innovation ecosystems and explores mechanisms for achieving network-based advantages, including (1) relational embeddedness, which arises from having direct and cohesive ties that enhance trust and information sharing (Granovetter, 1973; Gulati, 1998), and (2) structural embeddedness, which stems from a stakeholder having a strategic position in the broader network that enables them to broker knowledge flows and bridge structural holes (Burt, 1992; Gulati & Gargiulo, 1999). We analyze co-participation in social events and innovation projects to assess how stakeholders leverage their broker roles to gain competitive advantages and evaluate their proximity to the core of the network. Furthermore, we explore whether foreign affiliates have higher levels of network embeddedness than domestic affiliates and examine whether foreign stakeholders face “liability of outsidership” (Johanson & Vahlne, 2009).

To test these hypotheses, we analyzed the two-mode network of stakeholders and events in the BioQuébec pharmaceutical cluster in Canada. We determined the degree of relational and structural embeddedness of both middleground affiliates and non-affiliates and assessed the moderating effect of foreignness. Finally, we discuss the strategic implications for business managers and propose policy recommendations for regional innovation intermediaries and government bodies to enhance stakeholder integration and cluster performance.

A Long-Term Analysis of the Functional Employment Structure in English Regions

Prof. Bart Los¹, Dr. Xianjia Ye¹

¹University of Groningen, Groningen, The Netherlands

G02-O1 Regional Growth Models, Competitiveness, and Convergence, B1, August 27, 2025, 2:00 PM - 4:00 PM

The increased pervasiveness of global value chains has led to a change in the nature of international trade. Regions and countries do no longer just specialise in entire industries, but more so in tasks within these (Grossman and Rossi-Hansberg, 2008; Timmer et al., 2019). A region could host relatively many ‘headquarter functions’ (involving tasks related to R&D, marketing and management), while other regions could have a larger share of their workforces active in the fabrication function. Consequently, regions with comparable industry compositions might no longer be very similar in terms of the functions they perform.

This functional specialization has implications for evaluating the economic performance of regions. As is well-known from the literature on the ‘smile curve’ that characterises global value chains, fabrication activities generally capture a lower share of value added in comparison to headquarter functions (e.g., Mudambi, 2008). Hence, differences in the functional employment structure can be a determinant of the large interregional inequality in the United Kingdom (McCann, 2016; Carrascal-Incera et al., 2020), and changes therein over time. In this paper, a taxonomy of regions based on both their current functional specialisation patterns and on the changes in these over a thirty-year period will be provided. The taxonomy of regions based on changes over time is inspired by Dauth and Südekum (2016), but adds changes in the functional structure to their perspective, which exclusively focuses on industrial structure. To this end, Census data on the occupation and industry in which workers were employed are used. The analysis covers the period 1991-2021.

Questions answered are: “Which English regions specialized most in the fabrication function?”, “Which regions had industry-function patterns of employment change that were most dissimilar with such changes for England as a whole?”, and “Have employment and income growth in such regions been slower or faster than the English average?”

As stressed by Dauth and Südekum in their paper, differences in employment structure across regions have implications for policies aiming at regional development. As many regional scientists and economic geographers have argued already (see, e.g., McCann et al., 2021), place-based policies are needed, instead of one-size-fits-all plans.

A Golden Opportunity: The Gold Rush, Entrepreneurship, and Culture

Prof. Michael Stuetzer¹, Prof. Abel Brodeur, Prof. Martin Obschonka, Prof. David Audretsch, Prof. Jason Rentfrow, Jeff Potter, Prof. Sam Gosling

¹DHBW Mannheim, Mannheim, Germany

G03-R Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B4, August 27, 2025, 4:30 PM - 6:30 PM

Entrepreneurial culture is a critical focus of research and policy. While the extant literature often treats it as exogenous, we propose a theory of endogenous entrepreneurial culture to explain the evolution of regional entrepreneurship and its underlying culture. We apply this model to the U.S. gold rush in the 19th century as a natural experiment. Using causal methods, we find empirical evidence for persistent high entrepreneurship rates in the gold rush counties over time. Regarding the mechanisms underlying this persistence, we find empirical evidence for selective migration of entrepreneurially minded people to the gold rush counties over a period of 100 years. The entrepreneurial culture in the gold rush counties additionally induced migrants to the gold rush to become more entrepreneurial. Lastly, we also find some evidence that of pro-entrepreneurship institutions in the states influenced by the gold rush positively affected entrepreneurship.

Urban and Regional Economic Resilience: Evidence from Central and Eastern Europe

Dr. Alexandra Sandu¹, Dr Alexandru Bănică^{2,3}, Prof Ionel Muntele^{2,3}

¹Cardiff University, Cardiff , United Kingdom, ²Alexandru Ioan Cuza University from Iasi, Iasi, Romania, ³Romanian Academy, Iași Branch, Iasi, Romania

G01-O4 Urban, Regional, Territorial and Local Resilience, B5, August 27, 2025, 4:30 PM - 6:30 PM

This study presents a comparative analysis of how cities and regions in Central and Eastern Europe (CEE) responded to two distinct global crises: the 2007-08 financial crisis and the COVID-19 pandemic. Through a methodological approach that measures economic resilience using GDP trajectory slopes rather than absolute values, we analyse the performance of 54 major cities and their corresponding NUTS2 regions across ten post-socialist countries. Our findings reveal complex resilience patterns, particularly in Polish regions, which demonstrated remarkable recovery despite initial vulnerability. By examining urban primacy metrics alongside resilience indicators, we demonstrate that regions with balanced urban networks generally outperformed those dominated by single large cities in both crises. Notably, the research identifies disparities between financial crisis and pandemic shock responses, with some territories showing high adaptability to one type of disturbance but vulnerability to the other. These findings contribute to theoretical debates on urban and regional resilience while offering practical insights for policymakers seeking to enhance regional/urban resilience against diverse types of economic shocks. Finally, the research highlights that in CEE, urban/regional resilience depends not only on the strength of individual urban centres but on the broader configuration of urban networks and their resources for coordinated adaptation.

Poor Areas Urban Zoning and Access to Opportunities: The Case of Special Zones of Social Interest (ZEIS) in Recife, Brazil

Dr. Raul Silveira Neto¹, Mr Eric Santos

¹Federal University of Pernambuco, Recife, Brazil

G22-O5 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, G5, August 29, 2025, 11:00 AM - 1:00 PM

With approximately 85% of its population living in cities, Brazil is a highly urbanized country. This rapid urbanization has created significant challenges in providing infrastructure and adequate housing for its citizens. In this context, areas with better infrastructure and proximity to jobs are highly valued, which leads to significant residential segregation and pushes poorer populations to the outskirts. The ZEIS (Special Zones of Social Interest), initiated in the City of Recife in the 1980s, serves as the primary public policy response to the exclusion of the poorest communities from access to employment opportunities. This zoning defines a specific urban area for low-income housing, aiming to prevent the displacement of residents from locations that are closer to services and employment. Today ZEIS is present in more than 2,000 Brazilian municipalities, although the impacts of this instrument are still poorly evaluated. The current study aims to assess how ZEIS affects residents' employment opportunities and income in the City of Recife. Although well-intentioned, the ZEIS restricts housing supply and may lead to higher housing prices and increased urban sprawl, resulting in longer commuting times. To evaluate the impact of ZEIS on labor market outcomes, we use official data from CadÚnico, a database from the Ministry of Development and Social Assistance, Family and Fight Against Hunger, and an instrumental variable approach based on railways built in the 19th century in Recife for the transportation of sugar from sugarcane during the Brazilian Empire period (Recife was the main Brazilian center of sugarcane production during the colonial period). The railways were originally used exclusively for transporting sugarcane and cotton from the countryside to the harbor in Recife. As a result, they are not integral to the current labor market conditions. However, they were constructed in flat and sturdy areas of the city, which led to the development of many avenues and streets around them. Thus, our instrument is exogenous and relevant. The main results indicate that: i) having better access to employment positively influences the likelihood of an individual residing in a ZEIS, ii) the enhanced probability of being employed for those living in a ZEIS can be fully attributed to this improved accessibility to employment opportunities for its residents, and iii) the zoning of ZEIS has no impact on the labor income of its residents. Overall, our evidence favors the idea that the zoning of ZEIS improves employment prospects for those living in it.

Assessing the Impact of Infrastructure Recovery on Regional Economic Resilience: A Dynamic Spatial IO Model for Aichi Prefecture

Prof. Hiroyuki Shibusawa¹, Dr. Mingji Cui¹

¹Toyohashi Univ. Of Technology, Toyohashi, Japan

G08-O5 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, A1, August 29,
2025, 11:00 AM - 1:00 PM

In Japan, the economy of urban areas is shrinking due to population decline, and there are concerns about the decline in the resilience and sustainability of urban and regional economies in the event of a large-scale disaster risk. Recent experiences of natural disasters have shown that damage caused by risks to infrastructure, energy, and supply chains during disasters spreads to the entire socio-economy, prolonging recovery. By reducing such disaster risks and preparing for sound resilience, it is expected that a transition to a sustainable economic system will be made.

In recent resilience research, emphasis has been placed on approaches that strengthen resilience in advance in the event of a future risk occurrence (Hoopes 2017, Aroca et al. 2021, Nijkamp 2023). In Japan, it is still fresh in our memory that the risks of infrastructure, energy, and supply chains surfaced and economic damage expanded during the Great East Japan Earthquake and the Noto Peninsula Earthquake. In addition to the increasing frequency of floods and other disasters caused by climate change across the country, the possibility of huge disasters such as a major earthquake in the Nankai Trough and an earthquake directly beneath the capital is increasing, and it is time to tackle this research topic as soon as possible. In order to evaluate the effectiveness of measures and policies before and after a disaster, an analytical framework that takes into account the temporal and spatial dependencies of economic activity in urban areas is necessary.

This study attempts to develop a dynamic spatial IO model for municipalities in Aichi Prefecture. Previous studies have not fully evaluated the impact of damage to the infrastructure service sector. We use simulations to analyze the damage and recovery process caused by the breakdown of production activities and infrastructure services in areas affected by the tsunami. In this paper, we mainly focus on the impact of fluctuations in the recovery speed of infrastructure services (electricity, water, gas, transportation, etc.) on regional economic damage. We clarify the impact of delays in the recovery of infrastructure services in municipalities in Aichi Prefecture on the recovery of the entire regional economy.

Keywords: tsunami, dynamic IO model, infrastructure services, simulation, evaluation

Developing an Industrial Economic Recovery Simulator for Natural Disasters: Applications and Educational Considerations

Prof. Hiroyuki Shibusawa¹, Dr. Mingji Cui¹

¹Toyohashi Univ. Of Technology, Toyohashi, Japan

G08-O4 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, Amphitheater I -
SAKIS KARAGIORGAS, August 29, 2025, 9:00 AM - 10:30 AM

In recent years, natural disasters in Japan have become more frequent and larger in scale, with greater economic impacts and longer recovery periods. Assessing these impacts on regional industrial economies is challenging, especially when predicting future disaster risks. Simulation techniques are essential to assess such risks.

In this study, we develop an industrial economic recovery simulator for natural disasters based on dynamic modeling of interregional input-output tables (IOs). This simulator aims to evaluate the economic impacts of disasters and the recovery process. In addition, this study considers using the simulator to create teaching materials that help teach disaster preparedness and resilience. Input-output analysis is an important method for evaluating policies, and dynamic models are increasingly recognized as effective tools for evaluating the impacts of future policies. By applying this model to education, this study also aims to raise disaster prevention awareness.

In Japan, national and regional input-output tables are compiled by the government. This study estimates interregional input-output tables (IRIOs) and multiregional input-output tables (MRIOs) for Japan's prefectures. By incorporating IRIO and MRIO tables into a dynamic spatial input-output table, this simulator provides a framework that can be applied to the analysis of various disasters. This study develops teaching materials for estimating direct damage rates from hazard map information for natural disasters. The simulator can evaluate the impact of various types of disasters and recovery processes. The simulator measures spatial spillover effects at the regional level, helping to understand and evaluate how disaster impacts spread across regions. In addition, we also consider how to visualize the simulation results, making the data more accessible and intuitive for users. As Japan is highly vulnerable to natural disasters, evaluating disaster resilience, including economic damage and recovery processes, is an important policy issue. This study also considers the possibility of introducing the developed simulator into educational settings to enhance disaster preparedness. Through these efforts, this study investigates the effective use of the simulator and data, as well as challenges that may arise in future applications.

Critical spaces in terms of Just Transition and Economic Transformations: The case of Greece, Bulgaria and Romania

Prof. Kosyo Stoychev¹

¹Sofia University "st. Kliment Ohridski", Sofia, Bulgaria

G03-O2 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 27, 2025, 2:00 PM -
4:00 PM

This study explores critical spaces in the context of Just Transition and economic transformations in Greece, Bulgaria, and Romania. It examines the regional challenges, policy frameworks, and socio-economic impacts of transitioning from fossil fuel-dependent economies to sustainable energy models. By analyzing key sectors, labor market shifts, and investment dynamics, the research identifies opportunities and barriers to equitable development. The findings contribute to understanding how these countries navigate the transition, balancing economic resilience, social justice, and environmental sustainability.

The transition to a low-carbon economy presents significant challenges and opportunities for regions historically reliant on fossil fuels and energy-intensive industries. This study examines the critical spaces where Just Transition and economic transformations intersect in Greece, Bulgaria, and Romania—three countries facing distinct but interconnected challenges in their shift toward sustainable energy models.

The research explores the socio-economic and environmental dimensions of the transition, focusing on labor market shifts, policy frameworks, investment trends, and regional disparities. Special attention is given to coal-dependent regions, industrial restructuring, and the role of renewable energy sources (RES) in fostering new economic opportunities. The study also assesses the impact of European Union (EU) policies, funding mechanisms, and national strategies in shaping the trajectory of a just and inclusive transformation.

By analyzing case studies, stakeholder perspectives, and institutional responses, the study identifies key barriers and enablers of equitable economic restructuring. It highlights best practices and lessons learned that can guide policymakers, businesses, and local communities in managing the transition while ensuring social justice, economic resilience, and environmental sustainability. Ultimately, this research contributes to a broader understanding of how Greece, Bulgaria, and Romania navigate the complex path toward a greener and fairer economy.

Interdisciplinary approaches to 'Place': An integrative review of 'place' definitions in the context of proliferating place-based approaches to UK policy

Dr. Thomas Avery¹

¹University Of Swansea, Swansea, United Kingdom

G20-O2 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 28, 2025, 9:00 AM - 10:30 AM

Place-based approaches (Barca, 2009; McCann, 2019) continue to gain traction in UK policy and research at national, regional, and local levels. Although these approaches are designed to be locally bespoke and heterogenous implementation is anticipated, nevertheless fostering a shared conceptual understanding across contexts is important to ensuring effective policy implementation. Given a recent proliferation of place-based policies in the UK, this paper investigates definitions and uses of 'place' within the academic literature using an integrative review methodology to consider the contributions of academia to this policy context. If place-based approaches to policy are to be effective, then it is important to understand how research and higher education institutions are positioned as contributing to regional development and policy.

An integrative literature review was conducted in April 2024. A systematic search strategy was developed and employed to search Web of Science and Science Direct for academic papers from 'Social Sciences, Humanities, and the Arts for People and the Economy' (SHAPE) disciplines that used the term 'place' from 2000-2024. Of 3991 initial results, 188 were included in the final sample. A content analysis was then performed to generate descriptive quantitative findings and qualitative synthesis of results.

The analysis reveals the richness and complexity of place-based discourses across disciplines, from economic approaches to regional development through to emerging frameworks in environmental education, health, and more-than-human geographies. While some disciplinary conversations around place remain distinct, we identify several promising areas where theoretical frameworks complement each other, particularly in understanding multi-scalar relationships between policy and practice. By mapping these diverse conceptualizations of place, the paper contributes to debates about how higher education institutions can better support integrated approaches to regional development that draw on this full spectrum of disciplinary insights.

Challenge-driven approach for developing resilience: learnings from cross-learning experiences

Dr. Giovanni Marin¹, Dr. Chiara Lodi², Dr. Aung Tun Oo³

¹University of Urbino, Urbino, Italy, ²University of Urbino, Urbino, Italy, ³University of Urbino, Urbino, Italy

S42-S1 Strengthening Societal Resilience Through Policy Experimentation, Foresight and Participatory Approaches, D1, August 27, 2025, 2:00 PM - 4:00 PM

In an increasingly complex and uncertain world, developing resilience is crucial for individuals, organizations, and communities. Cross-learning activity fosters a supportive environment that encourages experimentation and risk-taking, which are fundamentally connected with the drivers and components of resilience. A challenge-driven approach is a problem-solving strategy that encourages different stakeholders to identify challenges, develop solutions, and understand how to effectively implement them. Given this scenario, the paper explores the challenge-driven approach to fostering resilience, emphasizing the importance of cross-learning and mutual-learning activities under the FUTURESILIENCE project. Cross-learning involves the exchange of knowledge, practices, and insights across different organizations, disciplines, or communities, while mutual learning emphasizes the co-creation of knowledge through equitable participation of diverse stakeholders in developing resilience or other devoted activities. The challenges addressed through this cross-learning and collaborative framework often reflect systemic issues, prompting a holistic understanding of problems and fostering more sustainable solutions. Under the FUTURESILIENCE project, three mutual-learning workshops have been conducted with the involvement of project partners, labs members as well as the project's advisory and ethical boards. Through an analysis of various follow-up evaluation and contextual analysis of these workshops, we have identified key themes that underline successful resilience-building initiatives. These include the significance of “diverse perspectives”, the role of “active participation” in learning processes, and the benefits of “knowledge exchange” among stakeholders. By prioritizing collaborative efforts and mutual engagement, organizations and communities can be better prepared for and navigated the uncertainties of the future. The findings of this study emphasize the importance of “creating spaces” for shared learning and the collective knowledge that emerges from such interactions, ultimately enhancing resilience at various levels.

Scenario's for the future: broad prosperity as a framework for decision making

Prof. Aleid Brouwer¹

¹University of Groningen, Groningen, The Netherlands

S86-S2 Rethinking Economic Growth in Regional Science: on New Narratives and Indicators, G4,
August 27, 2025, 4:30 PM - 6:30 PM

In this paper the different ways to measure new dimensions of wellbeing are discussed. In the Netherlands we use 'the 'broader prosperity measures', which can be used as an index, but many institutions also use the set of indicators as individual variables. We will explore the possibilities and will have special attention to the contextual aspect of understanding broader prosperity measures. What does it mean to compare index outcomes over regions when discussing new dimensions of wellbeing? Is there such a thing as an objective level of broader prosperity that should be the aim for the individual regions?

Does Smartness Divide or Unite? Digital Technologies and Cohesion in the European Union

Dr. George Tsomidis¹, Alexandros Bechlioulis⁴, Dr. Tryfonas Christou⁵, Claire Economidou², Nikolas Topaloglou³

¹University Of Pireaus, Pireaus, Greece, ²University Of Pireaus, Pireaus, Greece, ³Athens University of Ecomics and Business, Athens, Greece, ⁴University of Ioannina, Ioannina, Greece, ⁵EC - JRC, Seville, Spain

S80 Challenges and Opportunities for EU Growth and Convergence: Climate Change, Digitalization, and Knowledge Diffusion, F5, August 29, 2025, 11:00 AM - 1:00 PM

Digital technology is more than a tool we use. It is a transformative force already reshaping governments, economies, societies and the world as we know it. Europe is undergoing a transition of digitalization that is drastically changing the way its economy works. This poses critical challenges to the EU's long-standing goal of promoting upward convergence and the treaty-enshrined objective of economic, social and territorial cohesion. To face up squarely to the challenges of the digital transition, EU has set of far-reaching policies and large-scale funding in place. For practical purposes, the Commission has broken down this vision into four areas ? skills, government, infrastructure and business, and has underpinned each of these fields with measurable objectives to be achieved before the decade is out. To master the digital transition for the economy, the Digital Economy and Society Index (DESI) of the European Commission sets out three levers that must be set correctly.

The Gradual and Heterogeneous Effects of European Trade Integration

Prof. Petros Milionis¹

¹University Of Groningen, Groningen, The Netherlands

G04-O2 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 27, 2025,
4:30 PM - 6:30 PM

We use a theory-consistent empirical gravity framework to compare the effect of Eurozone membership on trade flows relative to that of participating in the European common market as well as other EU and non-EU bilateral and multilateral trade arrangements or institutions. We conduct this analysis based on different bilateral trade data sets which capture both gross and value-added trade at different levels of aggregation. The data allow us to compare these effects across pairs of countries, economic sectors and sub-national regions at the NUTS-2 level. Overall we find that participation in the European common market has a large positive effect on bilateral trade flows while participation in the European monetary union leads typically to weak and statistically insignificant effects. At the same time we document substantial heterogeneity in these effects across sectors and regions. Across sectors we find the effects of the common market and the common currency to be larger for trade in manufacturing goods. Across regions we find both effects to be larger for regions that are geographically close and regions that share a common language. Exploiting further the timeline of EU integration, we demonstrate that the two effects increase in magnitude the longer a given pair has been part of both the common market and the common currency. The findings suggest that European trade integration is gradual and it builds on pre-existing ties.

Enhancement of Culture Heritage and the impact on sustainable growth: An Empirical Investigation

Prof. Rita De Siano¹, Prof. Rosaria Rita Canale¹

¹Università Degli Studi Di Napoli Parthenope, Napoli, Italy

S37 Towards Local Development Through a Sustainable Valorization of Cultural Heritage, B4, August 29, 2025, 2:00 PM - 4:00 PM

The United Nations World Tourism Organization (UNWTO, 2017) has recognized tourism as an extraordinary opportunity for the host country and its local communities. The overall contribution of tourism strongly depending on the ability of policymakers, institutions and stakeholders to create a sustainable model to manage the growth of the sector and its impact on the hosting communities. In this regard, culture and tourism, when working together, could be crucial for economic growth and sustainable development. ‘No sustainable development without culture’, UNESCO and like-minded organizations have argued. Culture favors tourism by supporting heritage, production, creativity and the protection of both tangible and intangible heritage of a destination. Moreover, cultural heritage, by reflecting national identity and traditions helps also to strengthen sustainability in local economies, as considered a key element in the humanization of cities and human settlements, playing an important role in rehabilitating and revitalizing urban areas, and in strengthening social participation and the exercise of citizenship.

In this regard, World Heritage Sites appear to have significant influence on promoting the protection of the various expressions of culture around the world as well as tourism growth, with each additional UNESCO site leading to rise in tourist flows.

The preservation and enhancement of culture implemented through the inclusion of tourist resources in the list of World Heritage Sites, however, could have also controversial effects on the well-being of the resident community. The increase in arrivals stimulated by the presence of outstanding cultural heritage sites or elements, in fact, could even lead to a worsening of the level of congestion in the area of interest.

The objective of our research, broadly speaking, would be to assess, in the relationship between the endowment of cultural resources and the economic performance of a destination, the impact that enhancement of cultural tourism could have in terms of sustainability and increasing pressure on the territory and to analyze the role UNESCO sites may exert on destination development process.

Labour market integration of Ukrainian refugees in Italy: Some preliminary insights

Prof. Alessandra Faggian¹, Prof. Alessandra Michelangeli², Dr. Kateryna Tkach¹

¹Gran Sasso Science Institute, L'Aquila, Italy, ²University of Milano-Bicocca, Milan, Italy

S03-S1 Drivers and Impacts of Migration: New Insights on the Role of Labour Markets, Demographic Change, Human Capital and Networks, G6, August 28, 2025, 9:00 AM - 10:30 AM

The full-scale invasion of Ukraine has induced an influx of refugees from Ukraine to the European countries, becoming the largest humanitarian crisis in Europe since World War II. Despite a growing interest in the topic, little is known about Ukrainian refugees' skills and their labour market integration in the hosting countries. This paper aims to offer preliminary evidence by analysing the employment patterns and skill profiles of Ukrainians in Italy. We use the responses collected in two phases, September 2023 – March 2024 and October – November 2024, via an online survey. We find that educational attainment and language skills are essential for refugees' employment status in Italy. We also document the role of language skills and regional employment rate for refugees; beliefs about job-qualification match. Our preliminary evidence sheds light on Ukrainians' skill profiles, which are pivotal for closing the employment gap and increasing labour market inclusiveness.

Adapting to Change: The Effects of Climate Change on Athens' Tourism Sector

Dr. Arsenios Georgios Prelontzos¹, Dr. Tryfonas Christou², Professor Panayotis Michaelides³

¹Foundation Of Economic and Industrial Research, Greece, Athens, Greece, ²European Commission, Joint Research Centre (JRC) Seville, Spain, Seville, Spain, ³National Technical University of Athens, Greece, Athens, Greece

S80 Challenges and Opportunities for EU Growth and Convergence: Climate Change, Digitalization, and Knowledge Diffusion, F5, August 29, 2025, 11:00 AM - 1:00 PM

Climate change presents major challenges to urban infrastructure, particularly in cities heavily reliant on tourism, such as Athens, Greece. As a key cultural and historical destination, Athens is becoming increasingly vulnerable to rising temperatures and extreme weather events, including intensified precipitation, which may heighten associated risks. As a result, the city's tourism industry is expected to be influenced by shifting weather patterns. This study analyzes monthly data from 1995 to 2023, incorporating cumulative precipitation, average temperatures, tourism expenditures, tourist arrivals, and key macroeconomic indicators—including inflation and overall economic conditions—to assess the complex effects of climate change on Athens' tourism sector. The econometric analysis considers seasonal variations in weather-related impacts on tourism expenditures. Our findings indicate that while precipitation has a relatively minor but statistically significant effect, average temperature exerts a seasonally strong influence on tourism expenditures. These results remain consistent across multiple estimation techniques and models, with a resampling-based simulation reinforcing their reliability. The study underscores the necessity for adaptive and targeted policies to enhance climate resilience in Athens' tourism sector. Measures should prioritize the development of sustainable tourism practices, improvements in urban infrastructure, and the implementation of strategies to mitigate the adverse impacts of extreme weather conditions, ensuring long-term stability and sustainability for the city's tourism industry.

The Analysis of Intensity and Cap Regulations Under the Emission Trading Market

Prof. Yan-shu Lin¹

¹National Dong Hwa University, Shoufeng, Taiwan

G11-O2 Public Policy Assessment: Inclusiveness and Poverty Alleviation Across Space; Equality in Opportunities and Territorial Justice, A2, August 29, 2025, 2:00 PM - 4:00 PM

Climate change has been a major issue in the past decade. In 2015, world leaders adopted the Paris Agreement to limit global warming to 1.5°C above pre-industrial levels. To achieve this, global emissions must be reduced by 43% by 2030 and reach net-zero by 2050. This agreement improved upon the Kyoto Protocol by involving developing nations.

The primary cause of rising global temperatures is anthropogenic CO₂ emissions, mainly from burning fossil fuels, agriculture, and waste. While the earth naturally recycles carbon, human emissions surpass this capacity. Fossil fuels account for approximately 86% of global energy, releasing carbon that traps heat in the atmosphere. Key sectors such as transportation, manufacturing, and electricity rely on these energy sources, making the transition to cleaner energy essential.

Government policies are key to this transition. One widely recognized mechanism is carbon trading, or emissions trading schemes (ETS). According to the World Bank, carbon pricing currently covers 23% of global emissions, with trading making up 75% of that share. Unlike standard regulations that impose direct limits, carbon trading allows companies to buy or sell emissions allowances.

The EU launched its ETS in 2005, covering 10,000 installations in the energy and manufacturing sectors, as well as aviation within the EU. China introduced its nationwide carbon trading scheme in 2021, covering 40% of its annual emissions—about 4 billion tons of CO₂. These systems differ in methodology: the EU employs an absolute cap, while China uses an intensity-based standard.

Our study examines the implications of absolute caps versus intensity standards, incorporating firms' abatement capabilities. Our model finds that intensity standards lead to higher emissions prices and encourage production expansion. Although absolute caps generate higher producer surplus, intensity standards increase consumer surplus, which may offset lower producer gains. When abatement efficiency is low, responsible firms may benefit more from intensity-based systems.

Regional aspects of complex impacts of the COVID-19 pandemic in Europe

Mr András Igari¹, Dr. Pál Szabó²

¹HÉTFA Research Institute, Budapest, Hungary, ²ELTE Eötvös Loránd University, Institute of Geography and Earth Sciences, Department of Regional Science, Budapest, Hungary

G01-O8 Urban, Regional, Territorial and Local Resilience, B5, August 29, 2025, 9:00 AM - 10:30 AM

The Coronavirus pandemic and the response (including both containment and proactive measures to mitigate the negative effects of the crisis) have had a wide range of social, economic and environmental impacts around the world, but the extent and modalities of these have varied. The crisis has both had short-term impacts and caused structural changes and has also affected many aspects of territorial structures: the economy, the society and the environment of the regions. The aim of this presentation is to highlight the regional inequalities of the various (social, economic and environmental) impacts of the COVID-19 pandemic.

To do this, we have collected and analysed regional-level economic (GDP, employment), social (trust in national government, severe material and social deprivation, mortality) and environmental (GHG emission) data. First, we have estimated the impact of the COVID-19 pandemic based on the trends of the previous period (2015-2019) and the data from pandemic period (2020-2021, partly 2022), paying particular attention to the short-term decrease (or increase) of the values, the speed of the bouncing-back effect, pre- and post-crisis trends, and the long-term crisis effects that may have been driven by structural changes. Second, we have examined the patterns of these indicators, using hierarchical cluster analysis to group regions to highlight which regions were affected similarly by the pandemic. As a result, we have got that the different crisis effects showed various spatial patterns. The crisis hit mainly the economy of tourist regions (Southern Europe, Alpine region) and Central Europe, while only moderate employment effects were observed, probably due to significant government interventions. As regards the mortality, although the centres (metropolitan regions, Western and Southern Europe) were the most affected during the first wave, from the second wave, the main negative effects of the pandemic were shifted to the rural regions and East-Central. Trust in government has also declined most in East-Central Europe, while poverty and GHG emission changes have shown a very diverse spatial pattern. Overall, the complex crisis effects of the COVID-19 pandemic hit East-Central Europe the hardest, but Southern Europe and the West-Central Europe also faced significant social and economic problems.

Metaverse-Enabled Creative Tourism: Strengthening Sustainability, Regional Resilience, and Inclusive Development

Ms Nansy Kouroupi^{1,2}, Prof. Theodore Metaxas¹, Dr. Dimitrios Diamantis³

¹University Of Thessaly, Volos, Greece, ²Les Roches Global Hospitality Education, Crans Montana, Switzerland, ³CU Ulster University, Lusail, Qatar

G15-O2 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness, Quality of Life, E1, August 28, 2025, 9:00 AM - 10:30 AM

This paper explores how metaverse-based experiences can strengthen creative tourism's role in promoting sustainability, enhancing regional resilience, and fostering inclusive local development. Creative tourism focuses on participatory, culturally rich activities that encourage deeper engagement between visitors and host communities. Meanwhile, metaverse technologies (including virtual and augmented reality) offer immersive interactions and multi-user connectivity. When merged, these approaches have the potential to diversify tourism products, support small-scale entrepreneurship, and protect cultural assets, thus enabling destinations to adapt more readily to global disruptions. Building on this premise, the study addresses the overarching question: In what ways can immersive digital experiences, grounded in local culture and collaborative stakeholder engagement, reinforce the sustainability and resilience of creative tourism while offering inclusive economic opportunities in an era of rapid technological change?

The paper reviews key theoretical and empirical works that showcase how cultural traditions, artisanal practices, and community values can be safeguarded and amplified through metaverse tools. It examines case studies from multiple regions, assesses governance models, notes the balance between authenticity and commercialization, and uncovers the evolving ethical considerations. The review draws on major academic databases (e.g., Scopus, Web of Science), policy documents from international bodies like the OECD, and pivotal studies on creative tourism.

The research design follows a structured literature review methodology, systematically identifying, screening, and synthesizing relevant studies. Following standard quality assessment protocols, articles were chosen if they offered insights into the intersection of creative tourism, immersive technology, stakeholder participation, and sustainability outcomes. The final corpus covers various cultural contexts and technological approaches, allowing for a thematic analysis that highlights recurring patterns such as immersive storytelling, community co-creation, cultural preservation, and adaptive revenue strategies.

The outcomes suggest that metaverse-based creative tourism can open new revenue streams for local communities, enrich visitor experiences, and fortify cultural identity. However, the incorporation of immersive platforms also raises concerns about data privacy, cultural misrepresentation, and unequal technological access. To address these challenges require inclusive governance, robust ethical frameworks, and the active participation of all stakeholders and community members.

As an overall, the paper's findings underscore the importance of aligning digital innovation with local cultural values to achieve sustainable and resilient tourism models. Recommendations for future research include more extensive longitudinal studies, comparative multi-site evaluations, and policy guidelines that ensure equitable benefits and responsible resource use in metaverse-driven creative tourism initiatives.

The effect of external demand shocks on local industrial evolution: a study about the US-China trade friction

Mr Peifeng Zhang¹

¹Peking University, Houten, The Netherlands

G01-O7 Urban, Regional, Territorial and Local Resilience, B5, August 28, 2025, 4:30 PM - 6:30 PM

In recent years, evolutionary economic geography has made great progress. However, some scholars have pointed out that evolutionary economic geography has neglected the impact of demand-side elements and external factors on regional economic evolution. To respond to this situation, this paper explores the impact of external demand shocks on the local industrial evolution based on Chinese city-level data and the difference-in-difference model, using the US-China trade friction in 2018 as a research case. It is found that the external demand shock lead local industries into a path-dependent and technical-complexity-reducing evolutionary path. The decline in innovative capacity due to the narrowing of exports as a global channel plays a mediating role between the external demand shock and regional industrial evolution. In addition, there is regional heterogeneity in the impact of the external demand shock on regional industrial evolution. Regions with high levels of related diversification are more vulnerable to shocks.

Cultural Festivals as Drivers of Local Development: The Socio-Economic Influence of the Athens Epidaurus Festival

Dr. Ioannis Kaplanis¹, Mr Ioannis Radin²

¹Athens Epidaurus Festival; Athens University of Economics and Business, Athens, Greece,

²University Of Thessaly; Athens Epidaurus Festival, Athens, Greece

S63 Regional Development and Cultural & Creative Industries, E12, August 28, 2025, 9:00 AM - 10:30 AM

Cultural festivals and events have emerged as powerful catalysts for local development and tourism, transcending their artistic and cultural significance to become strategic tools for economic growth, employment generation, and infrastructure expansion. This is particularly evident in rural areas, where such events can serve as transformative forces for local economies. The Athens Epidaurus Festival exemplifies this phenomenon, demonstrating how a major cultural event can reshape the economic landscape of an entire region. By attracting visitors from diverse backgrounds, the festival has not only boosted tourism but also stimulated a wide range of business activities in the Epidaurus municipality and the broader Argolida region.

The impact of the Athens Epidaurus Festival extends far beyond the immediate economic benefits of increased tourism. It has played a pivotal role in transforming a traditionally agricultural economy into a vibrant cultural tourism hub. This transformation has led to the development of new infrastructure, the creation of job opportunities in various sectors, and the diversification of the local economy. The Festival's influence on regional development underscores the potential of cultural events as drivers of sustainable economic growth in rural areas. By analyzing data from the festival's audience survey conducted in the summer of 2023 and 2024, this study provides valuable insights into the socio-economic dynamics of festival-driven development strategies, offering lessons that could be applied to other rural regions seeking to leverage cultural assets for economic revitalization.

Historical air quality and spatial inequality in German cities

Ms Anna Magdalena Hanitzsch¹, Mrs Melanie Krause²

¹Leipzig University, Leipzig, Germany, ²Leipzig University, Leipzig, Germany

G10-O4 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,

August 29, 2025, 11:00 AM - 1:00 PM

This study examines the long-term impacts of industrialization-era air pollution on contemporary socio-economic outcomes in German cities. Using detailed historical city maps from 1880 to 1915, we construct a novel dataset documenting the spatial distribution of industrial facilities and residential expansion during the industrialization period. This dataset is integrated with atmospheric modeling and contemporary socio-economic data to analyze how the location of industrial facilities and prevailing wind patterns in the late 19th century affected urban development and, via persistent structures, still influences present-day income inequality.

Beyond air pollution, the study also considers transformative factors in German urban history, including the destruction and rebuilding after World War II, divergent post-war policies such as socialist urban planning in the GDR, and recent gentrification trends. Using spatial regression analysis at a 1km² scale, we provide insights into the persistence of neighborhood segregation. While some German cities can be characterized by the within-city East-West divide analyzed by Heblich et al. (2021) for British urban areas, many other cities show different patterns of spatial inequality shaped by their idiosyncratic development paths.

By adopting an interdisciplinary approach, this study contributes to the literature on long-term environmental inequality and addresses the scarcity of empirical research on the roots of within-city income differences in German cities. The findings underscore the value of integrating high-resolution historical geospatial data into urban economic research and reveal how historical structures continue to shape income segregation in the urban context.

The effects of natural disasters on the Italian labour market

Miss Andrea Laura Bonfiglio¹, Prof. Nicola Pontarollo¹

¹University of Brescia, Brescia, Italy

S91 Microdata in Regional Science, F12, August 29, 2025, 9:00 AM - 10:30 AM

In our study using cross-sectional quarterly dataset from the Labour Force Survey covering a period from 2014 to the first quarter of 2020 we evaluate the effects of earthquakes happened between August and October 2016 on labour market of nine provinces in Central Italy. Our quarterly microdata allows evaluating very precisely the short and long terms effects of natural disasters. Given the high number of observations it is the possibility to disaggregate microdata at very fine level makes possible to estimate the reaction of labour market by profession, age and type of contract for hourly wage. We find that Italian labour market is resilient to natural disasters and that for some categories of workers, especially those with open-ended contracts, wages increase.

Sustainability Certifications and Firm Scale: Economic Drivers of Adoption

Mr Marco Ciro Liscio¹, Mr Gagan Narang¹, Prof Francesco Perugini¹, Dr Paolo Sospiro¹

¹Università Politecnica Delle Marche, Ancona, Italy

S74 Entrepreneurship, Innovation and Sustainable Development, Amph 3, August 29, 2025, 11:00 AM - 1:00 PM

Sustainability certifications are widely recognized as key indicators of corporate responsibility, signaling a company's commitment to environmental, social, and governance (ESG) principles. However, the extent to which firms adopt these certifications varies significantly based on multiple factors, including firm size, industry sector, and economic considerations. While previous research has examined these dynamics at a regional level – specifically within Italy's Marche region – this study aims to expand the scope of analysis to a national level, providing a more comprehensive understanding of certification adoption trends across various industries in Italy.

The primary objective of this research is to explore the extent to which firm dimensions influences the adoption of sustainability certifications and how different economic drivers contribute to this process. To achieve this, the study will employ a two-step methodological approach. First, an automated web-scraping technique will be utilized to systematically collect data from company websites. This step will focus on assessing how firms present their certifications to external stakeholders, including consumers, investors, and regulatory bodies. By analyzing the visibility and communication strategies associated with these certifications, the study will provide an objective measure of their prominence and perceived importance within corporate narratives. The scraper will be validated using data from Accredia.

The second phase of the research will involve a quantitative analysis correlating the presence of sustainability certifications with key business and economic factors. These factors include firm size, annual revenue, industry sector, and other financial indicators that may influence a company's ability and willingness to pursue certification. A particular emphasis will be placed on environmental sustainability certifications, given their growing significance in global business practices and regulatory frameworks. The study aims to determine whether larger firms are more likely to obtain sustainability certifications due to their greater financial resources, operational capacity, and heightened pressure from stakeholders, such as investors, consumers, and policymakers. Conversely, smaller firms may face significant barriers to certification adoption.

By examining certification adoption trends across different industries and firm sizes, this study will generate valuable empirical insights into the challenges and motivations influencing corporate sustainability practices in Italy. The findings will not only contribute to the academic discourse on sustainability and corporate responsibility but also offer practical implications for policymakers, industry leaders, and business associations. Understanding the factors that drive or hinder certification adoption can help inform targeted policy measures, financial incentives, and support programs designed to facilitate broader adoption of sustainability certifications.

Shaping urban and rural contexts for healthier lives: environment as a key driver for promoting health – SURVIVE

Prof. Luca Gandullia², Prof. Marcello Montefiori², Prof. Lucia Leporatti², Prof. Rosella Levaggi¹, **Prof. Nicola Pontarollo**¹

¹University of Brescia, Brescia, Italy, ²University of Genoa, Genoa, Italy

S72 From Responding to Adapting and Transforming EU Cities, D12, August 27, 2025, 11:00 AM - 1:00 PM

Promoting healthy living environments necessarily passes through awareness that the determinants of health lie mainly outside the control of the public health sectors. Healthy living is the result of several factors that may produce health inequalities across socio-economic groups. As shown by WHO and other organizations, inequalities should be reduced for equity reasons and for sustainable development. Inclusion, income distribution, and access to services are critical for post-pandemic recovery and fundamental goals of the NextGenerationEU (NGEU) Plan. The study will allow describing the health status and its determinants in different environmental contexts and for different demographic and socio-economic profiles of individuals. We will exploit an original and comprehensive database collected at the suburban level for the city of Genoa in Italy derived from administrative archives and ad hoc surveys. The study on health, well-being, and urban environments will complete the "hard" data with subjective ones. Specifically, the research is structured on the following four pillars:

- analyze the environment-health-healthcare services trade-off and its evolution across demographic and socio-economic groups;
- detect the role that the family and the non-profit sector play in reducing some of the barriers to accessing healthcare;
- identify the long-term strategies that local governments and individuals may put forth to improve health;
- provide graphic representations and interactive tools that summarise the relationship environment-health-healthcare.

Our results will help local policymakers identify strengths and opportunities and benchmark neighborhoods within a city against other neighborhoods within the same town, with upper territorial levels, and with other cities or neighborhoods within other cities.

Higher Education Internationalization: Strategies and Attractiveness in the Adriatic-Ionian Region

Mr Martina Giurato², Mr Marco Ciro Liscio¹, Dr Paolo Sospiro^{1,2}, Prof Jenny Pange³

¹Università Politecnica Delle Marche, Ancona, Italy, ²EUAbout, Bruxelles, Belgium, ³University of Ioannina, Ioannina, Greece

S19 Regional Integration AndEU Macro Regional Strategies, G4, August 29, 2025, 11:00 AM - 1:00 PM

Over the last 20 years, universities have become significant regional actors, taking on an important role in helping to develop the regions in which they are located. The attractiveness of universities to international students extends beyond academic prestige; it represents a catalyst for economic and social growth in host regions. International students bring valuable human capital, enriching cultural diversity and fostering innovation.

Attracting global talents at both national and regional levels has become a vital component in driving innovation and economic growth across the European Union. This highlights the importance of adopting a comprehensive and strategic framework for talent management policies to effectively address these multifaceted challenges. Even if the number of foreign students has increased over the years, there is a lack of disaggregated data at the university level regarding students from third countries.

Aligned with the EU Strategy for the Adriatic and Ionian Region (EUSAIR), this research investigates the attractiveness of universities within the UNI ADRION consortium. The study focuses on the number of non-national students, internationalisation strategies, agreements, and challenges faced by universities in the 10 EUSAIR countries. To achieve this, a mixed-methods approach has been adopted. Structured questionnaires have been distributed to all universities in the UNI ADRION consortium to collect both qualitative and quantitative data. We have performed a web scraping of the selected universities' websites, looking for potential correlations between the frequency and usage of specific words or combination of words and the university's level of attractiveness and internationalization. Finally, the collected data have been subjected to various quantitative analyses to derive meaningful patterns and conclusions. The research results highlight insights into regional differences, best practices, and actionable recommendations for improving the attractiveness of universities in the Adriatic-Ionian Region.

The acceptance of offshore wind farms by professional fishermen, in France: trajectories, determinants, place based strategies

Prof. Jean-Eudes Beuret¹, Ms Adeline Bas², Ms Annaig Oiry³

¹Institut Agro Rennes Angers, Rennes, France, ²Ifremer, UMR AMURE, Brest, France, ³Université Gustave Eiffel, Laboratoire analyse comparée des pouvoirs, Champs sur Marne, France

G21-O3 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 28, 2025,
4:30 PM - 6:30 PM

In France, the development of offshore wind farms is encountering difficulties of social acceptance, with varied, conflicting and/or cooperative interactions with professional fishing. What are the determinants of the trajectories and levels of acceptance of offshore wind farms by professional fishermen? What are the consequences of these levels and of collaborative and/or conflictual trajectories? To answer these questions, a comparative analysis was carried out on six wind farm projects as case studies on the Atlantic and Channel-North Sea coasts: Courseulles sur Mer, Dieppe Le Tréport, Fécamp, Groix Belle-Île, Saint-Brieuc, Saint-Nazaire. As a result, we identified and prioritized key variables in the acceptance of the project by professional fishermen: the identity of the area (especially the place of fishing in this local identity), the local dynamics of resources and fishing effort, path dependency with regard to previous projects and/or consultations, proximity between representatives and those represented, the quality of dialogue and the direct link between the developer and the fishermen, technological choices, and the management of unforeseen events and trust during the construction phase. We then analyzed the levels and trajectories of acceptance. We observe several ideal types. These are linear trajectories, with either continuous rejection, or continuous acceptance but subject to conditions and pressure. These are breaking trajectories: a turning point marks the transition from cooperation to conflict. The shape of the trajectories and the determinants of turning points or inflections were analyzed. This leads to operational deductions (prevention and treatment of conflictuality) and then theoretical ones: the place based strategies to be developed, and then the dynamic nature of the levels of acceptance and their effects are discussed.

Beyond National Borders: Mapping and Analyzing Cross-Border Functional Rural Areas in the EU

Dr. Matteo Berzi¹, Dr. Chris Jacobs-Crisioni¹

¹Join Research Centre (JRC), European Commission, Ispra, Italy

S47-S1 All Eyes on Border Regions: Enhancing Cross-Border Cooperation through Data-Driven Policy Support, Amphitheater I - SAKIS KARAGIORGAS, August 28, 2025, 9:00 AM - 10:30 AM

Our contribution focuses on exploring the concept of cross-border Functional Rural Areas (FRAs) in the European Union, where economic and social interactions transcend national borders. Building on the existing FRA framework, we aim to identify and analyze these cross-border regions, shedding light on their economic, social, and spatial dynamics. By developing a harmonized methodology for cross-border FRA definition, we will enable comparability and data aggregation at the pan-European level, facilitating a comprehensive understanding of the complexities of local and regional cross-border interactions and the role of rural areas in shaping cross-border regions in the EU.

The services sector in the times of crisis. The example of Poland

Dr. Joanna Dominiak¹

¹Adam Mickiewicz University, Poznań, Poznań , Poland

G01-O9 Urban, Regional, Territorial and Local Resilience, B5, August 29, 2025, 11:00 AM - 1:00 PM

The last decade has been characterized by a high intensity of various types of crisis phenomena, which cause significant changes in the functioning of society and the economy. The year 2020 began with the COVID-19 pandemic, which completely transformed the services market. Even before it ended, there was another accumulation of crisis phenomena related to the armed conflict in Ukraine. The services sector, which has not yet regained its economic condition after the pandemic, faced further challenges related to rising inflation, shortages in the availability of certain products and the energy crisis. All these elements significantly influenced the functioning of the services market both in Poland and around the world. The main purpose of the presentation is to present changes in the economic condition of the services sector measured by the turnover in individual sections in Poland compared to the other EU countries in 2012-2023. The analysis used indicators for the services sector published by Eurostat.

The analysis leads to the following conclusions. During the period under review, the pandemic had the greatest impact on changes in the turnover of service companies. Hotel, catering and tourist services suffered the most as a result of the crisis. The transport industry recorded significant declines. These entities experienced significant fluctuations in demand (related to the waves of the pandemic and the restrictions imposed at that time). The most resistant services turned out to be the ICT sector and business services, which transitioned to remote mode relatively easily. Analysis at the level of individual EU member states indicates significant differences in the turnover dynamics of service companies. The general rule is that the turnover dynamics in the "old countries" in the western part of the EU is lower than in the eastern part of the continent. These countries are also more resistant to crises and the COVID-19 pandemic. Southern European countries, and Greece in particular, are affected by the problem of low or even negative average quarterly turnover dynamics in the period 2005-2023 in basically all observed sectors. The effect of the war in Ukraine is observed at the end of the analyzed period. In the H section it reduces the dynamics. This effect is spatial in nature and its impact weakens with the distance from Ukraine.

Accessibility, Satisfaction, and Sustainability: A Composite Indicator Analysis of Local Public Transport in Italian Regions

Dr. Tiziano Pavanini¹, Dr. Carolina Bruzzi, Dr. Tommaso Filì, Prof. Enrico Ivaldi

¹Politecnico Of Milan, Milan, Italy

G05-O4 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 28, 2025, 9:00 AM - 10:30 AM

This paper investigates the territorial disparities in the quality of Local Public Transport (LPT) across Italian regions, focusing on the relationship between service accessibility, user satisfaction, and transport usage. The study employs the DP2 method to construct a composite indicator that integrates heterogeneous variables from the ISTAT dataset, ensuring a robust, multidimensional assessment of LPT performance. The findings reveal significant regional differences: the northern and central regions generally exhibit superior service quality and accessibility, while the southern regions often face challenges such as limited infrastructure and lower satisfaction levels. A positive correlation emerges between the ease of access to essential services and user satisfaction, highlighting the importance of accessibility in shaping perceptions of public transport quality. However, the relationship between satisfaction and actual usage appears weaker, suggesting that external factors, such as car ownership or urban layout, may influence transport choices. Cluster analysis further distinguishes three regional profiles: areas with high accessibility but low usage, regions with poor access and low satisfaction, and densely populated contexts with high usage but moderate satisfaction. The study emphasises the necessity for targeted policies that enhance accessibility and service quality, particularly in disadvantaged areas. Policymakers are encouraged to adopt a data-driven approach using the DP2 index to monitor performance, guide investments, and promote sustainable mobility practices that reduce territorial inequalities and support environmental goals.

EU Preparatory Action "Innovation for place-based transformation": Challenge-based approach for collaborative transformations

Dr. Ramojus Reimeris¹

¹European Commission, Sevilla, Spain

G03-O5 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 28, 2025, 4:30 PM - 6:30 PM

European Union (EU) is committed to making the twin green and digital transition a success towards a more sustainable and just economy. The priorities of the new European Commission are focused on building a sustainable and competitive Europe by strengthening the internal market, promoting decarbonisation and competitiveness, fostering innovation, increasing security and reducing dependencies.

In May 2022, JRC and Committee of the Regions (CoR) launched a pilot initiative known as Partnerships for Regional Innovation (PRI) with 74 European territories participating on a voluntary basis. Completion of the PRI Pilot initiative in May 2023 highlighted the growing political focus on transformative innovation policies as a driving force for socio-technical system transformation. The lessons learnt from the PRI Pilot initiative led to the co-creation of a practical policy guide “Innovation for Place-Based Transformations. ACTIONbook, practices and tools”. The next step was creation of a learning and experimentation arena, under the EU Preparatory Action (PA) mechanism.

This PA “Innovation for Place-based Transformation” is dedicated to empowering territories – including cities, regions and Member States in the EU, Candidate Countries and Horizon Europe Associated countries – to support policy practitioners in building capacities, designing and implementing transformative approaches. It promotes partnerships in networks or multi-stakeholder settings to address urgent challenges by tackling them with a place-based approach.

With the help of experts, 7 Experimentation Journeys (EJ) will be implemented, each focusing on a different challenge and involving 4-6 selected territories, based on application. The goal is to stimulate transformative innovation policy action and create a shared space for policy learning. PA challenge areas: achieving circularity; climate adaptation; improving healthcare; increasing global food security; mastering the digital transformation; new European Bauhaus; reducing reliance on fossil fuels.

The PA EJ are designed to generate new evidence for transformative innovation policy practice of common European interest. They will facilitate the creation of a shared space for policy learning where participants can advance on their transformative objectives with the help of peers and experts, collectively working on tangible policy-relevant outputs.

With conclusion of the Expression of Interest, we received close to 250 applications with almost 50 of them being for experimentation activities. Together with applicants, we will engage into the creation of EJ, first batch to be launched in Q3 of 2025, continuing with the rest in Q4. At the end of the summer, we will already have all EJ either launched, or almost ready for a launch.

Business Consequences of a Low-Emission Zone in Stockholm City

Dr Niklas Elert, Professor Niklas Rudholm, Dr Anders Bornhäll

¹HFI, Institute of Retail Economics, Stockholm, Sweden

S49 Towards more Resilient and Inclusive Urban Energy Futures, D1, August 27, 2025, 11:00 AM - 1:00 PM

A new class-3 environmental zone will be introduced in the central parts of Sweden's capital, Stockholm. Within class-3 environmental zones, only electric, fuel cell, and Euro VI gas vehicles are allowed to operate. While environmental zones often have favorable environmental effects, their relative effectiveness can be questioned on both theoretical and empirical grounds.

Theoretically, this type of ban (so-called technological standards) limits flexibility for actors and locks development into certain technologies. To address environmental problems, prohibition-like measures are therefore seen as less economically effective than other measures (e.g., performance standards, emissions taxes, or emissions trading schemes). However, the knowledge surrounding whether environmental zones are economically effective pathways for adaptation is scarce. We fill this knowledge gap regarding the economic costs of environmental zones, generating new knowledge about Stockholm's new class-3 environmental zone through a longitudinal survey directed at owners and site managers in the retail, tourism, and service sectors.

The survey is based on a methodologically sound evaluation logic, as it will be distributed to both treatment and control groups (actors inside and outside the environmental zone) that will be followed over time. To our knowledge, no previous survey study of the economic effects of environmental zones has had an approach that enables the identification of causal effects in this way. The expected outcomes are detailed knowledge of the economic consequences of the environmental zone for actors in the retail, tourism, and service industries, as well as valuable insights into how different business actors' expectations and adaptations change over time.

An important ambition is to clarify what distinguishes business owners who have suffered (unintentionally) negative economic consequences from those who have not been significantly affected. This provides crucial information that can help future environmental zone policy makers more effectively achieve their environmental and health goals. We also try to identify strategies that have enabled business operators to adapt successfully to the new environmental zones. This increases the potential to understand the challenges that arise if Stockholm expands its class-3 environmental zone, or if other Swedish or international cities introduce such zones. The lessons learned should be relevant both to the business sector's understanding of environmental zones in general, as well as to individual stores' and business operators' ability to adapt to this kind of development, which is important for their profitability and competitiveness.

Digital Peripheries. Logistics, Data Centers and Spatial Justice

Prof. Simonetta Armondi¹

¹Dastu - Politecnico Di Milano, Milano, Italy

S88-S1 Twin Transition and its Unequal Geography, B2, August 27, 2025, 4:30 PM - 6:30 PM

This paper explores the spatial materiality of digitalisation in Italy's extended urbanisation (Schmid, Topalovic, 2023),

where unprecedented investments are underway after saturation in other European regions. The taken-for-granted

purity of the 'digital turn' in global, national, and local urbanisation initiatives (Armondi, Di Vita, Galimberti, 2024; www.operationalegeographies.polimi.it; <https://www.dastu.polimi.it/prin-italian-geographies/>) hides wicked spatial problems. Places such as productive areas, technical hinterlands, operational landscapes, logistics hubs, and extractive zones are at the heart of the dynamics of environmental violence and techno-extractivism driven by state infrastructures and operations of capital (Mezzadra, Neilson, 2013). Key manifestations include, in particular, data centres (with technologies demanding soil, high water and energy inputs).

These emerging digital territories involve uneven processes, harming and exploiting communities, workers, and places they traverse, reconfiguring space and powers. Adopting a critical geography and political ecology framework to look at the Italian case in the context of wider global dynamics, the paper outlines three sections:

- Introducing the materiality of urbanisation-as digitalisation (Datta, 2023);
- Exploring ongoing digitalisation-driven territorial reconfigurations and patterns (of logistics warehouses and data centers) with preliminary reflections on the state's role, the operations of capital, and the bargaining capacity of regional and local authorities.

Green Dedicated Investments (GDI) and Enterprise-Level eGDI: A Theoretical Framework for Measuring Sustainable Investments

Dr. Zoltan Andras Daniel¹, Prof. Dr. Tamas Molnar¹

¹University Of Pannonia, Veszprém, Hungary

S39 Leveraging Green Financial Resources in the Fight to Overcome Regional Disparities, E1, August 27, 2025, 11:00 AM - 1:00 PM

Sustainable finance is playing an increasingly critical role in addressing economic and environmental challenges, particularly in regions where underdevelopment and regional disparities hinder sustainable growth. The objective of this research is to develop a theoretical framework for Green Dedicated Investments (GDI) at the national level and enterprise-level Green Dedicated Investments (eGDI), providing a systematic approach to measuring sustainable investments and analyzing their impact at both macroeconomic and microeconomic levels.

The GDI indicator quantifies the volume of green investments flowing into or out of a country, offering insights into how financial resources contribute to national sustainability goals and economic convergence. Meanwhile, the eGDI indicator measures the proportion of sustainable investments within individual companies, allowing for a firm-level assessment of commitment to ESG principles. These indicators serve as valuable tools in understanding the role of green finance in fostering economic development, particularly for small and medium-sized enterprises (SMEs), which often face barriers in accessing sustainability-focused funding.

The research utilizes international and domestic secondary data sources to construct a methodological framework for assessing and directing green investments more efficiently. The findings suggest that the application of GDI and eGDI indicators enhances the ability to identify investment patterns, evaluate their effectiveness in promoting environmental and social sustainability, and mitigate regional economic inequalities. By integrating these indicators into green finance strategies, policymakers and investors can make more informed decisions to support sustainable economic development and drive the transition towards a low-carbon economy.

Green investments and financial performance: comparing the returns of ESG funds with traditional investment funds

Dr. Zoltan Andras Daniel¹, Viktoria Monda¹

¹University Of Pannonia, Veszprém, Hungary

S39 Leveraging Green Financial Resources in the Fight to Overcome Regional Disparities, E1, August 27, 2025, 11:00 AM - 1:00 PM

ESG (Environmental, Social, Governance) investing has garnered significant attention in financial markets as sustainability considerations increasingly influence investor decision-making. The growing emphasis on responsible investing stems from both regulatory pressures and shifting investor preferences, as stakeholders seek to align their portfolios with ethical and environmental standards. However, a key question remains: do ESG funds offer competitive financial returns compared to traditional investment funds?

This paper aims to provide a comprehensive analysis of the financial performance of ESG funds relative to their conventional counterparts. Using secondary data sources such as Morningstar, MSCI ESG Ratings, and Bloomberg databases, the research employs time-series analysis to examine the historical returns of sustainable investment funds. The study explores whether ESG-oriented funds consistently generate comparable or superior returns while considering factors such as risk-adjusted performance, volatility, and long-term market trends. Additionally, it investigates how sustainability-driven strategies influence asset allocation and portfolio resilience in various economic conditions. By assessing both the financial viability and potential trade-offs of ESG investments, this research contributes to the broader discourse on sustainable finance. The findings will provide valuable insights into whether ESG funds can serve as both financially sound and socially responsible investment vehicles. Furthermore, the study seeks to highlight emerging trends in ESG investing, offering practical implications for asset managers, institutional investors, and policymakers navigating the evolving landscape of sustainable finance.

Bad neighbours: The link between gambling shops and gambling harms

Dr. Tasos Kitsos¹, Dr Francisco Nobre¹, Professor Emmanouil Tranos², Dr Chiara Paola Donegani¹

¹Aston University, Birmingham, United Kingdom, ²University of Bristol, Bristol, United Kingdom

S45 Spatial Aspects of Well-being, Addiction and Crime, F1, August 27, 2025, 4:30 PM - 6:30 PM

We look into the relationship between gambling shops and gambling harms. Harmful gambling is an increasingly recognised public health issue. 3.8% of England's population gambles at an "elevated risk" of addiction; 250,000 people in England have an addiction to gambling and these are linked with up to 500 suicides every year and up to £2 billion cost to the society.

On similar health concerns such as obesity, there is evidence that the geographic proximity to unhealthy food options (i.e. fast food) is a contributing factor. For gambling, such evidence is scant due to data constraints both on the location of gambling shops and the prevalence of gambling harms. We utilise the Gambling Commission's geocoded data on the location of gambling shops and match these to the GambleAware Treatment and Support Survey Data. Doing this allows us to shed light into the relationship between the presence of gambling venues and gambling harms in the UK. Specifically, we investigate how proximity to gambling shops influences the likelihood of an individual being classed as a problematic gambler while controlling for several confounders.

Our analysis starts by providing a rich set of descriptive statistics on the intensity of gambling shops across the country and its evolution since 2014. Continuing, we employ probit models that explore the relationship between gambling shops and gambling harms.

Initial findings show that proximity to gambling shops is positively associated to the probability of being a problematic gambler. These results are corroborated by robustness tests using propensity score matching and call for increased attention on the regulatory framework for gambling venues.

Understanding Partial Fiscal Decentralization: A Multidimensional Framework of Partial and Full Fiscal Decentralization

Mr Martin Bieleman¹, Dr. Dylan Jong¹, Prof. Dr. Maarten Allers¹

¹University Of Groningen, Groningen, The Netherlands

G21-O2 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 27, 2025,
4:30 PM - 6:30 PM

Many authors use the term partial fiscal decentralization to describe fiscal decentralization systems constrained in one or more dimensions; tax and/or expenditure autonomy, borrowing, the mandates subnational governments have authority over, or shared involvement in local public goods provision. This paper recognizes that fiscal decentralization is not a binary process but exists along a spectrum of several dimensions. Thus far, to the best of my knowledge, no authors have yet explicitly defined what partial fiscal decentralization entails by systematically outlining its dimensions.

Consequently, this paper introduces a multidimensional framework that first differentiates between different forms of decentralization and second focuses on the various dimensions of fiscal decentralization. The concentration of mandates and their respective expenditures and revenues at the subnational level make up the first two dimensions. Subnational governments' freedom to decide how to spend (expenditure autonomy) and how to finance these expenditures (revenue autonomy) form the third and fourth dimensions of fiscal decentralization. Subsequently, we can more clearly demarcate partial fiscal decentralization, full fiscal decentralization, and full fiscal centralization by considering various dimensions.

Next, we provide an overview of the several benefits and drawbacks of full and partial fiscal decentralization compared to full fiscal centralization. Their relevance is assessed by looking at empirical support. Moreover, empirical literature identifies conditions under which the benefits and drawbacks of partial and full fiscal decentralization arise. Additionally, by knowing the conditions for certain benefits and drawbacks we might be able to explain why countries opt for certain fiscal decentralization design choices.

The paper contributes to the development of a research agenda on partial fiscal decentralization by assessing empirical support for its various benefits and drawbacks, which also helps to identify numerous gaps and open questions in academic literature. Preliminary results highlight possibilities for researching the implications of the interrelationship between transfer dependency and uncertainty on subnational fiscal behavior.

Regional Windows of Opportunities in GVCs: The Impact of inward FDI on Local Subcontractors' Upgrading

Prof. Jacopo Canello^{1,2}, Prof. Gianluca Capone¹, Dr. Cristina Re¹

¹University Of Parma, Parma, Italy, ²University of Groningen, Groningen, The Netherlands

S08 Regional Impacts of Global Value Chains Reorganization, E14, August 29, 2025, 2:00 PM - 4:00 PM

This work investigates how the entry and exit of foreign MNEs influence upgrading strategies among small subcontractors in the Italian clothing and footwear sectors. Combining rich firm-level data on MSEs with micro-level data on FDI, we identify how foreign MNEs investment and disinvestment decisions influence four dimensions of local subcontractors' upgrading: High value-added activities upgrading, Client portfolio upgrading, Activity portfolio upgrading and Output upgrading. These dimensions allow us to explore how subcontractors adapt to structural changes in GVCs and how opportunities or disruptions created by foreign MNEs' investment and disinvestment decisions shape their trajectories.

The empirical analysis builds on the windows of opportunity framework, exploited by the evolutionary economics literature to study the catch-up process by latecomer firms in developing countries that determined many successful episodes of upgrading and shifts of industrial leadership in many sectoral systems. Within this framework, a window of opportunity can be defined as a disruption in the dynamics of a sectoral system, representing a change that is significantly more radical than the continuous, yet incremental processes typically driving the standard evolution of a sector. Recent contributions in this literature have highlighted i) the importance of adopting a firm-level perspective when studying windows of opportunity, in order to grasp the significant differences in how individual firms respond to changes in technology, demand or policies and ii) the relevance of external linkages in allowing firms to identify emerging opportunities.

Exploiting the recent developments of this literature, this paper identifies the entry and exit of foreign MNEs' subsidiaries in a locality as regional windows of opportunity for local subcontractors, which increase the chances of these firms to engage in upgrading. While the positive local spillovers of MNEs' entry on local subcontracting networks have been explored more frequently, the exit of MNEs from local production systems is typically regarded as a negative shock rather than an opportunity. However, recent studies suggest that disruptive events can also create opportunities for firms to upgrade the existing status quo. In our context, local subcontractors affected by foreign MNEs' GVC reconfiguration strategies may be compelled to upgrade their value chain strategies, serving as a wake up call for transformation.

Differences in Well-Being Across Cities: The Effect of Price Differentials on Household Welfare

Prof. Tatiane Menezes¹, Prof Carlos Azzoni², Prof Ana Luiza De Holanda Barboda³, Prof Alexandre Almeida⁴

¹Universidade Federal De Pernambuco - UFPE, Recife, Brazil, ²Universidade de São Paulo - USP, São Paulo, Brazil, ³Instituto de Pesquisa Econômica Aplicada - IPEA, Rio de Janeiro, Brazil, ⁴Escola Superior de Agricultura Luiz de Queiroz - ESALQ/USP, Piracicaba, Brazil

G11-O1 Public Policy Assessment: Inclusiveness and Poverty Alleviation Across Space; Equality in Opportunities and Territorial Justice, A4, August 28, 2025, 4:30 PM - 6:30 PM

Measuring and comparing inequality and poverty are crucial in policymaking decisions and economic discussions. Individual well-being depends on income and price levels, with household expenditures reflecting both consumption and price disparities over time and across regions. This study applies a deflator to capture cost-of-living differences in Brazilian cities, adjusting household expenditures through a superlative interregional price index. It highlights how unadjusted price differences bias poverty estimates and affect minimum wage earners and Bolsa Família recipients. The research builds on Deaton and Zaidi (2002) and Ravallion (2008), using spatial price indices to better map poverty distribution. In Brazil, 31.6% lived below the poverty line in 2022, yet a uniform poverty line ignores regional cost differences, overstating poverty in low-cost areas. Using the Country Product Dummy (CPD) method, the study constructs a Cost of Living Index (CLI) for major cities. Brasília showed the highest living costs, while Vitória had the lowest. Findings reveal how high living costs reduce purchasing power, even with higher nominal incomes, particularly in Brasília. The study offers a framework to adjust for cost-of-living disparities, aiding social policy and public program evaluation.

Smart and Green. The spatial effects of the Twin Transition in EU regions

Prof. Emanuela Marrocu¹, Prof. Raffaele Paci¹, Dr Luca Serafini¹

¹Università di Cagliari - CRENoS, Cagliari, Italy

S38-S6 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 29, 2025, 9:00 AM - 10:30 AM

The European Union (EU) faces the dual challenges of achieving climate neutrality and digital transformation, embodied in the European Green Deal and the Twin Transition (TT) strategy. These initiatives aim to foster sustainability and global competitiveness while advancing economic and technological innovation. The Smart Specialisation Strategy (S3), the EU's regional innovation framework, has evolved to reflect TT priorities, integrating environmental sustainability and digital advancement. This evolution, termed "S4," emphasizes the role of tailored regional strategies in aligning with broader EU goals.

This paper examines how European regions incorporated TT priorities into their S3 strategies during the 2014–2020 programming period, offering a twofold contribution. First, it documents significant regional heterogeneity in the integration of green and digital policies, highlighting the influence of local institutional capacities and economic conditions on the priority selection process. Second, it evaluates the relationship between these priorities and regional labor productivity growth.

The main findings indicate that digital, green, and twin projects are positively and significantly associated with productivity growth in low-productivity regions, highlighting their potential to address structural disadvantages. Moreover, we find evidence of U-shaped effects: middle-income regions experience weaker productivity impacts due to structural barriers and implementation inefficiencies, while high-productivity regions derive limited benefits, potentially due to diminishing returns. These results highlight the middle-income development trap and the complexity of TT implementation, where synergies and trade-offs vary across contexts.

This study enriches the literature on regional innovation and sustainability, emphasizing the need for place-sensitive regional policies to promote sustainable and inclusive economic growth. By examining the differential impacts of digital and green strategies, it contributes to discussions on how the twin transition can reduce disparities and enhance resilience in Europe.

Competitive situation of the coffee agroforestry system-timber production of Agri-SMEs of specialty coffees in the municipality of Ibagué (Colombia)

Prof. Alexander Blandon Lopez¹, Dr. Janeth Gonzalez Rubio¹, MA Illich Giancarlo Guependo Ortiz¹

¹Universidad Del Tolima, Ibagué, Colombia

G12-O1 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 27, 2025, 11:00 AM - 1:00 PM

The transformation of coffee production systems in the face of environmental and economic pressures has led small producers to seek sustainable alternatives such as agroforestry systems. The Colombian coffee landscape has evolved from monocultures to diversified systems, adapting to the changing needs of farmers and the market. In this context, coffee maintains its relevance by representing close to 15% of the agricultural GDP, involving around 550.000 families in 603 municipalities of the country. This research seeks to determine the competitive situation of the agroforestry coffee-wood production system of small and medium producers of specialty coffees in the municipality of Ibagué (Tolima) and to establish strategies for improvement. The methodological design includes a quantitative approach study with the application of structured questionnaires to 37 participants, including producers and sector experts. The competitiveness factors are evaluated based on Porter's Diamond model. The theoretical framework that underpins the research integrates the area of competitiveness, with emphasis on Porter's Diamond model (Porter, 2016), theories on agroforestry systems (Meybeck et al., 2021) and elements of the coffee value chain (Samoggia & Fantini, 2024; Fernandez-Stark, K., y Gereffi, G., 2019; Kaplinsky, R. 2004). This conceptual basis makes it possible to analyze both technical-productive aspects and environmental factors that influence the competitiveness of the system.

The results reveal a productive system with strengths in natural resources, but limitations in specialized factors, where 52.4% of producers manage between 1-5 hectares and 85.7% depend mainly on coffee as a source of income. Based on the diagnosis, strategies are proposed in five dimensions: sustainability and adaptation to climate change, differentiation and value added, associativity and social capital, technology and innovation, and marketing and markets. The conclusions point to the need for a comprehensive approach that combines organizational capacity building, technological innovation, and the development of specialized services, with particular attention to generational replacement and adaptation to climate change, aspects identified as critical for the future sustainability of the system. Finally, it is important to point out that the results of this research seek to contribute both to academic knowledge on agroforestry systems and to the practice of small and medium-sized producers who are exploring alternatives to improve their competitive position.

Beyond market regulation: rethinking tourism for sustainable and regenerative futures

Dr. João Romão¹

¹Yasuda Women's University, Hiroshima, Japan

G15-O2 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness, Quality of Life, E1, August 28, 2025, 9:00 AM - 10:30 AM

This paper explores the limitations of market-regulated tourism models in achieving sustainable and regenerative outcomes, arguing that individual utility-based economic models are incompatible with long-term social and environmental goals that protect residents's quality of life and respect the carrying capacity of each place.

It draws from the conclusions of different analysis focused on tourism-related sensitive problems: transport, mobility and climate change; tourism impacts on common resources; and transition from sustainable to regenerative approaches in tourism management. This contribution highlights how these three aspects intersect to justify the need for systemic reforms in tourism governance.

The study employs a comparative theoretical analysis, integrating literature reviews and case-based insights. It synthesizes findings from transport and CPR management studies and examines their implications for sustainable and regenerative tourism models. Data sources include policy documents, case studies, and secondary data from industry reports and academic publications.

The analysis identifies three key insights:

Tourism mobility and climate challenges: sustainable tourism mobility requires overcoming the limits of traditional transport models through adaptive planning, digital technologies, and multi-modal systems. Voluntary regulatory approaches and market-based mechanisms such as carbon trading are clearly insufficient to mitigate tourism-related CO₂ emissions;

Commons management and governance: overuse of common resources stems from market failures and governance gaps. Participatory governance is normally justified in order to promote community quality of life but it faces power imbalances and institutional barriers without stronger public intervention.

Limits of market-based sustainability: regenerative tourism principles - or other approaches with similar objectives, like degrowth or participatory planning - cannot be realized under economic models driven by individual utility maximization that do not take into account the carrying capacity of the places. Instead, coordinated, multi-level public policies and regulation-oriented frameworks are required to take into consideration the cumulative impacts of individual decisions or the diversity of motivations and interests within the communities.

This contribution calls for a paradigm shift in tourism governance, advocating for a transition from market-centric approaches to policy-driven, participatory, and multi-level strategies that integrate environmental, social, and economic goals. By positioning tourism as a vector for mutual understanding and collective well-being, it argues that the path to sustainability and regeneration requires not only innovative practices but also systemic reforms in economic governance.

Reconfiguring Urban Landscapes: Creative Economies, Circular Processes, and the Tourism-Gentrification Nexus

Dr. João Romão¹

¹Yasuda Women's University, Hiroshima, Japan

S01-S1 The Spatial, Regional and Urban Dimensions of Circular Economy, Amphitheater II - SAKIS
KARAGIORGAS, August 27, 2025, 11:00 AM - 1:00 PM

This paper offers a theoretical exploration of the intersection between urban tourism, circular economy practices, and gentrification within creative economies. It argues that boutique hotels (or other forms of using repurposed buildings for tourism accommodation) combined with conventional hotels and short-term rentals (which often also reuse existing buildings), can simultaneously drive urban regeneration and contribute to socio-economic polarization through displacement and neighborhood transformations.

The study aims to bridge gaps in sustainable urban development debates by highlighting tensions between circular economy principles and their social impacts, advocating for policies that promote socially inclusive tourism practices.

The research adopts a theoretical approach, synthesizing insights from creative economy literature, circular economy frameworks, proximity or the and rent gap theory. The discussion is structured around key themes: the role of creative economies in driving urban tourism, the circular practices embedded in boutique hotel operations, and the socio-economic impacts of tourism-induced gentrification.

The paper further examines the tensions between environmental and social outcomes of circular tourism practices, analyzing how adaptive reuse, local sourcing, and sustainable operations align with circular economy goals while also potentially generating labor equity concerns and displacement pressures.

The analysis emphasizes that tourism's impact on urban change varies depending on local contexts, with some areas experiencing displacement and others benefiting from revitalization, such as in the 'alberghi diffusi' model in smaller Italian towns.

The study concludes that achieving sustainable urban development requires integrating social equity into circular economy frameworks. It advocates for inclusive urban policies, particularly in housing and planning, to ensure that tourism-driven urban reuse supports both environmental and social sustainability. This integrated perspective positions urban tourism as a potential catalyst for equitable and circular urban development.

Incidence of tourism management on the competitiveness of companies offering nature tourism in the city of Ibagué (Colombia)

Dr. Janeth González Rubio¹, Dr. Alexander Blandon Lopez¹, M.A Yurany Alejandra Orozco Tellez¹

¹Universidad Del Tolima, IBAGUE, Colombia

G15-O2 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness, Quality of Life, E1, August 28, 2025, 9:00 AM - 10:30 AM

The World Tourism Organization (WTO, 2002) defines Nature Tourism as "all types of nature-based tourism, in which the main motivation is the observation and appreciation of nature, as well as traditional cultures". The city of Ibagué in Colombia is characterized by its tourist vocation focused on Nature Tourism. Within the nature tourism products, ecotourism, and adventure activities such as hiking, horseback riding, bird watching, climbing, and mountaineering can be found in the city. In addition, Ibagué is known as the musical city of Colombia and has great gastronomy and folklore which are present in its nature tourism corridors.

The main objective of this study is to determine the impact of tourism management on the competitiveness of companies that offer nature tourism in the city of Ibagué. The analytical framework is taken under a destination management approach, which was adapted for the present study. This incorporates categories proposed by (Ritchie & Crouch, 2003), (Daengbuppha & Nonsiri, 2014) and (Hassan, 2000), mainly, on the processes necessary for decision-making to improve the competitiveness of the destination, the quality and effectiveness of the supporting factors and resources. The methodological design includes a quantitative approach study. A stratified sampling by fixed proportions was carried out for the population under study, 137 nature tourism service providers. A total sample size of 81 was defined. The variables that correspond to the factors of destination management established in the model of (Ritchie & Crouch, 1999) are taken, which are: resource management and organization; marketing; information systems and service, which in the case of Tolima have not been academically reviewed for the tourism sector.

The results of the study are: first, identification of the companies that offer nature tourism services in the city of Ibagué, their marketing and promotion channels. Second, evaluation of the levels of competitiveness and factors of tourism management in companies dedicated to nature tourism in the city of Ibagué. 3. Strategies oriented to promote the competitiveness of the companies dedicated to nature tourism in the city of Ibagué. By and large it was found that tourist management by tourism providers in the city of Ibagué has a direct impact on the business competitiveness of the destination. In fact, the importance of tourism promotion and the development of tourism products highlights the need to jointly strengthen actions to make the city visible through marketing and digital commercialization as a tourist destination in the national and international spheres.

Regional resilience, economic structure and institutional quality in the European Union

Prof. Eleonora Cutrini¹, Dr. Alfonso Carfora, Dr. Federico Ninivaggi

¹Unimc / Università Degli Studi Di Macerata, Macerata, Italy

G13-O3 Social Capital, Territorial Capital, Institutions and The Commons, G4, August 29, 2025, 9:00 AM - 10:30 AM

The continual crises that have characterized the past twenty years have raised important concerns on differences in the regional effects of the economic shocks within the European Union. In fact, regional disparities in per capita GDP have tended to widen in the aftermath of crisis of different nature such as the 2008 financial crisis, the 2012 sovereign debt crisis and the Covid-19 pandemic.

Despite it is widely acknowledged that institutions and governance are important to understand the uneven impact of broader international drivers, only few studies in the field have investigated recent evidence, after the Covid-crisis, with analysis accounting for potential spatial spillover effects.

The aim of this study is to evaluate whether and to what extent pre-crisis exposure and vulnerabilities, such as those related to economic fundamentals (i.e., physical capital, human capital, economic structures) and institutional characteristics, can explain the regional capability to recover after a shock. The analysis is based on a spatial econometric approach applied to a panel of EU NUTS 2 regions and covers the period 2000–2021. Data for per capita GDP, human capital, physical capital economic structure are drawn from Eurostat, while institutional quality is measured by the European Quality of Government (EQI) index and its pillars (Charron et al., 2022). The estimation method is particularly suitable for the characteristics of the data employed since regional spillover effects arise in the outcome variable– i.e., the per capita GDP –.

Our preliminary results confirm previous works that established the prominence of regional economic structure. However, institutional quality provides a significant contribution to foster regional growth and resilience.

Does Government Support Sustain Rural Retail? Evaluating the Impact on Survival and Growth

Dr. Anders Bornhäll¹, **Associate Professor Oana Mihaescu¹**, Dr. Olga Lark²

¹Institute Of Retail Economics, Stockholm, Sweden, ²Research Institute of Industrial Economics, Stockholm, Sweden

G19-O1 Urban, Regional and Local Policy Evaluation, G3, August 27, 2025, 2:00 PM - 4:00 PM

Access to essential commercial services, such as food retailers, is a cornerstone of rural community sustainability. However, since the mid-1990s, food retailers in Sweden's remote areas have steadily declined. This trend has worsened in recent years, particularly due to the COVID-19 pandemic, which led to further closures and operational struggles among rural retailers. Beyond providing food, these retailers serve as key service hubs, offering postal services, pharmacy products, and fostering community engagement. To counteract this decline, the Swedish government introduced a financial support program in 2016, allocating 35 million SEK annually, later expanded to 70 million SEK in 2018 to include more businesses. However, the effectiveness of this support remains widely debated. This study evaluates whether the government's support package has successfully mitigated the negative trend in rural grocery retail. Specifically, we investigate (1) whether the decline in store performance has been reversed, (2) the extent to which the support has contributed to store survival, (3) its impact on key financial and operational metrics such as turnover, employment, productivity, profits, and operating margins, (4) differences in outcomes between the original support recipients and those included in the 2018 expansion, and (5) how stores have allocated the support, e.g., toward wages, employment, or other business improvements.

Our analysis employs a quantitative approach using administrative data on rural grocery stores, comparing financial and operational performance before and after the support program's implementation. Preliminary results suggest a modest positive effect on sales and employment, though no statistically significant impact on store survival was found. However, recipients significantly increased wage payments, suggesting a potential link to extended opening hours. The 2018 expansion recipients saw similar but less pronounced effects. By analyzing the impact of financial aid on store performance and survival, this study contributes to the ongoing debate on the effectiveness of public intervention in sustaining rural commercial services. The findings will inform discussions on whether the current support model should be revised or expanded to better address the evolving needs of small retailers and promote long-term growth.

Investing in the Twin Transition: The Impact of Green and Digital Projects on Firms' Performance

Dr. Luca Serafini¹, Prof. Emanuela Marrocu¹, Prof. Raffaele Paci¹

¹Università di Cagliari - CRENoS, Cagliari, Italy

S38-S4 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),

E14, August 28, 2025, 9:00 AM - 10:30 AM

This paper presents a comprehensive investigation into the impact of twin transition (TT) - green and digital - initiatives on firm performance in Italy over the period 2014–2023. By examining firms' participation in green and digital activities, the study provides valuable insights into how these investments correlate with economic outcomes, aligning with the European Green Deal's objectives of fostering sustainable and digital growth.

The analysis integrates two Italian-focused datasets: OpenCoesione, which provides information on green and digital investments funded by the European Regional Development Fund (ERDF), and Aida, a source of firm-level data on key performance indicators such as value added, employment, and labour productivity. The study adopts a two-stage approach. First, text analysis techniques identify the green and digital content of ERDF-funded projects by analysing project titles and descriptions. Second, a Staggered Difference-in-Differences econometric approach assesses these initiatives' temporal and firm-specific impacts on performance outcomes.

Additionally, the study explores regional disparities by comparing the effects of green and digital investments in northern and southern Italy, assessing whether adopting TT technologies can help mitigate regional inequalities. This aspect is particularly relevant given Italy's economic divide, where southern regions often lag behind northern counterparts in growth and innovation capacity. By evaluating the differential impacts of TT initiatives, the study sheds light on whether these investments foster more balanced and inclusive economic development.

The findings are expected to highlight both the immediate benefits of TT initiatives, such as improved productivity and employment, and potential short-term challenges, including adaptation costs and varying returns. These outcomes emphasise the transformative role of TT initiatives in reshaping Italy's corporate landscape and the need for targeted policy support to foster sustainable growth and address regional disparities. The study provides valuable insights for policymakers and business leaders to actively support firms through this critical transition.

Understanding Just Transition Governance: A Comparative Study Using Fuzzy Cognitive Mapping in Coal Regions

Mr. Nikolaos Tourlis¹, Dr. Despoina Kanteler¹, Dr. Dionysios Giannakopoulos², Dr. Dimitris Kallioras³, Dr. Lefteris Topaloglou¹

¹University of Western Macedonia, Kozani, Greece, ²Chemical Process and Energy Resources Institute / CERTH, Ptolemaida, Greece, ³University of Thessaly, Volos, Greece

S40-S1 Just Transition Governance: The Challenges of Justice, Place-based strategies and monitoring mechanisms, F12, August 27, 2025, 11:00 AM - 1:00 PM

Background: The current research aims to analyze the effectiveness and fairness of governance approaches in the transition towards a post-coal economy. This research applies a comparative model in three significant coal regions—Western Macedonia (Greece), Stara Zagora (Bulgaria), and Silesia (Poland)—in order to examine governance strategies and their impact on spatial justice and local engagement. **Empirical Methodology:** Fieldwork in the three coal-transition regions to capture the situation of just transition governance structures. 42 in-depth, semi-structured interviews with experts representing government departments, industry, civil society organizations, and academics—key actors of the quadruple helix model were conducted. The selection of interviewees was based on a purposive sampling strategy for inclusive representation of perspectives towards just transition governance. Thematic coding was applied to the transcripts of interviews to identify governance challenges and best practices. FCM workshops were subsequently held with more than 20 governance experts following the interviews. The participants were asked to plot causal maps of causal connections among primary governance variables, including policy frameworks, stakeholder participation, economic incentives, and spatial justice considerations. Consolidated cognitive maps provided a graphic and analytic overview of governance types perceived, covering commonalities and issues present in different regions. Scenario simulation was then undertaken to estimate the likely impact of alternative governance forms on balanced transition outcomes. **Findings and Discussion:** The initial results demonstrate significant regional governance performance imbalances. More specifically in Western Macedonia there exists a good institutional framework but there are low levels of public engagement, whereas the region of Silesia has an industrial diversity plagued by socio-economic disparities. On the other hand, in Stara Zagora, the findings show fragmented governance structures, which translate into fragmented decision-making and a slow process in the just energy transition. **Conclusions:** This study contributes to just transition research by applying FCM to the study of governance arrangements in coal-transition regions. Through the integration of participatory modeling and expert insights, this research provides a more in-depth insight of governance processes and their implications for equity and spatial justice. Future research is invited to expand FCM applications to other transitioning economies to scale up governance models and inform policy interventions for facilitating equitable energy transitions.

Austerity, local service provision and social fabric. The efficiency and well-being effect of spatial restructuring of public services in England.

Dr. Daria Denti¹, Prof Paolo Veneri

¹Gran Sasso Science Institute, L'aquila, Italy

S45 Spatial Aspects of Well-being, Addiction and Crime, F1, August 27, 2025, 4:30 PM - 6:30 PM

This paper examines how post-2010 austerity-driven spatial reorganization of public services in England affected community social cohesion and well-being. Using a novel panel dataset tracking changes in essential services (courts, pharmacies, schools, and childcare facilities) across English local authorities from early 2000s to 2019, we combine georeferenced administrative data with service performance metrics and Understanding Society survey responses. Our identification strategy uses two quasi-experimental variations: the staggered timing of service reorganizations and the administrative rule for merging facilities with their closest counterparts. Through staggered difference-in-differences analysis, we examine how facility closures impacted social cohesion trajectories and service quality, and investigate whether service quality changes mediated social cohesion outcomes.

The Soy Connection: How Biodiesel Policies Shape Derivatives Markets

Prof. Anieli Carrara², **Prof. Nicole Castro**¹, Prof. Geraldo Barros¹, Dr. Fernanda Lisbinski¹, Dr. Daniel Amaral³

¹Luiz De Queiroz College Of Agriculture (Esalq), University Of São Paulo (USP), Piracicaba, Brazil,

²Federal University of São Carlos (UFScar), Sorocaba, Brazil, ³Brazilian Association of Vegetable Oil Industries (Abiove) , São Paulo, Brazil

G12-O3 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 28, 2025, 9:00 AM - 10:30 AM

The energy transition is a strategic response to the climate crisis and the need to diversify energy sources, with regulations and targets implemented globally but adapted to each country's context. In 2023, biodiesel accounted for 46% of the combined global production of biodiesel and ethanol, a significant increase from just 7% in 2000; notably, the growth in biodiesel production contributed to 50% of the overall growth in the combined production of these two biofuels (Energy Institute Statistical Review of World Energy, 2024).

Brazil, a key player in the biofuels market, launched the National Program for Biodiesel Production and Use (PNPB) in 2004, mandating biodiesel blending with fossil diesel. The blend percentage increased from 2% in 2005 to 14% in 2024 and is set to reach 15% in 2025 under the new Future Fuel Law (Law No. 14,993), potentially rising to 25% in the coming years.

In 2024, soybean oil accounted for 72% of Brazil's biodiesel production. The economics of soybean oil-based biodiesel involves complex market interdependencies due to the joint nature of soybean crushing. Oil extraction inevitably produces a large volume of soybean meal, which represents approximately 80% of the processed volume, even when oil is the main intended product. Biodiesel mandates create additional demand for soybean oil, which remains inelastic up to the mandated blending level; however, this also increases soybean meal supply, which, if demand remains unchanged, can drive down meal prices, reducing overall processing profitability. On the other hand, lower meal prices may stimulate its use in livestock feed, highlighting intricate interactions between food, fuel, and feed markets.

This study quantifies how soybean oil demand influences crushing, explicitly considering its link to soybean meal supply and pricing. First, we develop a theoretical model to describe the joint market equilibrium, capturing the interdependencies in the soybean complex. Second, and considering that food, biofuel, and energy markets exhibit significant nonlinearities, the empirical analysis employs a Time-Varying Parameter Vector Autoregressive Model (TVP-VAR), which accounts for evolving market relationships, using monthly data from September 2006 to September 2024.

This research contributes to the literature by addressing the still underexplored relationship between biodiesel policies and the soybean market. Findings will support more efficient supply chain planning and energy policymaking in Brazil. Additionally, analyzing Brazil's soybean sector within the energy transition provides globally relevant insights, considering the country's role in renewable energy and international trade.

Economic Conditions and Crime – a Local, Reciprocal Relationship? Evidence from Sweden

Dr. Niklas Elert¹, Dr Anders Bornhäll¹

¹HFI, Institute of Retail Economics, Stockholm, Sweden

G01-O3 Urban, Regional, Territorial and Local Resilience, B5, August 27, 2025, 2:00 PM - 4:00 PM

Five percent of Sweden's population lives in disadvantaged areas, i.e., areas with low socioeconomic status where criminal networks influence the local community. Yet, people's sense of security and economic conditions are affected by crime at the local level also in other parts of the country. Research has so far underestimated the fact that the relationship between crime and economic conditions is likely reciprocal. This oversight is problematic both in terms of the role that safety and access to essential resources in the local environment play in people's development and in terms of the significance of business activity as the economic foundation of a local community.

Our research project addresses this knowledge gap by examining the reciprocal relationship between crime and economic opportunities at the local level. The goal is to generate knowledge that can guide efforts to improve safety and economic opportunities across Sweden, with a particular focus on the country's disadvantaged areas.

Previous studies have chosen to control for the reciprocal relationship rather than placing it at the center of analysis. In contrast, we focus on this reciprocity and investigate how local economic opportunities and various types of crime influence each other over time in Swedish (DeSo) neighborhoods. We also examine which other variables—such as income levels, educational attainment, and migration patterns—strengthen or weaken the relationship between economic opportunities and crime in different areas.

Understanding how crime and economic conditions interact provides crucial insights into where society should allocate resources to counteract negative trends or reinforce positive developments.

Acknowledging the policy implications of this research, we pose three key questions:

1. How do local economic conditions (e.g., business turnover, business entries and exits, industry composition, employment levels, and property values) affect crime in Swedish neighborhoods and districts?
2. How do different types of crime (e.g., violent crime, drug-related crime, and property crime) impact local economic opportunities in Swedish neighborhoods and districts?
3. Which other variables (e.g., income levels, population density, educational attainment, and migration patterns) influence the strength of the relationship between local economic opportunities and crime?

We answer these questions using econometric models that allow us to measure effect sizes while also identifying variables that influence the strength of the relationship. A deeper understanding of which factors affect the link between economic conditions and crime is likely essential for determining how to break negative spirals in different parts of the country.

The Geography of New Technology: Exposure to AI, Software and Robots in European Regional Labour Markets

Dr. Femke Cnossen¹, Prof. Sierdjan Koster¹

¹University of Groningen, Groningen, The Netherlands

S88-S2 Twin Transition and its Unequal Geography, B2, August 28, 2025, 9:00 AM - 10:30 AM

This research examines the differentiated regional exposure to new technologies across Europe. Over the past 40 years, biased technological change, particularly the rise of computer technologies, has led to declining employment in routine occupations, with varying local impacts; some regions benefit, while others struggle. Recent adoption of AI-technologies will likely bring equally significant and regionally varied employment effects. With this as a backdrop, we assess regional exposure to AI, software, and robots by linking occupation-level exposure measures to NUTS-2 regions. Using data from the European Union Labour Force Survey, we show that i) AI exposure is particularly high in high-skilled regions and Robots and Software exposure in low- and middle educated areas and ii) that there are stark differences between Western/Northern regions and Eastern/Southern regions in the EU with the latter typically showing greater exposure to technology.

Sharing hospitality: The relationship between Airbnb, the accommodation industry and new touristic flows

Dr. Matteo Beghelli¹

¹Unioncamere Emilia-Romagna, Bologna, Italy

S09 Opportunities, Risks and Challenges of the Digital Transformation in Tourism: ICT and LocalDevelopment, E12, August 29, 2025, 9:00 AM - 10:30 AM

The purpose of this work is, firstly, to provide a determination of the magnitude of the tourism sharing economy phenomenon and its various components for an Italian tourism destination. The second goal is to evaluate the relationship between the tourist sharing economy (or sharing hospitality) and the hospitality managed professionally in terms of direct / indirect competition. Furthermore, the analysis of the turnover associated with different types of accommodations that can be booked on portals will lead to the evaluation of the percentage of "core sharing" in the business of the portals and to an esteem of new tourist flows generated by these tools. The updating of these issues was framed in the situation experienced by the tourism sector following the outbreak of the CoVid-19 and the second year of pandemic. The work therefore also questions the - contrasting - effects of the CoVid-19 on sharing hospitality. An in-depth analysis was carried out on Airbnb which, although not the only active portal in the area analyzed, is generally considered to be the one capable of developing the greatest traffic for the tourist facilities present therein. The analysis shows that, typically, only 20% of the turnover recorded by Airbnb in the metropolitan area of Bologna can be associated with the "pure" sharing economy, while the remaining 80% has different degrees of professional management which, in many cases, undermine the peer-to-peer relationship of the transaction established between the parties involved. Of this 80% of turnover, while 44% is associated with facilities that can be considered in direct competition with hotels, 36% is made up of tourist accommodations which, to varying degrees, play an indirect competition with hotels, thus activating new tourist flows to the destination's area. While this abstract is being presented, the analysis is being updated and expanded using the most recent data. The work also investigates the various consequences of the spread of tourist sharing in urban and extra-urban areas, highlighting the risk of displacement of habitual inhabitants from the most touristic parts of the cities and the permanent destination of the latter at the service of mass tourism, resulting in adverse social reactions. In the moment this abstract is presented, a complete revisiting of the work is undergoing to integrate new data-set.

History and functioning mechanisms in the video game industry: the case of the Turin cluster

Dr. Nicola Costalunga¹, Prof. Riccardo Fassone

¹University Of Turin, Turin, Italy

S25 Video Game Industry and Regional Development, G6, August 27, 2025, 2:00 PM - 4:00 PM

The video game production sector represents an industry not only of growing economic value but of increasing importance in the everyday social and cultural spheres. This industry is characterised by important relationship mechanisms – formal and informal – that are found in all the sector's production clusters around the world. This is also the case of the video game production cluster in Turin, a city with an important industrial, economic and cultural history located in northwestern Italy. This work intends to propose a reconstruction of the evolution of the Turin video game production cluster, highlighting the peculiarities that characterise it mainly due to the particular features linked to its socio-cultural-spatial location. In particular, the operating mechanisms, both formal and informal, that characterise and diversify the Turin cluster – with respect to other sector ecosystems in Italy – will be highlighted, thus determining its strengths and inherent weaknesses.

The methodology of this work is based on the study and analysis of primary and secondary sources. The direct sources are composed of a series of semi-structured qualitative interviews with the main actors belonging to the Turin video game ecosystem (N=21) and institutional documentation created ad-hoc within the cluster. This study is part of the Horizon research project “GAME-ER” (Gaming Clusters Across Multiple European Regions), whose goal is to research how video game clusters emerge, develop and sustain themselves, with a focus on local and regional clusters located in five European countries (France, Czechia, Portugal, Italy and Scotland).

Societal resilience in the European policy context: challenges and opportunities of experimentation approaches

Dr. Matias Barberis Rami¹

¹Efis Centre, Brussels, Belgium

S42-S2 Strengthening Societal Resilience Through Policy Experimentation, Foresight and Participatory Approaches, D1, August 27, 2025, 4:30 PM - 6:30 PM

The concept of resilience has gained increasing attention in response to the growing complexity of interrelated challenges and the impacts of various crises—whether disasters, economic downturns, migration waves, public health emergencies, or cyber threats. Societies need to develop the capacity to anticipate and prepare for these challenges by formulating strategies and implementing concrete policy actions to withstand shocks, remain flexible, and adapt to evolving and emerging threats.

In the policy domain, resilience serves as a catalyst for driving transformation in alignment with interconnected and broader policy objectives, such as cohesion policy, the Green Deal, and twin transitions. Policy experimentation provides an opportunity to enhance resilience by bringing together multiple stakeholders to develop solutions on a smaller scale, which can then be scaled up and out to benefit wider society.

The FutuResilience labs functioned as multi-stakeholder experimentation spaces, demonstrating how foresight and other policy-testing approaches—such as speculative design, science fiction narratives, and forecasting tools—can inform policymaking and strategic planning. These approaches enable proactive rather than reactive responses to societal issues, including healthcare systems, extreme weather events, access to housing, residential planning, public service provision, cybersecurity, and social integration.

This paper analyses the challenges and opportunities of policy experimentation as a core approach to building or strengthening societal resilience. This is achieved through a multidimensional analysis of the FutuResilience Labs ecosystem, complemented by global experiences in resilience-building. The analysis is based on content examination and includes insights from design processes and observations gathered during experimentation across several FutuResilience labs.

Can we trust our published research? The reproducibility of research published in major regional science journals

Prof. Gunther Maier¹, Dr. Sabine Sedlacek¹

¹Modul University Vienna, Vienna, Austria

G25-O2 Enriching Research and Policy Methods in Regional Science: Digital Tools, Artificial Intelligence, Participatory Methods, Mapping Techniques, Stakeholder Involvement, Amph 3, August 28, 2025, 4:30 PM - 6:30 PM

Since John P.A. Ioannidis published his article “Why Most Published Research Findings are False” (Ioannidis, 2005), substantial evidence has accumulated that science and research in their current form have a problem with replicability and reproducibility of their published findings. The discussion initially focused on psychology and medicine, but in the meantime, we know that other natural and social science disciplines are affected as well (Baker, 2016). This issue goes to the heart of science and research, as it undermines the credibility of theoretical concepts that build on those findings and may call into question substantial parts of accumulated scientific knowledge. Most alarmingly, these are not random anomalies, but are related to basic elements of our traditional research paradigm.

To our knowledge, these issues have thus far been largely ignored in Regional Science. We basically do not know whether there is a “reproducibility crisis” in Regional Science as well and if so, how large it is. With our paper we want to take a first step toward answering this question. The paper will examine the publishing behavior of researchers in regional science journals and aim at identifying whether and how researchers provide access to their research designs, data and results. This can be seen as a prerequisite for reproducible research. Only when authors fully disclose these elements, one can even try to replicate their research. In this article, we will concentrate on access to the data. We select articles published in major main regional science outlets (incl. Regional Studies, Papers in Regional Science, Region, Regional Science Policy & Practice) within the period 2022-24. For obvious reasons, we concentrate on empirical papers and exclude purely theoretical and conceptual contributions. By use of data-mining methods, we identify all text areas that contain the string “data”. Then, we read through these text areas and categorize the article by clarity of the provided information about data sources, availability of those data and the level of difficulty by which other researchers can access those data. In the end, we hope to be able to reach a lower bound for the percentage of non-reproducible publications in Regional Science.

Integrating and monitoring culture in the Sustainable Development Goals (SDGs) framework

Dr. Flavia Barca¹

¹Acume, Roma, Italy

S02 Localizing Sustainable Development Goals: Actions, Assessments, and Interlinkages at the Regional Level, G6, August 27, 2025, 4:30 PM - 6:30 PM

The aim of the paper is to show the relevance of culture for the achievement of Sustainable Development Goals (SDGs) and to translate this value into a set of indicators that can be monitored at the local level. To this end, 40 indicators were extracted from the most relevant sources, categorized into four key areas: economic contributions, access to cultural resources, wellbeing, and cultural education. Balancing traditional metrics with innovative approaches to capture both tangible and intangible benefits of culture, they illustrate how culture influences local development, from economic impact to social cohesion and environmental stewardship. In order to provide policymakers with a practical implementation tool to test the relationship between culture and development, a final framework of ten ‘strong’, effective and measurable indicators was then identified.

Urban resilience: holistic perspectives on challenges in urban environments

Prof. Krzysztof Rogatka², Mr Tomasz Starczewski¹

¹Nicolaus Copernicus University, Torun, Poland, ²Nicolaus Copernicus University, Toruń, Poland
G01-O8 Urban, Regional, Territorial and Local Resilience, B5, August 29, 2025, 9:00 AM - 10:30 AM

In the context of escalating challenges posed by climate crises, globalization, and the intensification of urban disruptions, urban resilience has emerged as a critical concept for contemporary cities. This study aims to provide a comprehensive analysis of the urban resilience concept within the scientific literature published between 2010 and 2024, identifying its current dimensions and practical implications for urban management.

The research is based on bibliometric analysis conducted using two major databases—Web of Science and Scopus—covering over 6,000 scientific articles. Both quantitative and network analyses were employed, allowing the identification of six key dimensions of urban resilience: environmental, social, infrastructural, economic, administrative, and disruption-oriented.

The findings highlight that urban resilience is a multidimensional and dynamic process requiring the integration of technology, innovation, and environmental protection efforts. Special attention is given to the role of green infrastructure in mitigating the effects of climate change, such as urban heat islands, floods, and ecosystem degradation. Furthermore, the study emphasizes that effective urban management necessitates synergy between central and local governance levels, as well as active engagement of local communities in decision-making processes.

The article also underscores the importance of adaptive crisis management, enabling cities to recover quickly from disasters and minimize economic losses. Additionally, it identifies areas requiring further research attention, particularly the social and economic dimensions of resilience, which, despite their critical importance, are underrepresented in the existing literature.

The study's results provide a foundation for future research and the practical implementation of strategies supporting sustainable urban development, enhancing cities' ability to adapt, survive, and thrive amidst the complex challenges of contemporary times.

Cultural Heritage and Civicness: Pathways to Economic Impact Under Different Tourism Pressures

Prof. Silvia Cerisola¹, Prof. Elisa Panzera

¹Politecnico di Milano - DABC, Milan, Italy

S37 Towards Local Development Through a Sustainable Valorization of Cultural Heritage, B4, August 29, 2025, 2:00 PM - 4:00 PM

Cultural Heritage (CH) is perceived as an important asset for local economic development. However, its impact on economic performance is often just assumed, without much empirical evidence. In fact, the mere presence of heritage is not enough: it must be valorized and somehow “activated”. The main transmission channel that has been explored in the existing literature is (cultural) tourism.

Nevertheless, there are increasing concerns about the potential negative implications of (over)tourism. Although to a much lower extent with respect to tourism, other more sophisticated and intangible transmission channels have been explored.

This work originally aims at jointly assessing the role of tourism and territorial intangible assets (community attachment) in mediating the impact of CH on local development. Innovatively, the paper analyzes Italian municipalities, considering: i. that tourism and community attachment are not independent (tourism might exert a negative effect on local intangible assets), and ii. that different local conditions in terms of touristic pressure (i.e., overtourism or undertourism) might influence the overall outcomes.

The issue is econometrically explored through a Structural Equation Model (SEM) performed on Italian municipalities, with spatially lagged variables to take into account the spatial dependence of the observations. Such model allows to consider the different relationships involved in the overall reasoning. In addition, the choice of the chronological consequentiality in the data guarantees a “de-trended” setting. The dependent variable is the growth of per capita income at the municipal level in Italy. Particularly, a significant direct effect of CH on the dependent variable is not expected, since CH needs to be «activated» to become effective in favoring local development. Significant effects are instead anticipated when the touristic channel is considered, since CH works as an attractor of tourists. On the other hand, CH is thought to positively affect community attachment through enhancing sense of belonging and local identity, and, by this channel, to positively affect per capita income growth through promoting civic engagement, trust, cooperation, and collective learning processes. Community attachment is measured as a composite indicator involving inclusiveness, civicness, and altruism. The model also allows to study the direct relationship between tourism and community attachment, which could be negative due to the potentially detrimental impact of strong touristic flows on local identity. Eventually, drawing on some previous work by the authors, the sample is split into “overtourism” and “undertourism” municipalities to appreciate potentially different effects in the different situations and to provide suitable policy suggestions.

Exploring Drivers of Car Use: Spatial Analysis with Explainable AI on French Urban Regions

Dr. Mehmet Guney Celbis², Prof. Louafi Bouzouina¹

¹ENTPE-LAET, University of Lyon, Vaulx-en-velin, France, ²ENTPE-LAET, University of Lyon, Vaulx-en-velin, France

G01-O9 Urban, Regional, Territorial and Local Resilience, B5, August 29, 2025, 11:00 AM - 1:00 PM

Car use contributes to greenhouse gas emissions, congestion, air pollution, and inequitable access to mobility options. While prior research has identified broad determinants of car use, a deeper understanding of how household and neighborhood-level factors interact in shaping commuting choices is needed. This study investigates the spatial and socioeconomic determinants of car use in three major French urban regions—Lyon, Lille, and Marseille—each representing distinct urban forms with differing levels of public transport accessibility and mobility behavior. The core research question is: To what extent household and spatial factors influence car use, and how do their effects vary across different urban contexts?

The study integrates two key data sources: 1- the 2021 French population census (Logements ordinaires – Recensement de la population), which provides extensive household-level data, including demographics, housing characteristics, and commuting behavior. 2- a set of spatial indicators derived using QGIS, capturing features such as public transport network extent, cycling infrastructure, and accessibility to key amenities. These datasets are merged at the IRIS level, the smallest statistical spatial unit in France, to enable a fine-grained analysis of how urban form and socioeconomic conditions shape transport behavior.

The methodological approach applies tree-based ensemble learning methods, particularly Extreme Gradient Boosting (XGBoost), to capture complex, nonlinear relationships between explanatory variables and car use. Gradient Boosting is well-suited to handling high-dimensional data and allow for flexible modeling without imposing restrictive assumptions. Thanks to the possibilities for regularization provided by the XGBoost algorithm, car use can be predicted in a more generalizable way. To improve interpretability, the study employs SHAP (SHapley Additive exPlanations) values, which quantify the marginal contributions of each factor to car use. This approach allows for a transparent analysis of how variables such as income, employment status, transit proximity, and neighborhood design interact in influencing mobility choices. The effect sizes of model variables and their directions can be measured for each neighborhood in an interactive and nonlinear fashion, while avoiding ceteris paribus results. Therefore, by leveraging spatial analysis and explainable AI, this study aims to uncover actionable insights that can inform policies promoting sustainable transport alternatives such as public transit, walking, and cycling. The findings will contribute to urban planning and transport policy by highlighting which interventions are most effective in reducing car use under different urban and socioeconomic conditions. Understanding these dynamics is critical for designing targeted policies that mitigate congestion and emissions while ensuring equitable access to sustainable mobility.

Gender Inequality and Transportation in São Paulo Metropolitan Region

Mr João Pedro Saldanha Corrêa¹, Prof. Dr. Eduardo Amaral Haddad¹

¹University of São Paulo, São Paulo, Brazil

G10-O2 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 27, 2025, 2:00 PM - 4:00 PM

The metropolitan region of São Paulo (SPMR), Brazil's main commercial and industrial center, is the largest urban agglomeration in South America, housing nearly 21 million people. Its vast size, transportation challenges, and unique socio-economic dynamics make it an interesting case study on gender inequality, particularly in regards to transportation.

A mobility survey, Pesquisa Origem Destino (POD), conducted by São Paulo city's subway company, maps the travel patterns of the metropolitan population on a typical business day. There have been seven editions of this survey, dating back to 1967, with the two most recent ones conducted in 2017 and 2023 – the latter one published in mid-February 2025. POD 2017 revealed significant gender disparities: among the whole population, 26.1% of men and 33.3% of women did not make any trips on the reference day, with the gender gap being even more pronounced among the old, reaching 11.6 percentage points. Men, specially working-age, traveled greater distances on average than women, with differences ranging from less than a kilometer to over three, depending on the demographic subgroup. Nevertheless, both genders spent approximately the same amount of time commuting. This pattern can be explained by differences in transportation mode usage: men tend to rely more on private vehicles, while women are disproportionately more likely to use public transit or walk.

Noting changes in ridership and mobility patterns following the COVID-19 pandemic, transportation authorities decided to conduct the next edition of POD in 2023 instead of 2027 as originally planned. Preliminary results reported by the media indicate significant reduction in number of trips across all transportation modes, an increased share of private vehicles use, the continued rise of ride-hailing services, and the emergence of remote work and distance learning as common arrangements for work and study. These shifts are likely to have uneven impacts between the genders.

This paper aims to contribute to the discussion on gender inequality in transportation by analyzing mobility patterns in SPMR in 2023 and comparing them to 2017. Furthermore, we seek to examine these patterns spatially, as income inequality – which is related to gender inequality – is geographically distributed across SPMR. Lastly, we intend to elaborate an index to measure the spatial mismatch between gender and employment accessibility.

Gone with the rain: Real estate devaluation and property tax in the City of São Paulo

Mr João Pedro Saldanha Corrêa¹, Prof. Dr. André Luis Squarize Chagas¹

¹University of São Paulo, São Paulo, Brazil

G22-O1 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, B6, August 27, 2025, 11:00 AM - 1:00 PM

The city of São Paulo, the center of the largest metropolitan region in Brazil, faces serious challenges regarding stormwater management. The city is frequently affected by seasonal storms and flooding, which are responsible for property loss and, occasionally, life. There is an urgent need for additional hydraulic infrastructure to mitigate these hazards. However, trade-offs with expenditures in other sectors, such as education and transportation, make it difficult to determine the optimal level of investment in water management and flood prevention. In this paper, we contribute to this assessment and related discussion by estimating the revenue loss incurred by the city's treasury due to lower property tax revenues from houses in flood-prone areas.

To determine flood risk, we classify those houses located within the floodplains of storms with a 100-year return period as flood-prone. According to our estimates, based on census data, approximately 4.5% of the city's population – amounting to 518,000 people – inhabit flood-prone areas. Furthermore, around 20.5 million square meters of housing space, or 4.05% of the city's total, are in these areas.

To measure the effect of location in flood-prone areas on house prices, we employ a conventional hedonic pricing model, augmented to control for spatial effects. House price data comes from the ITBI records, a municipal tax levied on real estate transfers. Our database spans the period from July 1994 to July 2024 and contains 301,413 transactions involving 246,966 houses, most of which were transferred only once in the study period. Of the houses in the dataset, flood-prone represents 3.8%. The database contains information on property characteristics such as plot size, home size, and building age. To account for neighborhood characteristics, we consider distances to the city's two main business districts, the nearest park, and the nearest train or subway station.

We ran two preliminary test regressions: a conventional linear model and an SLX model. The linear model estimates a direct effect of -474.07 BRL per square meter, leading to a total devaluation of 9.7 billion BRL across all flood-prone properties in São Paulo. The SLX model estimates a direct effect of -114.81 BRL and an indirect effect of -409.65 BRL per square meter.

We focus on revenue loss from the property tax, IPTU, which is based on property values. Since flood-prone houses are devalued compared to similar houses outside floodplains, this results in an implicit loss of tax revenue for the city's treasury.

The role of universities in shaping entrepreneurial competence as a factor in regional development

Dr. Małgorzata Żak-Skwierczyńska¹, Prof. Justyna Danielewicz¹, Prof. Maciej Turata¹

¹University of Lodz, Łódź, Poland

S67-S2 The Role of Higher Education Institutions in Unlocking Regional Innovation Potential and Overcoming Structural Disparities, G6, August 29, 2025, 2:00 PM - 4:00 PM

Entrepreneurship is a key driver of regional development, and universities play a crucial role in fostering entrepreneurial attitudes among graduates. This paper examines the relationship between higher education institutions and graduate entrepreneurship, assessing its impact on regional socio-economic growth in Poland.

The study explores three main areas: (1) how universities influence students' entrepreneurial attitudes, (2) the role of entrepreneurship in regional development, and (3) the effectiveness of regional policies in promoting entrepreneurial competencies. By analyzing statistical data on student enrollment, graduate business activity, and socio-economic indicators such as unemployment rates and start-up creation, the research identifies factors that support or hinder regional entrepreneurship.

Additionally, the paper evaluates regional development strategies to determine their effectiveness in fostering entrepreneurial mindsets. The findings provide insights for universities, policymakers, and economic development institutions, offering recommendations to strengthen the link between higher education and regional development.

Investment in education in a core-periphery model

Dr. Jorge Saraiva¹, Dr. Sofia B.S.D. Castro^{1,2}, Dr. João Correia-da-Silva¹

¹CEF.UP, Faculty of Economics, University of Porto, Porto, Portugal, Porto, Portugal, ²CMUP, University of Porto, Porto, Portugal, Porto, Portugal

G24-O1 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 27, 2025, 4:30 PM - 6:30 PM

We study how the spatial distribution and political framework of an economy affect the agents' education decisions. Using a core-periphery model where skilled workers can invest in education to increase their individual productivity, we find that agglomeration reduces investment in education if transportation costs are sufficiently high. This effect dissipates as transportation costs decrease if proportional income effects are present. Comparing education choices in three types of societies -- a centrally planned economy, a unionised economy, and a decentralised economy --, we find that the highest level of investment in education occurs in centrally planned economies and the lowest in unionised economies. Education yields a positive externality across the economy due to price decreases. However, we also find that education yields a negative externality for skilled workers due to the more competitive labour market. Finally, we conclude that individual and average education levels are strategic substitutes.

Evaluating natural resource funds at subnational level: the case of Colombia

Mr Gerson Javier Perez Valbuena¹, Mr Alejandro Ome, Mrs Laura Giles, Mr Cristhian Larrahondo

¹Banco de la Republica (the Central Bank Of Colombia), Cartagena de Indias, Colombia

G19-03 Urban, Regional and Local Policy Evaluation, G3, August 28, 2025, 9:00 AM - 10:30 AM

Natural resource funds (NRFs) are special-purpose investment funds that have become increasingly important fiscal and public asset management tools in resource dependent countries. They are generally used for fiscal and macroeconomic stabilization, as well as savings and investment. This study seeks to analyze municipal governments that participated in the Colombian Savings and Price Stabilization Fund (FAEP in Spanish). The fund was created to smooth out the effect of oil revenue on national and subnational expenditure. Interestingly, between 1995 and 2012, subnational municipal governments (SG) that were eligible for the FAEP were not only oil producing ones, but also those municipalities through which oil was exported. This study provides valid comparison groups, both with and without the presence of natural resources and for SGs with oil resources, those with and without an NRF. Specifically, it studies the FAEPs effectiveness in smoothing the effect of oil revenues on subnational public finances and on whether fiscal performance improved or worsened with the presence of royalties and then the FAEP. Data on the FAEP is obtained from two sources: (1) the Central Bank, which holds records of the contributions and withdrawals for each municipality between 1996-2003; and (2) the National Hydrocarbons Agency, as starting in 2004 the administration of the FAEP was transferred to this agency. To analyze the impact of FAEP on fiscal indicators, we use an instrumental variable approach since royalties might be endogenous to our outcomes of interest. The endogeneity problem of using royalties is solved by instrumenting royalties with the product between the international price of oil and oil production before the period of analysis, where port municipalities do not contribute to the regression, so identification of the impact of FAEP is based only on the relatively few FAEP oil producing municipalities. We address this by imputing the oil producing-equivalent of what port municipalities would need to produce to receive the royalties they receive. Since FAEP was a forced mechanism to save windfalls coming from the oil exploitation to be able to be spent during future downturns, the results we are expecting are the reductions in social investments and in the gross capital formation in FAEP municipalities when compared with non-FAEP (royalties-recipient) municipalities. In order to have a clearer view of the effects we will be able to decompose total investment (social and gross capital formation) by sector (14 sectors in total). Heterogeneous effects and robustness checks will be performed.

From Shock to Adjustment: How Internal Migration Absorbs Downgraded Immigrant Shocks?

Mr Wladimir Cerda¹, Dr Dusan Paredes

¹Universidad De Oviedo, Oviedo, Spain

G09-O2 Migration, Mobility Patterns and Impacts Across Space, G5, August 28, 2025, 9:00 AM - 10:30 AM

Recent evidence suggests that immigration effects can be absorbed through spatial mobility in long-term, but limited research exists in contexts where internal mobility is restricted and immigrant skills are imperfectly assimilated. The persistence of local mismatches becomes especially problematic when occupational downgrading among immigrants intensifies competition and worsens outcomes for low-skilled native workers.

This paper argue that the impact of immigration on local markets depends not only on the temporal horizon and spatial mobility adjustments, but also on how receiving economies integrate the skills of large immigrant inflows.

First, we propose a formal test for occupational downgrading and provide reduced-form evidence on the effects of increased immigrant participation in Chilean local labor markets segmented by occupation. Using a natural experiment —the Venezuelan crisis, which doubled the immigrant workforce in Chile between 2015 and 2017— we estimate immigration short-term effects on wages, employment and housing prices.

Our findings indicate that a rise in immigration reduces low-skill wages by 2.47% and low-skill employment by 4.74%, with no significant effects on high-skill workers. We also show that spatial mobility mitigates these effects, as workers relocate from areas highly exposed to immigration.

In the second part of the paper, we develop a dynamic spatial equilibrium model that incorporates simultaneous migration shocks of high- and low-skilled workers. The model shows how occupational downgrading amplifies the negative effects of labor supply shocks on low-skilled wages, increasing wage inequality and reducing the economy ability to correct initial imbalances.

Finally, we analyze wage dynamics assuming perfect assimilation of immigrant skills. In this scenario, the share of immigrants in low-skill occupations decreases from approximately 8% to 4%. Our simulations indicate that the adverse effects on low-skill wages are halved, and GDP increase by 1.32% in the long run as a result of the absence of occupational downgrading on immigrants.

Therefore, valuing immigrant skills and reducing institutional frictions are essential. The current laissez-faire approach to downgrading in Chile hampers the mitigation of adverse effects on wages from migration.

Resilience Analysis and NBS strategies of Industrial Clusters and Industrial Park Planning in Taiwan

Prof. Jen-Te Pai¹

¹National Chengchi University, Taipei City, Taiwan, ²President, TIUP, Taipei, Taiwan

G08-O3 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, Amphitheater I -
SAKIS KARAGIORGAS, August 27, 2025, 4:30 PM - 6:30 PM

In recent years, the world has been facing multiple crises such as climate change, ecological damage, economic shocks, and changes in industrial structure, severely impacting environmental security and economic development. With the advocacy of industrial globalization and sustainable development, the concept of resilience has received widespread attention. The resilience of industrial land facing both disaster and economic impacts varies, making the allocation and distribution of industrial land critically important.

This study focuses primarily on industrial land-use in Taiwan. Firstly, spatial autocorrelation analysis is used to examine the actual distribution of industrial clusters and to understand the advantageous locations that drive regional economic development. Subsequently, the resilience of industrial land in cluster areas will be evaluated, comparing and analyzing resilience levels from both disaster and economic perspectives. Finally, Geographic Information System (GIS) will be used for overlay analysis, comparing the allocation of industrial land under spatial planning, such as "New Industrial Land," "Future Development Areas," and "Urban-Rural Development Zones Type 2-3." This aims to explore the suitability evaluation of industrial park planning, providing references for future planning to select the most suitable locations for industrial land, thereby achieving the goal of appropriate land use. Furthermore, some (NBS) Natural Based Solution strategies were proposed to accompany with the planning.

European cross-border accessibility by public transport: A methodological approach

Dr. Philipp Gareis, Claire Duvernet, Florian Rödding

¹Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR), Bonn, Germany

S47-S1 All Eyes on Border Regions: Enhancing Cross-Border Cooperation through Data-Driven Policy Support, Amphitheater I - SAKIS KARAGIORGAS, August 28, 2025, 9:00 AM - 10:30 AM

Cross-border accessibility is a crucial aspect of European integration, particularly for the 40% of EU citizens residing in border regions. The Schengen Area has facilitated seamless movement, but disparities persist in cross-border public transport (CBPT) availability, particularly in rural areas. Commuters, service users, and businesses face challenges due to inconsistent CBPT networks, high fares, and long travel times. Existing research often focuses on travel time analyses by car or case studies of specific transport routes, neglecting the most important basis for evidence based policy making: comparable data on cross-border mobility by public transport with different multi-modal splits.

This study addresses these gaps by introducing a new methodological approach to analyzing CBPT accessibility through multi-modal travel time matrices. Using data from OpenStreetMap (OSM), Google Transit Feeds (GTFS), and various Points-of-Interest (POI), we show how with the help of Rapid Realistic Routing on Multimodal Transport Networks (r5r) it is possible to create granular accessibility data at a 1 km² grid level resolution. We focus on key services such as education, healthcare, and supermarkets, integrating Eurostat and OSM datasets to evaluate accessibility based on various travel combinations, including walking, biking, and e-bikes in combination with public transport.

Our results highlight significant disparities in CBPT access across European border regions. While some regions benefit from well-integrated transport networks, others face limited connectivity, undermining equal living opportunities. By providing policymakers with detailed, interactive dashboards displaying accessibility data, we close this black box in CBPT on the macro level to benchmark regions with similar problems and best-practice solutions.

The data should be understood as a starting point for improved cross-border spatial planning using real-world data. By adapting tools originally designed for urban mobility to the cross-border context, we demonstrate how this data can be created, utilized and be of use in different policy settings.

Assessing the impact of EU financial support on regional convergence: A Systematic Literature Review

Ms Greta Mockevičienė¹

¹Vilnius university, Siauliai Academy, Šiauliai, Lithuania

G21-O4 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 29, 2025,
11:00 AM - 1:00 PM

The European Union aims to reduce regional disparities and promote economic growth through substantial investment among its member states. Despite major investments, the impact of EU financial support on regional convergence remains unclear. The authors employed a Systematic Literature Review (SLR) to analyze the assessed impact and identify assessment gaps in evaluation of EU financial support on regional convergence, based on 33 articles published between 2012 and 2024. The findings reveal that the impact on regional convergence is often considered merely a spillover effect in the examined papers. Key findings suggest the need for more granular analyses of individual funds, such as the European Social Fund (ESF), and their targeted assessment in areas such as unemployment, social inclusion, education, and public services. Existing research predominantly focuses on NUTS-2 level regions, leaving NUTS-3 level unexplored. Future prospects: to assess the impact of individual funds rather than aggregated allocations on regional convergence, such as the impact of European Social Fund (ESF) investments on regional convergence by aiming to analyze specific target areas; to develop an economic specification that incorporates terms for fund allocations, the corresponding target areas, and their interactions, to assess the influence of these factors on reducing regional disparities through target areas rather than through expenditure effects; focus on smaller regions, such as the NUTS-3 level.

Water Under the Bridge: Investigating the Economic Consequences of Floods on Italian Municipalities

Ms Margherita Tambussi¹, Mr Matteo Broso, Mr Lorien Sabatino

¹University of Turin, Casteggio, Italy

G08-O3 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, Amphitheater I -

SAKIS KARAGIORGAS, August 27, 2025, 4:30 PM - 6:30 PM

Extreme weather events, exacerbated by climate change, present substantial challenges to local economies. Using geolocalized data on severe floods in Italy, this paper analyzes their medium- and long-term economic impacts on municipalities. Through an event study approach, we observe a persistent decline in population, GDP, and employment in flood-affected areas. We also document a significant increase in firm exits following these events. Moreover, we find heterogeneity in the effects across various demographic groups, firm sizes, and sectors, as well as significant spillover effects on neighboring municipalities. These findings underscore the urgent need for targeted policies aimed at strengthening resilience and facilitating recovery in regions prone to such disasters.

Determinants of student retention and entrepreneurial intentions

Prof. Bianca Biagi¹, Prof. Claudio Detotto², Prof. Manuela Pulina¹

¹University of Sassari, Sassari, Italy, ²University of Corsica, Corte, France

S18-S1 University Impacts on the Local and Regional Economy, A5, August 27, 2025, 4:30 PM - 6:30 PM

This study examines the determinants of students' intentions to remain in their university's province after graduation and to pursue entrepreneurship, using an unbalanced panel of 77 Italian universities over the period 2016-2023. Based on data from Almalaurea, we analyze (i) the student retention intention rate, i.e., the proportion of Master's graduates who express willingness to stay in the same province, and (ii) the student entrepreneurial intention rate, i.e., the share of graduates who intend to become entrepreneurs or self-employed workers. These indicators provide valuable insights for regional policymakers, as they reflect the perceived attractiveness of local areas and students' entrepreneurial aspirations. Our econometric analysis considers both environmental factors (e.g., regional GDP, unemployment rate) and university-specific characteristics (e.g., teaching quality, service quality, training availability). Furthermore, we explore differences across academic disciplines. The findings contribute to the discussion on higher education policies and regional development strategies by highlighting the role of universities and local economic conditions in shaping students' post-graduation intentions.

Emerging AI Entrepreneurship Ecosystems in Europe: Are they geographically unbounded?

Prof. Alina Sorgner

¹John Cabot University, Rome, Italy, ²Kiel Institute for the World Economy (IfW), Kiel, Germany,

³Institute of Labor Economics (IZA), Bonn, Germany

S35 The Geography of Innovation: Advancing Knowledge on Industrial Districts and Clusters, E1,

August 29, 2025, 11:00 AM - 1:00 PM

This paper investigates the regional distribution of firm-level AI technology adoption using a novel source of web-scraped data from websites of economically active firms in Europe. Using a narrow definition of AI adoption based on the importance of AI for a firm's organizational identity, it is shown that AI adoption remains a very rare phenomenon in Europe occurring on average in 0.26 percent of all firms. Moreover, about half of all AI adopting firms are young startups that are no older than five years. While AI adopters are often based in highly dense urban areas, often in capital city metropolitan regions, regions with a high share of AI startups among all AI adopters are not necessarily big cities. Regional factors that are associated with the firm-level AI adoption are, for instance, regional demographics (e.g., lower median population age), regional socioeconomic characteristics (e.g., higher GDP per capita, higher total factor productivity (TFP)), regional digital economy (e.g., a higher share of employment in high-tech sectors and digital users), digital and physical infrastructure. Regional factors seem to play a less pronounced role for AI startups than for established AI adopters. Interestingly, the share of AI startups in all AI adopters is higher in regions with a significantly lower TFP. These results point toward emerging AI entrepreneurship ecosystems in Europe, for which geography plays a potentially different role compared to traditional entrepreneurship.

The effects of EU policies on regional cohesion

Ms Merel Roelands¹, Dr Olga Ivanova², Dr Theodoros Chatzivasileiadis¹

¹TU Delft, Delft, The Netherlands, ²The Netherlands Environmental Assessment Agency (PBL), Den Haag, The Netherlands

G20-O1 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 27, 2025, 4:30 PM - 6:30 PM

The EU Cohesion Policy aims to boost economic development in less developed regions of the European Union, thereby promoting regional convergence. Several studies have found proof of positive effects of Cohesion Policy on regional economic development, as well as convergence between European regions. Despite this evidence, disparities in the level of social and economic development across EU regions still persist. A possible explanation of this regional heterogeneity could be that the Cohesion Policy does not work in isolation. There are numerous other EU-level policies and initiatives at play that may or may not influence the economic cohesion between regions. Furthermore, a causal link between EU funds and regional convergence is yet to be established. This study aims to assess the regional economic impacts of several EU policies and their contribution to convergence of European regions. We use a unique dataset provided by the European Commission, covering EU funds across eight policy fields between 2013 and 2024 at the NUTS2 level. In addition, regional demographic and economic data from Eurostat are incorporated. Econometric panel data methods are employed to assess the impact of individual policies on regional GDP per capita. Moreover, the convergence of European regions conditional on the EU funds is investigated. Our findings will contribute to a better understanding of how different EU policies interact and potentially influence convergence. The results will provide valuable insight in the potential trade-offs and synergies between the Cohesion policy and other EU funds and can thereby inform future policy design.

Labour Market Power, Job Security, and the Reform. An analysis for Spain

Dr. Celia Melguizo¹, Dr. Omar Blanco-Arroyo¹

¹University Of Valencia, Valencia, Spain

G23-O1 Labor Markets, Unemployment, Gig Economy, Digital 'Nomads', Amphitheater II - SAKIS
KARAGIORGAS, August 28, 2025, 9:00 AM - 10:30 AM

Labour market concentration has recently drawn significant attention from scholars and policymakers, as it is considered the major source of monopsony power— scenario wherein firms wield authority in setting wages and leverage this power to establish wages and employment at levels beneath those found in a competitive market. Numerous studies have measured labour market concentration across different regions, occupations, and industries in the U.S. and Europe, revealing its significant impact on wages, inequality, employment, and job security. This study examines the relationship between labour market concentration and job security in Spain, with a particular focus on how the 2021 labour reform influenced this dynamic. Spain provides an interesting case, as its dual labour market has historically exhibited one of the highest rates of temporary employment within both the European Union and the OECD. However, the 2021 labour reform, one of the most ambitious in recent history, has played a crucial role in reducing temporary employment. To conduct our analysis, we exploit the microdata from the Universe of Contracts of the Spanish Public Employment Service (Servicio Público de Empleo Estatal, SEPE), a comprehensive dataset containing detailed information on employers, workplaces, contracts, and employees. Our preliminary logistic regression results point out a positive and significant relationship between labour market concentration and temporary employment, suggesting that higher concentration correlates with greater job insecurity. Importantly, our findings also reveal that the 2021 reform has mitigated this effect, reducing the impact of concentration on temporary employment.

Spatial Concentration in the Digital Age: The ICT Sector in Central and Eastern Europe

Dr Zsófia Vas¹, Dr Izabella Szakálné Kanó¹, Dr György Vida¹

¹University of Szeged, Szeged, Hungary

G06-O4 Space and Digital Transformation, A1, August 29, 2025, 2:00 PM - 4:00 PM

With the expansion of digital technologies, understanding spatiality and the role of agglomeration economies is becoming increasingly important, particularly in the information and communication sector. The sector's innovation activities and the relatedness with other industries play a key role in driving digitalization and ensuring sustainable economic growth. Given the significance of digitalization and the ICT sector in catching-up economies, this study analyzes the spatial distribution and economic role of the sector across the regions of Central and Eastern Europe.

The study examines the spatial concentration of the ICT sector and the specialization of NUTS3-level regions, distinguishing capital, intermediate metropolitan, intermediate non-metropolitan and rural areas. The analysis is based on employment data in the period of 2010–2020. The results indicate that despite the progress of digitalization, the ICT sector growth dynamically and remains highly spatially concentrated in the regions of Central and Eastern Europe, particularly in capital regions, while the role of modern business services is also expanding within agglomeration economies. The research confirms the presence of division of labour among different types of regions, highlighting the specialized nature of capital and rural areas, and underscores the need for place-sensitive development policies.

Policy implications of asymmetries in locational determinants of CCI firms

Prof. Josep-Maria Arauzo-Carod¹

¹Universitat Rovira i Virgili, Reus, Spain

G15-O5 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness,
Quality of Life, B6, August 29, 2025, 11:00 AM - 1:00 PM

This paper analyzes the location patterns of firms in the Cultural and Creative Industries (CCIs) across 947 Catalan municipalities. The interest in these industries stems from their potential for job creation, knowledge generation, and enhancing city reputation, both in urban and rural areas. Empirical literature has demonstrated these benefits, making CCIs a relevant focus of study. Catalonia is particularly interesting due to the spatial heterogeneities between urban and rural areas and the widespread presence of CCIs. Specifically, this paper examines 18 CCIs, highlighting their spatial distribution and location determinants. To account for spatial heterogeneities across Catalan municipalities, we apply a Geographically Weighted Regression (GWR), which captures the asymmetrical effects of location determinants across different areas. This approach allows for better-tailored firm entry promotion policies, recognizing that location determinants do not act uniformly across municipalities.

S.A.P.I.EN.T.E. Experimental Test Facility For Full-Scale Testing Of New Configurations Of Collective Thermal Electric Self-Consumption From Renewable Sources.

Mr Ruggero Nissim¹

¹Enea, Roma, Italy

S34 Efficient Buildings and Industrial Processes: Driving the Energy Transition, E1, August 29, 2025,

9:00 AM - 10:30 AM

The European Renewable Energy Directive promotes the adoption of renewable self-consumption strategies for local production and shared consumption of energy. In this paper, the authors illustrate the plant named S.A.P.I.EN.T.E., an experimental facility designed to simulate Collective Self-consumption Groups (CSG) and related experimental tests focused on maximizing self-consumption of locally produced renewable energy. We demonstrate, through experimental tests, the benefits in terms of energy Self-Consumption (SC) and Self-Sufficiency (SS) that such a system architecture can achieve.

S.A.P.I.EN.T.E. installed at the ENEA Casaccia Research Center, is composed of four different sections: energy generation, energy storage, distribution system and energy utilities. A control system based on a programmable logic controller is used to manage energy flows and implement demand side management strategies.

We will show the plant structure, operating logics and control systems. We will demonstrate how the storage systems belonging to such a plant maximize self-consumption of locally produced energy through experimental test results.

We demonstrate effective resource management and control methods to enhance SC and SS in the context of CSG, adopting power to heat and load shifting strategies. We also show how converting electrical power into thermal power by means of a heat pump can enhance the energy coefficients, while also warranting thermal comfort to the CSG users.

Does collaborative place-based work to deter violent crime lead to improved business activity?

Dr. Oana Mihaescu¹, Dr. Niklas Elert¹, Dr. Hans Seerar Westerberg

¹Institute of Retail Economics, Stockholm, Sweden

G19-O1 Urban, Regional and Local Policy Evaluation, G3, August 27, 2025, 2:00 PM - 4:00 PM

Crime is generally assumed to bring significant costs to both the affected individual and society, and the risk of being exposed to crime is argued to cause consumers, workers, and entrepreneurs to change their behavior and operations. Some studies find that the costs of crime for businesses are significant, however other studies argue that there is no clear consensus on the effect of crime on business activity.

To examine the consequences of crime for local business activity we plan to measure the effects of an exogenous shift, namely the implementation of collaborative place-based programs to deter crime. The Swedish National Board of Health and Welfare defines such programs as “comprehensive joint actions at the organizational level for a specific purpose”, which “can occur within and between, for example, units, authorities, and community actors and can involve active exchange of information or planning of joint activities”.

Clarifying whether collaboration programs work and what their effects are is important for future policy-making. In this paper we evaluate the effects of three such programs: BID Sofielund implemented in Malmö in 2014, a Swedish program for focused deterrence called “Stop Shooting”, as well as another type of collaboration program called Effective Coordination for Safety (EST). To identify the effects of these collaboration programs on the performance of the businesses in the areas where they have been implemented, we use the programs as a natural experiment in combination with a regression model based on a difference-in-difference (DiD) approach. To measure business performance, we use an unbalanced micropanel dataset that includes the key figures for all limited-liability companies in Sweden. We then use a DiD methodology to compare the outcomes of businesses in areas where the programs have been implemented with the outcomes of the same businesses, before the implementation time point, and with a group of control businesses. The analysis covers the period 2010 – 2022.

Preliminary results indicate that, while such programs seem to have no effect on the revenues of the firms in the treated areas, there is a significant negative effect on employment. This result could be linked to a series of factors such as stricter regulations and even gentrification processes. From a practitioners’ perspective, it is important to clarify this relationship, because the general understanding and expectation is that reducing crime will inevitably create a more economically prosperous area.

Does Property Tax Redistribution Increase Housing Supply?

Prof. Daniel Felsenstein¹, Dr Xieer Dai²

¹Hebrew University of Jerusalem, Jerusalem, Israel, ²Shenzhen University, Shenzhen, China

G22-O1 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, B6, August 27, 2025, 11:00 AM - 1:00 PM

This paper quantifies the regional and local tax-revenue effects of new residential construction on non-residential land uses and its differential impacts on business tax revenue. Using spatial panel data for Israeli municipalities and spatial cointegration tests, we highlight a long-term spatio-temporal co-movement of residential and non-residential building starts. Fiscal deficit has a significant impact on commercial construction starts but shows almost no effect on residential construction. The paper simulates the regional property tax revenue redistribution effect of transfers from fiscally independent jurisdictions to fiscally-weak and peripherally-located municipalities. Counterfactual exercises show that the redistribution effect promotes housing starts in peripheral areas and discourages non-residential building starts.

Is training helpful in boosting the self-confidence (and professional integration) of young people NEET? Results from a randomized experiment

Prof. Alexis Parmentier¹

¹University of La Réunion, Saint-denis Messag Cedex 9, La Réunion (France)

G19-O5 Urban, Regional and Local Policy Evaluation, G3, August 29, 2025, 11:00 AM - 1:00 PM

Unlike other soft skills, self-confidence has rarely been analyzed in randomized control trials. This paper uses this framework to evaluate the impact of a short but intense training program for building self-confidence in young people not in employment, education, or training (NEET) in a French overseas territory, La Réunion, characterized by one of the highest NEET rates in Europe. The program evaluated took place in 2020-2021 and was attended by 157 young people among 349 volunteers. Using an original questionnaire, the study shows that the training program substantially improved self-confidence. The estimated intention-to-treat effect corresponds to an increase of at least one decile or quintile in the distribution of our self-confidence indicators in the population for more than 90% and 70% of youths in the treatment group, respectively. Heterogeneity analysis by sex demonstrates that these strong positive effects are only statistically significant for women. Cost-effectiveness analysis is also very favorable with regard to other training programs proposed around the world: the effects are at least in the top 20%, while the cost per youth is slightly above the median. Qualitative analysis based on the focus groups and individual interviews with the young people in the treatment group confirms our results. In addition, our paper endeavors to identify the effects of the training program on the young people's professional integration and to determine the extent to which their improved self-confidence helped them find a job or, more broadly, to exit the NEET status 1.5 and 18 months after the program. Differences observed in the employment and NEET rates between treatment and control groups were not significant and could not clearly be attributed to the program.

Twin transition and spatial embeddedness: an empirical analysis on the Italian provinces

Ms Camilla Civardi¹, Ms Lorena M. D'Agostino¹, Prof Claudia Ghisetti¹, Prof Erica Santini², Mr Jacopo Staiano²

¹University of Milano-Bicocca, Milano, Italy, ²University of Trento, Trento, Italy

G19-O6 Urban, Regional and Local Policy Evaluation, G3, August 29, 2025, 2:00 PM - 4:00 PM

The twin transition (TT), which integrates digitalization and environmental sustainability, is increasingly shaping economic and societal transformations. While substantial research examines digital and green transitions at the firm level, fewer studies analyze their adoption at the local level, particularly in Italy's local production systems (LPSs), which play a central role in fostering innovation and growth. This paper addresses this gap by investigating the factors underlying the adoption of digital, green, and twin practices across Italian provinces.

To do so, we exploit a novel dataset, the Place Leaders of Twin Transition in Italian Local Manufacturing Systems (PLOTTI), which integrates data from ISTAT's 2022 business census, the national database of state aids (RNA), and Moody's AIDA business database. PLOTTI allows for an analysis of firm-level adoption patterns and the distribution of public funding across provinces. Our empirical strategy employs a cross-sectional econometric model, incorporating a Herfindahl-Hirschman Index (HHI) to capture the dispersion of public funds, along with additional controls for economic size, industrial specialization, and spatial spillovers.

This study contributes to the growing debate on TT by examining the role of financial support in fostering green and digital transformations at the local level. Given the importance of public interventions in shaping innovation ecosystems, our findings may offer insights for policymakers on the design of funding strategies to enhance sustainable and digital transitions within LPSs.

Impact of industrial development on labor market outcomes: Evidence from regional and micro data

Prof. Burhan Can Karahasan¹

¹MEF University, Istanbul, Türkiye

G02-O1 Regional Growth Models, Competitiveness, and Convergence, B1, August 27, 2025, 2:00 PM - 4:00 PM

Impact of industrial development on local economies has been densely analyzed on the grounds that more industrial economic activity expands local growth and development. While impact of industrialization is examined from economic growth perspective impact of industrialization on labor market deprivations at different layers is relatively less analyzed. In this study, I offer a two-stage analysis to understand the instrumental role of industrial development for fostering job prospects at local and individual level. Empirical evidence is from NUTS-2 level Turkish regions and covers the 2004-2022 period. The first set of analysis questions the impact of industrial production on local unemployment patterns. After controlling for local factors that can affect unemployment and spatial externalities that can create inter-regional spillovers findings confirm that regions with more industrial production tend to have lower unemployment problem. Second set of analysis is from individual level data. We use the Household Labor Force Survey (HLFS) which is supplied at the cross-section basis for the 2004-2022 period. Since HLFS is representative at the NUTS-2 level we are able to merge the regional industrial production data with the individual level survey data. Our findings from probit type micro-econometric models reveal that after controlling for individual heterogeneity those individuals who live in NUTS-2 regions with higher industrial production have less propensity to be unemployed. This finding is robust for the whole sample period with the exception of 2008 and 2009 in which Turkish economy is heavily influenced from the side effects of the global financial crisis. Our combined findings show that influence of industrial development is not bounded at the local level as local industrial development has sizable influence on individuals' labour market deprivations. Overall, these findings remind the necessity of policy action to foster more industrial development, not only to promote local growth but also to combat with the pervasive impact of unemployment problem.

Interregional Trade Estimation in the Iberian Peninsula. A Case for Economic Integration

Mr Daniele Bregoli¹, Mr Marco Ciro Liscio², Dr Paolo Sospiro², Mr Giacomo Arena¹, Dr Ricardo Ferreira⁵

¹Euabout, Brussels, Belgium, ²Polytechnic University of Marche, Ancona, Italy, ³Telematic University eCampus, Novedrate, Italy, ⁴University of Florence, Florence, Italy, ⁵European Commission - DG Regio, Brussels, Belgium

S19 Regional Integration AndEU Macro Regional Strategies, G4, August 29, 2025, 11:00 AM - 1:00 PM

Interregional trade and economic integration play a crucial role in shaping regional economic development and cross-border cooperation. This study focuses on estimating trade flows between NUTS II regions in Portugal and Spain, contributing to a deeper understanding of regional trade dynamics and the economic impact of the Iberian border. Despite the growing body of literature on gravity models for trade estimation, a significant data gap persists in interregional trade statistics, particularly for the Iberian Peninsula. The primary challenge lies in the absence of a comprehensive dataset covering regional trade flows resulting in an overview of intraregional economic integration, necessitating an estimation approach based on transport data and economic indicators.

This research employs a double-constrained gravity model, following Ferreira (2008), to allocate total regional trade flows based on GDP, distance, and export-import constraints. The methodology integrates transport flow statistics, GDP data, and a hybrid classification system to ensure compatibility between trade and transport sector classifications. Additionally, a bi-proportional adjusting algorithm (RAS methodology) is applied to refine the initial estimates and maintain consistency with historical data. Data sources include national and international transport datasets, official trade statistics, and sectoral classifications from both Portugal and Spain.

Preliminary findings indicate that interregional trade flows are heavily influenced by geographical proximity, economic specialization, and border effects, with distinct sectoral variations. The study identifies potential challenges in integrating transport-based trade proxies with official trade data, particularly due to missing historical records and inconsistencies across classification systems. The results provide insights into the effectiveness of gravity models for regional trade estimation and highlight the necessity for improved data collection practices. Future research will focus on refining the model calibration, addressing methodological uncertainties in the RAS adjustment, and assessing the long-term implications of Iberian economic integration.

Regional attractiveness in the era of twin transition: Assessing the impact of green and digital transformations

Prof Vicente Royuela¹, Dr Anastasia Panori², Dr Jordi Lopez Tamayo¹

¹University of Barcelona, Barcelona, Spain, ²Aristotle University, Thessaloniki, Greece

S88-S2 Twin Transition and its Unequal Geography, B2, August 28, 2025, 9:00 AM - 10:30 AM

Regional attractiveness is a concept that encompasses the various factors and characteristics that make a particular geographic area appealing and desirable to individuals. These factors may include economic opportunities, social well-being and quality of life making the concept of regional attractiveness dynamic and multi-layered. Hence, regional characteristics play an essential role in making regions capable of keeping their existing human capital and attracting new forms of activity as well as specific groups of people. Connecting the notion of regional attractiveness to the Twin Transition is essential, as the latter has recently shaped policy discussions and choices within the European context. Thus, it is important to explore how green and digital factors may affect individual choices on spatial mobility, and therefore, their impact on the developmental dynamics of the regions. Research shows that green and digital transitions have significant indirect effects on individual mobility and regional development, often intensifying existing spatial inequalities. The green transition redistributes economic and social assets, leading to the concentration of green technologies, employment, and innovation in regions better equipped for sustainable economic activities, while less developed areas struggle with unemployment, skill mismatches, and brain drain. Simultaneously, the digital transition reshapes accessibility and connectivity, influencing migration patterns, yet rural communities often face barriers such as limited digital skills or resistance to change. These shifts affect regional attractiveness, as urban and capital regions that swiftly adopt green policies and digital infrastructure attract more talent and investment, further widening the gap with rural or declining industrial areas. Without effective integration of the green and digital transformations, rising inequalities between EU regions in terms of their ability to attract human capital will become a significant barrier for achieving even developmental opportunities, leading to the emergence and persistence of lagging regions.

The Regional Attractiveness Index aims at exploring how traditional, digital, and green factors jointly determine regional attractiveness. The results indicate that northern and western Europe generally outperforms southern and eastern regions across traditional, digital, and green dimensions. Predominantly urban regions consistently rank higher than rural ones, both in traditional factors (employment opportunities, institutional quality) and emerging domains (digital connectivity, sustainability initiatives). Moreover, men seem to be more influenced by digital opportunities, whereas women often prioritize environmental sustainability and quality-of-life factors. Finally, sensitivity tests show that overweighting digital or green factors can enhance some regions' standing while reducing others', further illustrating the context-dependent nature of regional attractiveness.

Assessing the Urban Impacts of an Industrial Rock Salt Mining Disaster: The Case of the City of Maceió, Brazil

Dr. Raul Silveira Neto¹, Mr Carlos Góes¹, Dr. Mary Arends-Kuenning²

¹Federal University of Pernambuco, Recife, Brazil, ²University of Illinois at Urbana-Champaign, Urbana-Champaign, United States

G08-O2 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, Amphitheater I - SAKIS KARAGIORGAS, August 27, 2025, 2:00 PM - 4:00 PM

This paper examines the economic impacts of an urban disaster in the city of Maceió, Brazil triggered by industrial rock salt mining on firms and families. The disaster occurred in 2018 with the subsidence of the ground in some neighborhoods near the mining sites, located in the city of Maceió, capital of Alagoas, a northeastern state in Brazil. As a result, these neighborhoods had to be abandoned, with the relocation of businesses and families. The event can be considered the largest natural resource extraction disaster to occur in a Brazilian capital in the 21st century. Despite its relevance, however, its economic and welfare consequences have not yet been explored in the literature. The present study aims to fill this gap. Using a difference-in-differences approach and microdata, we first assess the short-term, micro-local impacts on employment in affected areas, drawing on annual employer-level data to capture labor market disruptions. We then analyze household-level data from low-income populations to explore how the disaster affected household labor market outcomes. Finally, we evaluate the broader economic consequences for the municipality by applying synthetic control methods to data from the Continuous National Household Sample Survey, constructing a counterfactual scenario to assess Maceió's economic performance in the absence of the disaster. Our findings reveal significant labor market impacts and business disruptions in Maceió due to the disaster. Firms in affected areas experience a substantial decline in employment levels over time and a heightened risk of closure, particularly in directly impacted zones. Sectoral analysis shows that the service sector was the hardest hit, with reductions in both employment and business survival. While business closures in the industrial sector increased, employment levels remained stable. The agricultural sector shows no significant effects. Among low-income households, we found a significant reduction in income from work in larger households (with more than five members), while no substantial effects were observed in smaller households. Conversely, income and food expenditure increased after the disaster, likely due to support from disaster relief funds. Additionally, the likelihood of child labor decreased over time following the disaster shock. These findings offer key insights into the labor market effects of disasters, emphasizing the need for robust policy responses as climate change increases the likelihood of such events. The study highlights the importance of economic resilience planning and targeted policies for vulnerable urban areas.

Public lighting and the sense of safety in urban and rural areas in Brazil

Dr. Gustavo Moreira¹, Ms. Maria Eduarda Antonioli¹

¹University of Sao Paulo, Piracicaba, Brazil

G10-O5 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 29, 2025, 2:00 PM - 4:00 PM

Fear of crime is a multidimensional phenomenon that extends beyond actual crime rates, affecting individuals' well-being, mobility, and trust in public institutions. In Brazil, despite its significance, the perception of safety remains underexplored in empirical research. Understanding the factors shaping this perception is essential for designing effective policies that go beyond crime prevention to improve overall security and quality of life.

Perceptions of safety are influenced by personal experiences, neighborhood conditions, and institutional trust. Studies show that women, the elderly, ethnic minorities, and economically disadvantaged populations tend to experience higher levels of fear due to heightened vulnerability. Urban and rural areas face distinct challenges: while urban settings struggle with high crime rates, rural communities often experience insecurity due to geographic isolation, limited police presence, and inadequate security policies.

A key factor influencing safety perceptions, particularly at night, is the quality of public lighting. According to the Crime Prevention Through Environmental Design (CPTED) framework, well-designed urban spaces can deter crime and enhance feelings of security. Public lighting improves visibility, strengthens informal social control, and fosters greater community engagement. CPTED is based on principles such as natural surveillance, territorial reinforcement, access control, and maintenance and image, all of which contribute to safer public spaces.

This study explores the impact of public lighting on individuals' perception of safety. Its specific objectives are: i) To analyze whether public lighting affects the perception of safety among individuals in urban and rural areas in Brazil. ii) To investigate how individual characteristics—such as gender and race—combined with lighting quality influence safety perceptions.

Empirical evidence suggests that improved public lighting reduces criminal opportunities, enhances surveillance, and increases public confidence. While some studies debate its direct effect on crime reduction, most findings support its role in lowering fear and encouraging public space usage. This research utilizes secondary data from the Brazilian Institute of Geography and Statistics (IBGE, 2021) and applies probit models to estimate the impact of public lighting on perceived safety.

The findings will contribute to urban planning and security policies by reinforcing the role of environmental design in shaping safety perceptions. Addressing disparities in lighting infrastructure can foster safer, more inclusive environments, particularly for vulnerable populations. This research highlights the need for integrated strategies combining urban design, public policy, and social initiatives to promote safer communities in both urban and rural settings.

Sustainable Mobility Practices in India through the Smart City Mission

Prof. Lakshmi Sivaramakrishnan¹, Prof. Pratima Rohatgi, Prof. Sumana Bandyopadhyay¹

¹Jadavpur University, Kolkata, India

G22-O6 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, G2, August 29, 2025, 2:00 PM - 4:00 PM

India's Smart City Mission (SCM) is a flagship initiative to promote sustainable mobility through technological innovation, urban planning, and green infrastructure. The mission focuses on improving urban transport, reducing congestion, and enhancing environmental sustainability. A large share of the country's urban population relies on sustainable mobility modes like walking, cycling, and public transport. But in reality, commuting in these modes is not equitable and popularly used by the urban poor. The problem lies in the fact that most cities do not have footpaths or cycling tracks and most of the roads have multiple uses at different times of the day. Public transport still is outdated using polluting fuels and is very poor to meet the population's demands.

Most of the transport and communication infrastructure development in metropolitan cities is geared towards satisfying personalized mobility modes, particularly private cars, and automobile sales are rapidly increasing. The problem of mobility increased in the small towns of India where fast and slow-moving vehicles use the same transport lane. The number of road accidents are also increasing in urban areas.

Smart mobility is becoming increasingly crucial for urban transformation. By integrating advanced technologies with transport infrastructure, smart mobility can connect service providers and end-users, creating a seamless, accessible, and inclusive transport ecosystem that improves sustainability and safety across modes.

The Government of India has taken several initiatives like Smart City Mission, AMRUT and National Infrastructure pipe line. These initiatives propose to realign the mobility patterns in Urban India focusing on sustainability and resilience City Mission, AMRUT and the National Infrastructure Pipeline. Thus cities can efficiently support their growing populations while minimising environmental impact.

This paper will look into the projects taken up in different cities under the SCM and how far they have improved the mobility in Indian cities. It will also focus on the challenges and way forward in the successful implementation of this programme.

The Status of Regional Bioeconomy: Developing a Multi-Criteria Assessment (MCA) Framework to Evaluate Regional Potential in the EU of 27

Mr Panagiotis Koronaio¹, Dr Georgios Maroulis², Prof. Panagiotis Kalimeris³, Prof. Antonios Rovolis⁴

¹Institute Of Urban Environment And Human Resources, Panteion University, Kallithea, Athens, Greece, ²Institute Of Urban Environment And Human Resources, Panteion University, Kallithea, Athens, Greece, ³Department of Economic and Regional Development, Panteion University of Athens, Kallithea, Athens, Greece, ⁴Department of Economic and Regional Development, Panteion University of Athens, Kallithea, Athens, Greece

S53 Promoting Circular Bioeconomy at the regional level. Potentials and challenges, Amph 2, August 28, 2025, 9:00 AM - 10:30 AM

Bioeconomy is presented as a promising alternative framework towards a more efficient and greener economy based on the replacement of non-renewable and fossil resources with renewable ones. In a nutshell bioeconomy, based on the European perception of the term, could be described as an economic framework operating with the use of biomass as an input to fulfil the economy's needs, such as food, feed, materials and energy (Proestou et al., 2024). The transition to a circular and sustainable bioeconomy is a key priority for the European Union which identifies bioeconomy as the vehicle towards achieving the European Green Deal. As a result, the first European Bioeconomy Strategy established in 2012, aimed to harmonize economic with environmental and social related goals (European Commission, 2012). In 2018, the European Bioeconomy Strategy was updated by adding new parameters in the framework and emphasizing the cross section of bioeconomy with circular economy, as well as the environmental related topics and the importance of the regions (European Commission, 2018).

The importance of regions in the implementation of European Union's bioeconomy strategy remains crucial for the transformational process of the linear economy (European Commission, 2022). The transformation process could be challenging, especially in regions with carbon-intensive economic activities, such as coal mining, intensive agriculture, forestry, and fishery sectors. Towards this direction, the Horizon Europe "BIO2REG" project (<https://bio2reg.eu/>) funded by the European Union, aspires to design and implement a region-specific blueprint for assessing the EU's regional transition to bioeconomy. Towards this objective, a Multi-Criteria Assessment (MCA) framework was designed to identify the status of bioeconomy in the EU regions. The presented study is based on the methodology followed in a prior effort to classify the status of the regions of the 8 countries participating in the "BIO2REG" project and is further extending the analysis by including the total 244 NUTS II (Nomenclature of Territorial Units for Statistics) regions of the EU-27.

The scope of public participation in rail infrastructure projects in Germany

Ms Maria Levints¹

¹German Centre For Rail Traffic Research, Bonn, Germany

G13-O1 Social Capital, Territorial Capital, Institutions and The Commons, F5, August 27, 2025, 11:00 AM - 1:00 PM

Recent observations indicate an augmentation in the implementation of participation processes in mobility projects within Germany, which is further legally anchored. However, dynamics associated with citizen participation have the potential to exert a dual impact on the planning process for a sustainable mobility system, both positive and negative. A previous project investigated these dynamics, revealing that the composition of participants can influence the planning outcome and citizens' satisfaction with it. A notable aspect of rail transport is the lack of transparency in the selection of actors during the public participation procedures in planning approval processes. This prompts the following inquiries: 1. How is the selection process for actors in rail infrastructure projects conducted and what is its extent? 2. What impact does this selection have on transport planning?

Based on Ronald S. Burt, the stakeholders involved in individual infrastructure projects are understood in this work as networks that revolve around a person responsible for stakeholder management. An ego-centric network analysis is conducted to reveal the interpersonal networks of the groups involved in the participation process of an individual stakeholder manager. The network survey is based on the Stakeholder Participation Assessment Framework (SPAF), which divides the participation process into two phases. In the initial phase, the "why," "who," "when," "how," and "costs" are analyzed. The survey is structured in a manner that ensures the network recording also reveals the level of social capital of the corresponding network, thereby enabling the classification of the networks to be compared. In the second phase of the SPAF, the effects of the identified participation measures are evaluated. To this end, a survey of stakeholder managers is conducted to assess the impact of networks on transport planning in the rail infrastructure sector. The objective of the analysis is to present the distribution of stakeholders involved in rail infrastructure projects and to evaluate their social capital. The disclosure of participation networks aims to facilitate a comparative analysis, which will be discussed in the context of the effects of network compositions on transport planning. The findings of this paper are intended to contribute to an evidence-based assessment of public participation in the rail transport sector from a planning perspective, with the aim of promoting planning that supports the transport sector towards sustainable transport governance.

To Be or Not to Be Quoted: Are More Diverse Research Teams More Cited? An analysis in the Social Sciences

Prof. Barbara Martini¹, Dr Martina Dal Molin, Dr Chiara Leggerini, Dr Miron Tequame

¹Università di Roma Tor Vergata, ROMA, Italy

G24-O2 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 28, 2025, 4:30 PM - 6:30 PM

The literature on the effect of diversity in scientific team and publication quality gap and citation impact is inconclusive depending on the dataset, field of study and country of analysis. This paper tries to answer part of this puzzle by studying the role of gender diversity on publication quality, proxied by the number of citation impact in the field of social sciences. We use a novel dataset extracted from Scopus and merged with the Scimago Journal Ranking to include information on journal metrics. Our dataset consists of around 145 000 peer reviewed articles from 155 journals in Social Sciences, published between 2010 and 2025 and combined with indicators that assess scientific domains, and hence allowing comparison of journals and different indicators of journal prestige. We implement a novel methodology that estimates the association between gender diversity and citation impact, based on a two-step procedure. We first predict citation by factors that do not depend on gender, regressing citation on journal metrics. In this step we use the residuals, interpreting them as factors that account for the part of citation that are not explained by journal metrics. In the second step, we use such quartile distribution of the residuals in a probabilistic/logistic model to study the relationship between residuals and gender team diversity. Our measure of gender diversity is based on five levels of diversity, as measured by 5th-quantile distribution of the percentage of men among the authors. We find significant difference across gender diversity on how such residuals are predicted. We find the reverse for residuals that are worse predicted by journal metrics: women have 0.24 marginal effect of predicting these residuals, that depend least on metrics, while men have 0.30. Our results suggest that women are set to a higher bar when it comes to publication, i.e. most of their citation is explained by factors that are related to journal metrics, indicating that women's citations are mostly explained by journal metrics. We also find that the relationship is reversed when we increase the composition of men in the authors group, as the number of men increase in the group, their likelihood of predicting high levels of residuals increases.

The influence of flexible working arrangements on the change of residence in the Lombardy region

Mr Luca Alfieri¹, Prof. Ilaria Mariotti, Prof. Federica Rossi

¹Politecnico Di Milano/University of Tartu, Tallinn, Estonia

S16 Changing Patterns Of Spatial Mobility During The Twin Transition, A1, August 27, 2025, 4:30 PM - 6:30 PM

The paper explores the probability of knowledge workers (KW), living in Lombardy, to relocate in the medium-term (5 years), considering the impact of flexible working arrangements (FWA) and "twin transitions". Data come from a MOBI-TWIN Horizon project survey involving 566 Italian workers and from the REMAKING Horizon project.

The survey focused on how much importance KW (including remote workers) place on aspects of the twin transition. These aspects include good internet access, public e-services, online shopping options, support for FWA, clean air, renewable energy use, green spaces, etc.

The results of the ordered logit model show that the main determinants for residential relocation are: (i) being a young and cisgender man; (ii) having less than 2 children; (iii) experiencing low life satisfaction in the current location, (iv) and high commuting time. The willingness to change residence is connected to FWA, and the remote working support offered by the destination area, while the green transition does not show any significance. Furthermore, a cluster analysis was conducted to identify distinct typologies of 370 respondents based on their relocation preferences, revealing specific profiles of workers who are more inclined to move to particular types of locations, such as capital metropolitan regions, large cities, small towns, and rural villages.

Unpacking Rural Differentiation Drivers, Tendencies and Outcomes, Towards A Rural Diversity Compass?

Dr. Henk Oostindie¹, Ms Bettina Bock¹

¹Wageningen University-rural Sociology, 6701 Ca Wageningen, Netherlands

S55-S2 Taking into Account Diversity to Shape just Rural Futures: Novel Indicators for Resilient and Inclusive Development, Amph 2, August 27, 2025, 2:00 PM - 4:00 PM

Unpacking Rural Differentiation Drivers, Tendencies and Outcomes, Towards A Rural Diversity Compass?

Abstract

Recently, Cattivelli (2023) characterized EU's rural classification attempts by distinguishing two contrasting orientations. A first one concentrating on EU-level data comparability and replicability. And a second one based on multi-criteria analysis with the intention to take rural differentiation forces more explicitly and comprehensively into account. As argued, the second one is methodologically much more difficult to align with EU-level comparability and replicability aspirations due to various data-availability limitations, such as the lack of data time series and/or data-collection updates. In short, two orientations with their specific pros and cons in terms of explanatory power versus data-needs and comparability and replicability aspirations. In this paper, we will present a prototype Rural Diversity Compass with the principal aspiration to capture the contemporary multiplicity of meaningful rural differentiation drivers, tendencies and outcomes. After a brief introduction on multi-spatiality and multifunctionality as two of its key theoretical building blocks, this Rural Diversity Compass will be presented as an analytical tool that distinguishes four key rural functionalities and that further characterizes these functionalities with the help of 24 components; together these functionalities and components aim to underscore their increasingly place-specific interaction patterns, balances and disbalances and -therefore- rural policy challenges. In that way the prototype Compass intends to shed extra light on the nature and interdependencies of EU's rural policy objectives as formulated in its Long Term Vision for Rural Areas. Empirically this will be illustrated by Dutch rural policy dynamics, including contrasting stakeholder views on the future of agriculture, food and nature and its accompanying rural functionality (re-) balancing concerns and controversy. The final section of this paper returns to Cattivelli's distinction between two rural classification orientations. It concentrates on the question if the prototype Compass could be used in ways that recognize their specific pros and cons. As suggested, this may be done by moving towards multi-layered rural mapping. That is: (further) acknowledging the contemporary multiplicity of rural differentiation drivers, tendencies and outcomes whilst simultaneously recognizing their differentiating relevance in concrete rural settings, as -at least partly- reflected in the availability and absence of data. Thus, the Rural Diversity Compass may serve as guidance for multi-layered rural mapping that aspires to complement and deepen EU's rural-urban continuum-based classification efforts by concentrating on rural functionality interaction patterns and associated rural needs-strengths profiles.

Exploring the Water Footprint of Consumption Patterns in the European Union: The Role of Dietary Changes

Ms Cristina Margalejo¹, dr Rosa Duarte Pac¹, dr Cristina Sarasa Fernandez¹

¹Universidad De Zaragoza, Zaragoza, Spain

G12-O5 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 29, 2025, 2:00 PM - 4:00 PM

The greater visibility and notoriety of the consequences of climate change on natural resources and the physical environment in which we live have prompted heightened citizen concern and a stronger commitment on the part of the authorities to mitigate environmental degradation. This has led to the establishment of various international commitments aimed at guaranteeing sustainable development that culminate in the carbon neutrality of the European continent in the second half of the century, such as the Paris Agreements and the Sustainable Development Goals (SDGs) of the 2030 Agenda. Recent literature has focused its attention on the role of households as significant drivers of environmental impacts, identifying them as pivotal actors when designing environmental policies where shifts in demand contribute to reducing environmental footprints and fostering the development of sustainable and resilient economies.

This provides the context for our research, which seeks to explore the relationship between the current food consumption patterns of European households and their water impact. To achieve this, we develop an environmentally extended multi-regional and multi-sectoral input-output model for all the countries of the European Union using Exiobase. Furthermore, the study examines the environmental impacts of two alternative scenarios involving changes in dietary patterns, which are considered a priori healthy, recommendable, and sustainable—specifically, the Mediterranean diet and the nationally recommended diets.

The results indicate that adopting a Mediterranean diet across Europe would lead to an increase in the water footprint, with Eastern European countries experiencing the most significant rise. In contrast, the country-level recommended scenario would reduce the footprint in the EU as a whole, particularly in more developed nations such as Luxembourg and France, where the reduction would be most pronounced.

Tourism Acceptance of the Austrian Population

Ms Rebecca Daul¹, Ms Nina Niederhametner¹

¹Statistics Austria, Vienna, Austria

S58-S1 Measuring the Social Impact of Tourism in the European Union, E12, August 27, 2025, 2:00 PM
- 4:00 PM

The measurement of the tourism acceptance by Statistics Austria represents a significant step forward in recording the social dimension of tourism in Austria. Building on the amendment of the Tourism Demand and Acceptance Statistics Ordinance 2024, the new survey aims to capture the perceptions and attitudes of the Austrian resident population towards tourism. The data on the perceived impact and importance, the perceived volume and the financial dependence of people on tourism closes a key gap in existing tourism statistics, which have so far primarily considered economic indicators. The paper and presentation focus on methodological principles such as the survey procedure, sampling and the design of the questionnaire, which were optimised in advance by means of a comprehensive pre-test. The survey is carried out as a supplementary survey to the travel behaviour survey conducted on the basis of Regulation (EU) No. 692/2011 of the European Parliament and of the Council and is based on a proportionally stratified random sample of the Austrian resident population aged 15 and over. Around 3 000 computer-assisted web interviews are carried out each quarter, resulting in an annual net sample of 12 000 people. The results are weighted, extrapolated and converted into descriptive statistics and the tourism acceptance score. In addition, innovative approaches such as a small area estimation model are used, which enables detailed estimates to be made at municipal level. The results of this survey not only provide transparent insights into the social impact of tourism, but also form the basis for evidence-based measures and strategies for sustainable tourism development. Austria is thus setting an international example for the integration of social sustainability aspects into tourism statistics.

EU Cohesion Policy and Regional Economic Development: A Regression Discontinuity Analysis

Mr Federico Aresu¹, Prof Raffaele Paci¹, Prof Emanuela Marrocu¹

¹Università Degli Studi Di Cagliari, CRENoS, Cagliari, Italy

S38-S4 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 28, 2025, 9:00 AM - 10:30 AM

Cohesion Policy (CP) is a cornerstone of the European Union's strategy to promote economic convergence among its regions by channeling resources through the European Regional Development Fund and the European Social Fund. These investments target innovation, infrastructure, and human capital, particularly in areas with lower income levels. While traditional analyses often rely on broad-based growth regressions, recent studies have shifted toward causal frameworks such as the Regression Discontinuity Design (RDD).

This paper provides a novel assessment of CP's impact on regional growth over the period 2008–2023 by incorporating two key methodological innovations. First, it employs the extended RDD approach proposed by Cerqua and Pellegrini (2018) to explicitly account for the intensity of CP funding, recognizing that expenditure flows frequently deviate from formal programming timelines due to the “n+2” and “n+3” rules. Relying on annualized regional data from the Directorate-General for Regional and Urban Policy, we capture the actual distribution of funds rather than relying on nominal allocations. Second, this study acknowledges that CP represents only a fraction of total investment in most regions; hence, we integrate other sources of regional capital accumulation into the analysis. We segment the 2008–2023 period into three sub-phases—encompassing the global financial crisis, the post-crisis recovery, and the onset of the COVID-19 pandemic—to examine how CP performs under varying macroeconomic conditions. Moreover, we employ a four-year lag for CP expenditures, thus focusing on medium- to long-run effects rather than immediate impacts. Our specification includes controls for human capital, technological capacity, institutional quality, and population density.

Electoral swings amidst globalization pressures. Insights from Greece.

Dr. Nikolaos Terzidis¹

¹RUG - Faculty of Economics and Business, Groningen, The Netherlands

S77 The Geography of Political and Life Discontent, G3, August 27, 2025, 11:00 AM - 1:00 PM

This paper studies the role of trade globalization approximated by imports from China at the local level in shifting the electoral dynamics in Greek parliamentary elections over the 1996-2023 period. Accounting for time invariant unobserved confounding factors, our preliminary results depart from the political polarization impact from globalization; instead, we indicate that import competition is correlated with a shift towards extreme right parties, at the expense of extreme left ones. Using a more nuanced classification of political parties, we document positive relationships between trade exposure and support for both communist-socialist and social democratic parties, as opposed to a negative correlation with Christian democratic parties.

Falling into the regional development trap: The role of regional economic resilience in EU

Prof. Vinko Mustra¹, Prof. Blanka Šimundić¹, prof. Zvonimir Kuliš

¹Faculty Of Economics, Business and Tourism University Of Split, Split, Croatia

G01-O1 Urban, Regional, Territorial and Local Resilience, B4, August 27, 2025, 11:00 AM - 1:00 PM

The concept of the regional development trap has recently gained recognition in the literature, identifying regions that struggle to sustain economic dynamism relative to their national and European peers (Iammarino et al., 2020; Diemer et al., 2022; Rodríguez-Pose et al., 2024). A regional development trap occurs when a region experiences persistent stagnation in income, productivity, and employment, struggle to sustain economic dynamism relative to their national and European peers (Iammarino et al., 2020; Diemer et al., 2022). While prior researchers have identified the structural and institutional determinants of development traps (Iammarino et al., 2020; Diemer et al., 2022), the relationship between these traps and a region's capacity for resilience during turbulent periods remains underexplored.

Understanding the dynamics of regional development traps is crucial, as their persistence can lead to widening territorial disparities, economic discontent, and long-term stagnation (Iammarino et al., 2020; Diemer et al., 2022; Rodríguez-Pose et al., 2024). Without effective interventions, development-trapped regions risk falling further behind, exacerbating socio-economic inequalities and fueling dissatisfaction with national and EU-level policies (Rodríguez-Pose et al., 2024).

This paper addresses this gap by investigating how regional economic resilience influences the likelihood of falling into or escaping a development trap. A region's ability to withstand, adapt to, and recover from economic shocks has significant implications for its long-term development trajectory. This issue has become even more pressing as we are experiencing periods of more frequent and intense shocks—ranging from financial crises and trade disruptions to pandemics and geopolitical conflicts—placing additional strain on regional economies. In this context, resilience plays a preventive role by helping regions avoid stagnation and a corrective role by facilitating recovery for those already trapped.

Our empirical analysis of NUTS 2 regions in the EU finds that higher levels of economic resilience represent a significant positive determinant for escaping a regional development trap. These findings highlight the need for policymakers to adopt forward-looking strategies that enhance regional resilience rather than relying solely on remedial policies. Strengthening resilience can serve as a crucial mechanism to counteract the growing divide between dynamic superregions and left-behind areas in Europe, helping to prevent long-term economic stagnation and the rise of territorial inequalities.

Domain importance in well-being frameworks: a Gradient Boosting Quantile Regression approach

Ms Marije Kooistra¹, dr. Richard Rijnks¹, prof. dr. Aleid Brouwer¹

¹University Of Groningen, Groningen, The Netherlands

S86-S1 Rethinking Economic Growth in Regional Science: on New Narratives and Indicators, G4,
August 27, 2025, 2:00 PM - 4:00 PM

Beyond-GDP frameworks are gaining traction as policymakers increasingly prioritize well-being and quality of life over material wealth. While research has explored the relationship between well-being domains and life satisfaction, their relative importance is often unknown (Clark, 2018; Samavati & Veenhoven, 2024). This study addresses this gap by assessing how different well-being domains contribute to life satisfaction across the distribution. Using the broad prosperity framework commonly used in Dutch policymaking, we analyze the relative importance of seven domains (CBS, 2023). To account for variation across the distribution, we employ quantile regression and stratify by age groups. Additionally, we make a methodological contribution by applying Gradient Boosting, a machine learning approach which handles non-linearity and multicollinearity well and was shown to be promising for wellbeing research (Oparina et al., 2025).

Using 2024 survey data (n=5409) from two Dutch provinces, we found that some domains are indeed more important than others. There is fairly limited variation in the order of domain importance across age groups and across the distribution of life satisfaction and that GBQR (Gradient Boosting Quantile Regression) has both advantages and disadvantages compared to linear regression in explaining life satisfaction.

Our results indicate that some domains are consistently more important than others, with health—particularly mental health—emerging as the most significant factor. This highlights the necessity of accessible mental health services. Material wealth ranks fifth in importance, following labor and leisure (which include satisfaction with work, daily activities and free time), social cohesion, and housing. The remaining domains each explain less than 5% of the variance in life satisfaction. Domain importance is consistent across quantiles, meaning that in general what is important for those at the lower end of the distribution is no difference in importance from those at the top end. Overall, the GBQR model preforms well with the pseudo R-squared exceeding 0.5 at some quantiles. At the extreme quantiles it is, however, outperformed by linear regression. The models for individuals under 35 and those aged 35–55 exhibit the highest explained variance.

Our main contribution is the improved understanding of the dynamics of wellbeing frameworks. While it provides empirical backing for domain weighting in wellbeing monitoring frameworks, it also provides arguments against this practice. Variations in relative importance suggest that weighting domains based on mean importance may misrepresent certain groups, particularly younger individuals.

Land use rights restrictions and deforestation: evidence from Vietnam

Prof. Giuseppe Maggio¹

¹Università Degli Studi Di Palermo, Palermo, Italy

S76 Innovative Economic Policy Approaches in the era of transformations. Topics, Data, and Methods,
D1, August 29, 2025, 2:00 PM - 4:00 PM

This article investigates the unintended consequences of land use right restrictions on deforestation in Vietnam, shedding light on a crucial yet underexplored aspect of land tenure rights that applies to several contexts. While an extensive literature studies the economic and environmental impacts of tenure security and transfer rights, limited attention has been given to government-imposed restrictions on land use rights. The objective of this study is to understand how land use right restrictions affect the opportunity cost of forest clearing. The study focuses on Vietnam, where a significant portion of agricultural land is compulsorily dedicated to rice cultivation under the Rice Land Designation Policy (RLDP). This policy, enforced at the local level, sets specific targets for rice cultivation, effectively restricting land use rights. The analysis takes advantage of a unique two-wave panel dataset on land use at the commune level, obtained by merging two Vietnam rural censuses covering 56 million individuals with geospatial information on tree cover loss, and geospatial information on the exact land designed to be cultivated under rice according to the RLDP. Our findings reveal a strong nexus between cropland expansion and tree cover loss, with the relationship being more pronounced in communes subject to land use constraints imposed by RLDP. When cropland expansion occurs in areas with land use restrictions, the impact on tree cover loss is significantly higher. Access to markets appears to mitigate the detrimental effect of cropland expansion under these restrictions, suggesting that economic opportunities in urban areas may deter farmers from expanding cropland at the expense of forests. With Vietnam experiencing substantial deforestation, this research provides insights that can inform policies aimed at reducing deforestation levels.

Glowing coals of the stake: Can witch-hunts help explain regional gender inequalities?

Prof. Alina Sorgner, Prof. Fabrizio Conti¹

¹John Cabot University, Rome, Italy, ²Kiel Institute for the World Economy (IfW), Kiel, Germany,

³Institute of Labor Economics (IZA), Bonn, Germany

S27-S2 Gender Equality in Regions in Europe and Beyond, D12, August 29, 2025, 9:00 AM - 10:30 AM

This paper investigates the relationship between the spread of witch-hunts in Europe in the early-modern period and contemporary regional gender inequalities in European regions. Using a comprehensive dataset on witch trials that we merge with contemporary regional data on gender-related socio-demographic outcomes, we reveal a significant relationship between witch-hunts and the contemporary level of gender inequalities in the NUTS3 European regions. Regions that witnessed the “witch craze” in the past tend to be significantly different from regions without such an experience regarding the sex ratio and several fertility indicators. Moreover, we show that the characteristics of witch-hunts, for instance, in terms of their intensity and severity, but also their duration and timing, play a role in explaining the regional variation in gender outcomes. In addition, the gender bias in the persecutions for witchcraft toward the male or the female sex seems to be differently related to regional gender outcomes nowadays. Population in regions that experienced witch-hunts have a significantly lower level of egalitarian attitudes toward the role of women in society. These relationships are robust to the inclusion of other regional characteristics that may impact gender inequalities. Using individual-level data for Germany, we further show that gender gaps in employment and earnings are wider in regions with the legacy of witch-hunts. We argue that these observations provide indications of a long-term persistence of local social norms related to gender roles in a society.

Regional inequalities in a future of political cooperation or fragmentation

Prof. Roberta Capello¹, Prof. Andrea Caragliu¹, Dr. Roberto Dellisanti¹

¹Politecnico di Milano - DABC, Milano, Italy

S38-S6 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 29, 2025, 9:00 AM - 10:30 AM

Regional disparities in Europe remain a persistent challenge, as economic and social imbalances endure despite decades of policy intervention. The divide between wealthier and less developed regions continues to shape economic stability, labour mobility, and political cohesion. Today, geopolitical tensions have become a critical factor in regional development, as global economic shifts, security concerns, and evolving alliances influence trade, industry, and investment. These external pressures, combined with internal divisions within Europe, increase the risk of economic fragmentation, potentially exacerbating inequalities between core and peripheral regions.

This paper explores two alternative scenarios for the future of European regional disparities, depending on the resolution of current geopolitical tensions. In a Cohesive EU in an Integrated World, the end of geopolitical conflicts restores global economic integration, strengthening EU unity and positioning the bloc as a more cohesive and influential player on the world stage. Conversely, in a Nationalistic EU in a Bipolar World, the resolution of these conflicts leads to a reassessment of globalisation, resulting in a bipolar geopolitical order where democratic and autocratic blocs compete. Under these pressures, the EU becomes more fragmented, with national interests taking precedence over collective action.

Using the MASST model, we simulate GDP growth at the NUTS2 level for all EU member states and the UK under these two scenarios. Our findings indicate that resolving geopolitical tensions leads to overall economic expansion compared to a reference scenario. However, the impact on regional inequalities is complex. In the Cohesive EU scenario, disparities between countries are lower compared to the Nationalistic EU, as lagging economies—particularly in Eastern Europe—converge with more advanced regions. Within countries, however, inequalities persist, as economic gains remain concentrated in core regions benefiting from agglomeration economies. While European cohesion reduces gaps among countries, they do not necessarily address intra-national disparities, highlighting the intricate dynamics of regional economic development.

Nearshoring and Spatial Functional Income Inequalities

Prof. Roberta Capello¹, Dr. Roberto Dellisanti¹, Prof. Giovanni Perucca¹

¹Politecnico di Milano - DABC, Milano, Italy

S08 Regional Impacts of Global Value Chains Reorganization, E14, August 29, 2025, 2:00 PM - 4:00 PM

Nearshoring, defined at an aggregate level as a situation in which an economic system utilises a greater proportion of inputs produced by nearby areas compared to those produced in faraway areas, risks becoming an important source of functional income redistribution. The social and spatial concentration of capital, in fact, amplifies the impact of nearshoring-induced profits, disproportionately benefiting a small group of capital owners and core territories. This dynamic leads to faster growth in capital returns compared to labour wages, exacerbating income inequalities both among individuals and across regions. Such an issue has never been tackled in the literature before at regional level, neither conceptually nor empirically. This paper fills such a gap. It elaborates on the effects of nearshoring on the remunerations of production factors and provides empirical evidence testing the expectations on the European regions. Results witness that functional income redistribution in favour of capital owners is higher in regions where capital is concentrated, strongly affecting intra-regional functional income inequalities. Within such regions, core areas, where financial capital is concentrated, register the highest increase in income disparities, witnessing that nearshoring can become a source of regional disparities. If this is the case, regional structural policies mitigating the worsening of income disparities are necessary if nearshoring further develops in Europe through the new trade policy as the “Open Strategic Autonomy” advocated by the EU.

When specialization becomes repetition: The urban division of labor and routinization of tasks

Mr Peter Njekwa Ryberg¹

¹Jönköping International Business School, Jönköping, Sweden

S26 New Insights Into Agglomeration (Dis)Economies: Effects and Underlying Mechanisms, B6, August 28, 2025, 9:00 AM - 10:30 AM

Previous research has shown that routine-based tasks are particularly susceptible to automation-induced structural change. But recent technological advancements in artificial intelligence (AI) give rise to the question whether non-routine tasks, requiring creative and social skills, may also be automated. In particular, white-collar jobs in the service sector. Cities have traditionally been engines of economic growth and employment, but their specialized division of labor may paradoxically increase job vulnerability to automation. Because as work, be it non-routine or not, is broken down piecemeal into smaller subtasks, the room for automation widens. Do cities exacerbate this development? This study examines the relationship between urban labor division and the susceptibility of occupations to automation. The hypothesis is that urban specialization leads to an increased routinization of tasks, making these jobs more prone to displacement by automation. The study applies a task-based framework to analyze changes in job task composition. Data from the Survey of Adult Skills (PIAAC) and Swedish administrative data are used to track changes in work tasks and link them to the spatial division of labor. Preliminary findings indicate that urban workers have a more specialized task profile than their rural counterparts. Further analysis will examine how this specialization correlates with automation susceptibility and how workplace organization within urban labor markets influences this relationship.

R&D team gender diversity and green innovation: evidence from Europe

Prof. Alessandra Faggian¹, Prof. Martina Dal Molin, Dr. Chiara Leggerini

¹GSSI - Gran Sasso Science Institute, L'Aquila, Italy

S27-S3 Gender Equality in Regions in Europe and Beyond, D12, August 28, 2025, 4:30 PM - 6:30 PM

This research investigates the impact of gender diversity within R&D teams on green innovation across European countries, considering the influence of national gender equality contexts. Among innovation and green innovation studies, the drivers of innovation have been traditionally studied from two main perspectives: firm-level characteristics (Liu, 2024; Zhang et al., 2019) and contextual factors (Zhang & Wang, 2022; Du et al., 2019), while individual and team-level characteristics have been largely overlooked (Chu, 2024; Hemmert et al., 2024; Naveed et al., 2023; Wu et al., 2021). Only recently, in fact, individual characteristics at the team level have begun to attract scholarly attention, particularly regarding the positive impact that gender diversity may have on innovation and green innovation (Hemmert et al., 2024; Liu & Zhu, 2024; Wu et al., 2021). Gender diversity, providing different perspectives and problem-solving approaches due to different by male and female personal traits, can foster idea generation and innovation (Valantine & Collins, 2015; Griffin et al., 2021; Díaz-García et al., 2013; Page, 2007). Moreover, in this research, we also consider gender equality context which, at national or regional levels may stimulate gender diversity within firms (Campopiano et al., 2023; Chizema et al., 2015).

In this research, green innovation is measured using two patent-based indicators: the classification of patents as “green” and their citation count, as a proxy for the quality of green innovation. Gender equality is evaluated using the Global Gender Gap Index. Preliminary results indicate that, while gender diversity within R&D teams generally reduces the likelihood of green innovation, this effect becomes positive in countries with higher levels of gender equality. Specifically, the presence of female inventors is positively linked to the development of high-quality green innovations.

Challenges and opportunities for making healthcare systems resilience: the Bulgarian case

Mr Martin Kruse¹

¹Copenhagen Institute For Futures Studies, København Sv, Denmark

S42-S1 Strengthening Societal Resilience Through Policy Experimentation, Foresight and Participatory Approaches, D1, August 27, 2025, 2:00 PM - 4:00 PM

The rising share of healthcare expenditure in GDP is a growing concern for many economies. If this trend continues, healthcare will consume an ever-larger portion of national income, crowding out other critical investments like education, infrastructure, and could jeopardize the European green transition. For countries such as Bulgaria rising health expenditure places a heavy burden on government budgets. Governments must either raise taxes or increase borrowing, reduce spending on healthcare or cut spending in other essential areas such as social services, defense, or education. Reducing spending on healthcare is critical, but if it is not done through efficiency gains it will only lead to the hollowing out of the quality of the healthcare system and create greater polarization as more affluent individuals move towards private healthcare services. A core issue in Bulgaria's healthcare system is underfunding, which leads to resource shortages, disparities in service quality and high out-of-pocket expenses (OOP). Bulgaria has one of the highest out-of-pocket healthcare expenditures in the EU, more than double the EU average. As healthcare cost keep rising as a share of GDP it presents an ever-growing problem and a slow-moving crisis. For Bulgaria's healthcare system to be resilient efficiency improvements and innovation must be prioritized.

The rise of digital health services and the increasing recognition of the unsustainability of current healthcare models are driving a global transition toward more personalized and integrated care. By emphasizing preventive services, early interventions, and tailored treatments Bulgarians can achieve better health outcomes, while healthcare systems enhance their efficiency and overall effectiveness. Smoking, unhealthy diets, alcohol consumption and low physical activity are responsible for nearly half of all deaths in Bulgaria. The smoking rates are the highest in the EU. Expanding preventive healthcare initiatives, such as lifestyle interventions, early disease screening, and vaccination programs can significantly reduce the prevalence of chronic diseases like diabetes, cardiovascular conditions, and cancer. Another critical efficiency driver is the integration of digital health solutions. Bulgaria is already well underway with integrating digital solutions, but much remains to be done. The Bulgarian healthcare systems still suffer from bureaucratic redundancies and fragmented data management, leading to unnecessary expenses.

Foresight tools were used to stress-test proposed policy solutions for Bulgaria's healthcare sustainability across four scenarios, assessing their robustness.

Cicero Pro Domo Sua: Political Redistribution in Italy

Mr Gabriele Musacchia¹, Prof. Giuseppe Maggio

¹University Of Palermo, Palermo, Italy

S76 Innovative Economic Policy Approaches in the era of transformations. Topics, Data, and Methods,
D1, August 29, 2025, 2:00 PM - 4:00 PM

In this research, we investigate whether members of the Italian cabinet exert influence during the drafting of the budget law by allocating tax transfers to municipalities near their hometowns. This phenomenon, widely debated in the literature, is referred to using the Latin expression *Cicero Pro Domo Sua Premium*. Unlike previous studies on the subject, we focus on the role of government members in a parliamentary system such as Italy's. Our aim is to understand how the increasing prominence of the executive in the legislative process—particularly in discussions surrounding the state budget—affects the distribution of resources to municipalities represented within the government. To address this question, we constructed a detailed dataset covering government members from 1995 to 2023. Leveraging comprehensive data on state transfers to municipalities, we built a panel dataset with 209,496 observations on municipal transfers from 1996 to 2023. We further explore the heterogeneity of this dataset by examining the effects of fiscal federalism reforms, different electoral laws, various roles within the executive, and the presence of technocrats in political executives. Additionally, we distinguish between technical and political governments. Using a fixed-effects panel regression, we find a positive and robust relationship between a government member's geographical origin and the allocation of resources to nearby municipalities. However, this relationship is not statistically significant when the government members are technocrats. Finally, we argue that this positive relationship could stem from an electoral credibility mechanism: government members may channel resources to their hometown areas to maintain political support. Failure to do so could undermine their standing within their own party and among other politicians, particularly if they lose support from their local constituency despite holding an influential position.

Inter-sectoral analysis and measuring linkages and leakages to identify key sectors: an input-output approach applied to Reunion Island economy

Dr. Zoulfikar Mehounoud Issop¹, Pr. Yves Croissant², Mr Philippe Randriamasimanjato¹

¹University Of La Réunion, Saint-Denis, Réunion, ²Université Lumière Lyon 2, Lyon, France

G14-O3 Left Behind Areas, Insularity, Inner Areas and Border Regions, B4, August 29, 2025, 9:00 AM - 10:30 AM

This study investigates the production structure and inter-sectoral linkages of La Reunion, a French overseas region, using an input-output approach. Given the island's economic constraints, such as high import dependency, limited industrial diversification, and a dominant public sector, understanding sectoral interconnections is crucial for designing effective economic policies. The study aims to identify key sectors that generate strong economic spillovers, reduce economic leakages, and enhance regional resilience.

Using the 2019 Symmetric Input-Output Table (SIOT) with 61 economic sectors, we apply Rasmussen-Hirschman linkage indices, Leontief multipliers, and the AVIONIC model (developed by INSEE) to:

- Measure sectoral interdependencies, identifying industries that act as economic drivers.
- Assess economic leakages, distinguishing between locally sourced and imported production.
- Quantify multiplier effects, evaluating how changes in demand affect overall economic activity.

The findings indicate that the sectors with the highest multipliers—and therefore the most influential on economic growth—are:

1. Electricity (Multiplier: 3.08)
2. Tourism and Travel Services (Multiplier: 2.69)
3. Real Estate (Multiplier: 2.57)
4. Insurance (Multiplier: 2.27)

These industries exhibit strong backward and forward linkages, meaning investments in these areas stimulate demand across multiple sectors.

However, certain industries are highly dependent on imports, which limits their local economic impact. The most import-dependent sectors include:

- Oil Refining (90% import reliance)
- Pharmaceuticals (majority imported raw materials)
- Transport Equipment (80% import dependence)

These high-leakage industries fail to generate strong domestic value chains, emphasizing the need for local production capacity.

Policy Recommendations

1. Strengthen Local Supply Chains: Encourage local production for high-leakage industries (e.g., pharmaceuticals, transport, energy).
2. Target Investments in High-Multiplier Sectors: Provide tax incentives and subsidies for electricity, real estate, and tourism to amplify economic spillovers.
3. Reduce Import Dependence: Develop local manufacturing to substitute imports, promote value-added transformation, and enhance domestic resilience.

By prioritizing high-multiplier, low-leakage sectors, policymakers can create a more resilient and self-sufficient economy. Reducing import reliance and enhancing local supply chains will maximize economic growth and foster long-term sustainability for La Reunion.

Online shopping behaviour in Italy before and during the COVID-19 pandemic

Mr Tommaso Cigognetti, Mr Martin Hulenyi, Prof. Ilaria Mariotti¹, dr. Federica Rossi

¹Politecnico di Milano - DASTU, Milan, Italy

G06-O3 Space and Digital Transformation, A1, August 29, 2025, 9:00 AM - 10:30 AM

Digitization is directly associated with the growth of business-to-consumer (B2C) e-commerce, which was further accelerated by the COVID-19 pandemic restrictions. As a result of the movement restrictions, consumers and producers had to fast adjust to the considerable shift towards online buying. This shift has changed the territorial and spatial dynamics of cities and regions, emphasizing the necessity of efficient logistics optimization. It is essential to comprehend the characteristics of e-commerce clients in order to resolve these problems. To better understand the sociodemographic and economic aspects that influenced Italians' inclination to shop online before and during the COVID-19 pandemic, this research will analyze such factors. Data from the ISTAT "Aspects of Everyday Life" household survey are examined making use of a logit model. Our findings give policymakers and other stakeholders in the e-commerce industry important new information about how the epidemic has changed the traits of online shoppers.

Impact of large-scale transport infrastructure projects on local job accessibility: Lessons from the Region of Crete, Greece

Dr. Stefanos Tsigdinos^{1,2}, Dr. Theodore Tsekeris²

¹National Technical University of Athens, Zographos, Greece, ²Centre of Planning and Economic Research (KEPE), Athens, Greece

G05-O3 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 27, 2025, 4:30 PM - 6:30 PM

Job accessibility is a critical factor in commuting and local labour markets. For this purpose, public authorities invest in large-scale projects to enhance transport infrastructure and services, aiming to deliver significant accessibility benefits to local workers and visitors. Nevertheless, transport infrastructure projects also raise concerns about the accessibility distribution and equity. In this framework, the present study aims to examine how such projects may have a varying impact on job accessibility at the local level of municipal entities.

By considering the island region of Crete in Greece as a case study, we explore the potential accessibility benefits or pitfalls of major infrastructure projects. The first project refers to a comprehensive motorway network under construction, currently lacking on the island. The second one relates to the construction of the new international airport in the regional unit of Heraklion, along with a motorway connecting neighbouring regional units. Additionally, we employ a hypothetical third scenario: the construction of a railway line covering a substantial part of the region, which is not currently part of the formal planning agenda.

The analysis relies on processing a unique rich dataset of commuting flows, land use and socio-economic characteristics for the Region of Crete at the sub-municipal (LAU-2) level originating from the National Population Census. These data are processed with the use of advanced computational (GIS) tools and the calculation of accessibility indices, based on suitable assumptions concerning the development and characteristics of the surface transport infrastructure projects under investigation. More specifically, we incorporate a gravity model for calculating job accessibility, considering various building uses, such as offices, shops and factories, as opportunities. To address equity issues, we first examine the horizontal aspect through the Gini index and Lorenz curves. Next, we delve into vertical equity conditions (zero-car households, commuters, and economic profile), through utilising the concentration index and Bivariate Moran's I analysis (LISA).

The outcomes are quite interesting, as these new projects are found to considerably favour accessibility, albeit heterogeneously across space, thus arising equity concerns (especially in the eastern and western parts of the island). The findings could be useful for public decision-makers, planners and investors seeking for simple and coherent ways to assess the accessibility impacts of a transport project portfolio. Among others, policy recommendations call for more holistic and inclusive strategies to enhance job accessibility accounting for different spatial scales (regional, cross-municipal, municipal, sub-municipal), while ensuring adequate options for different transport modes.

Good and Bad practices of interregional Bank Recapitalization and its impact on the enhancement of Real Economy Local Entrepreneurship

Dr. Chrysanthi Balomenou¹

¹Epoka EPOKA University, Eiu And Hellenic Open University, Halandri, Athens, Greece

G03-O1 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 27, 2025, 11:00 AM
- 1:00 PM

This Paper is a discussion literature review oriented research one, which is divided in 2 parts: In the first part, it is presenting the Bank Recapitalisation as key pivot for the banking funding. Afterwards, via a through critical analysis it is examining (key research question) whether this strategy it could be considered as a necessary and or not sufficient condition for resumiong lending and consequently to strengthen the local entrepreneurship and support the real economy of the examining case studies. Under this umbrella, government-initiated bank rescue programs primarily focus on recapitalizing banks to boost their financial stability and ability to facilitate lending during economic downturns. In this framework, they are used the characteristic case studies like the ones of Japan, the United States, and Greece reveals varying approaches and outcomes. Indicatively it is referring here that Japan's slow response in the 1990s, with inadequate capital injections and delayed structural reforms, failed to resolve underlying issues like non-performing loans (NPLs). Conversely, the United States swiftly implemented the Troubled Asset Relief Program (TARP) during the 2007-08 crisis, aiming to stabilize banks and promote lending, though results varied across institutions. Whereas, Greece, facing external pressures, undertook multiple recapitalizations with stress testing and NPL resolution strategies, highlighting the importance of timely capital injections and comprehensive reforms. The learned lessons, deriving from the said analysis, emphasize the need for prompt, sufficient capitalization, proactive NPL management, and robust structural reforms to ensure banks can effectively support economic recovery and stability in future crises.

In the second part of the study, the research sample is enlarged as having been considered apart from Japan, USA and Greece and other European countries (like Germany, Italy, France and Spain). In this regards, it is interfered more into these case studies critical analysis, highlighting the good and bad practices and pinpointing the main features and key factors and reasons that have contributed, per country case study, to the successful or insufficient performance of each one of them. The research question of this part is relying on whether “ the U.S. and Europe Avoid a Lost Decade? Lessons from Japan’s Postcrisis Experience”. The study underscores the significance of prompt bank recapitalization and structural reforms, contrasting US and German responses more positively with Japan's delayed actions. In conclusion, it provides insights into how distinct economic policies and structural issues have influenced recovery trajectories in these regions.

Cross Regional Comparative Analysis of Central Banking Monetary Policies: The Case of FED and ECB during the Global Financial Crisis

Dr. Chrysanthi Balomenou¹, Dr. Agthanasios Georgakoulis¹

¹Epoka EPOKA University, Eiu And Hellenic Open University, Halandri, Athens, Greece

G06-O3 Space and Digital Transformation, A1, August 29, 2025, 9:00 AM - 10:30 AM

This Paper is a literature review oriented aiming, mainly, at presenting and analyzing the responses of the Central Banking to the Global Financial Crisis of 2007-2009, basing on the case study of the ECB and FED. Actually, the key purpose of this study is, after having been unrevealed the key causes and consequences of the crisis to be concentrated on a critical analysis of the adopted and implemented by ECB and FED conventional and unconventional monetary policies. In this regard, the used Methodological approach builds on two pillars: the first is relying on a thorough comparison analysis between the conducted, per case and under the umbrella of a bundle of the most important dilemmas in monetary economics, monetary policies, in order to pinpoint the most important similarities and differentiations among them. Whereas, the second one is focused on a detailed SWOT Analysis, highlighting on one hand the Strengths - Weaknesses and on the other hand the Opportunities – Threats, deriving from the outcomes of the said comparative investigation. The in-depth interpretation of this dual theoretical research analysis allows us to figure out whether the used, by FED and ECB, policies were, equally, the appropriate ones or not and why. And afterwards by being interfered more into the logic governing each one of them, taking into consideration and the results stemming from the relevant SWOT Analysis, to be enabled to provide, per examining Central Bank, the respective solutions for the overall improvement and development of the efficiency - effectiveness and flexibility of the undertaken, on both sides of the Atlantic, policies/strategies. Thus, this qualitative research will certainly serve the policy makers in their day-to-day decisions, as a comprehensive resource for scholars, policymakers and academicians, seeking to understand the unique challenges and policy responses from the part of the Central Banking that occurred during crises periods, like the examining one of the Global Financial Crisis.

The role of cohesion policy support in strengthening the impact and innovation of universities in less developed regions

Dr. Miroslav Šipikal¹

¹University Of Economics In Bratislava, Bratislava, Slovakia

G24-O1 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 27, 2025, 4:30 PM - 6:30 PM

In the countries of Central and Eastern Europe that have become members of the European Union, support from the European Structural and Investment Funds constitutes a significant part of public resources intended for development, especially in less developed regions. This applies to the resources available to universities in these regions. These universities are usually not among the leaders in the field of research and are rather expected to have an impact on the development of the region itself. The aim of this article is to show how these support resources affect the results of universities in these regions, namely in the area of their patent activity. We have compiled a database of university patents in the CEE countries after accession to the EU, while we have also identified the patents that were the subject of support. Subsequently, we have conducted several interviews with the creators of these patents focused on the role of support in their creation and application. After accession to the EU, we can see a very high increase in the patent activity of universities in less developed CEE regions, which reaches significantly higher values than in the case of less developed regions of Western Europe, with support from EU sources playing a key role. At the same time, however, we see that this research is rather "grant driven" and has only a practically negligible impact on the development of the regions in which these universities operate. Much of the reason for this is the wrong setting of the support policy, which does not emphasize the use and application of the supported research.

On Method of Estimate Deterioration of Infrastructure

Mr Naoto Itani¹, Dr Kazunari TANAKA²

¹Osaka Institute of Technology, Osaka, Japan, ²Osaka Institute of Technology, Osaka, Japan

G05-O6 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August
29, 2025, 9:00 AM - 10:30 AM

1. Introduction

In recent years, Japan faces the problem of declining birthrate and aging population. This problem is very serious in the construction industry. About a quarter of the total workforce is over 60 years old. The number of engineers needed to maintain the infrastructure of Japan is insufficient.

Additionally, the number of aging infrastructures in Japan is expected to increase rapidly. In particular, the aging of bridges presents a major challenge in Japan. A significant portion of social infrastructure was intensively constructed during the period of rapid economic growth. The percentage of bridges over 50 years old is projected to rise from approximately 37% in March 2023 to 54% in March 2030 and 75% in March 2040. Therefore, it is important to prioritize bridge maintenance. The goal of this study is to develop a method for assessing bridge deterioration more efficiently.

2. Purpose and method

The purpose of this study is to estimate bridge deterioration by some natural environment. In this study, we analyzed using the Random Forest algorithm. In this analysis, we researched bridges in Fukushima Prefecture. The dataset included 13,563 bridges and was formatted as a CSV file. For creating the dataset, we integrated the information of natural environment and bridges using GIS. From the results of the analysis, we computed the SHAP values for analyzing the most influential factors affecting bridge deterioration.

3. Result of analysis

This study revealed some natural environments have the positive and negative impact for estimating bridge deterioration. Natural environment, particularly, distance from the coastline and wind speed, are importance to estimate bridge deterioration. Additionally, structural attributes such as bridge lengths and year of construction are important.

4. In conclusion

In this study, we attempted to estimate bridge deterioration by using the Random Forest algorithm. This study clarifies the importance of variables such as distance from the coastline, precipitation, and wind speed for estimating the degree of deterioration. This study has the potential to predict the environmental impacts in the early design stages of infrastructure projects.

Future research will focus on improving the accuracy of this model by using population data, aerial photography and other environmental factors.

Housing can be durable “bads”: Costly abandonment of homeownership in a shrinking society

Dr. Masatomo Suzuki¹

¹Yokohama City University, Yokohama, Japan

G22-O2 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, B6, August 27, 2025, 4:30 PM - 6:30 PM

Among the major concerns of a shrinking society is the increase in vacant and abandoned houses. To date, the United States context has been widely investigated in terms of properties being foreclosed through tax delinquency or mortgage default and the abandoned properties exhibiting negative externalities for society. In this study, we aim to shed light on the more general housing problems in shrinking societies—the context of low demand in housing markets. While foreclosure-related housing abandonment often involves the transfer of ownership rights, ownership does not change merely by houses becoming vacant.

We argue that, under the institutional settings on owners' difficulty in abandoning property ownership, most vacant properties cannot achieve a positive equilibrium price and are no longer transactable in the formal resale market. An example of a mature but currently shrinking country in which home ownership has been promoted to achieve property-/asset-based welfare is Japan. The Japanese case demonstrates the negative outcomes of unsuccessful property transactions: owners inescapably having to maintain vacant property.

Using Japan's case, this study conceptualizes how owners' difficulty in abandoning property ownership affects the housing-market structure. We first develop a market framework for existing houses facing low demand, revealing that housing can be durable “bads;” that is, owners' burden to keep unnecessary assets can result in negative property valuation. Because market transactions are basically possible only at positive prices, the formal resale market disappears, leaving properties vacant or underutilized, often without changes in ownership.

Employing nationwide property-transaction data, we then show that the probability of transactions at very low prices rises in cities facing a higher proportion of underutilized vacant houses. Such market transactions imply that the net value after subtracting demolition or maintenance costs will be negative, supporting our conceptual framework. We argue that institutional settings on owners' difficulty in abandoning property ownership potentially hinder the utilization of vacant properties through formal market transactions.

Disentangling the Role of Transportation Costs in Morocco's Regional Growth: An Inter-Province CGE Approach

Mr Mahmoud Arbouch¹, Mr Eduardo Haddad¹

¹Mohammed VI Polytechnic University, , Morocco

G05-O3 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 27, 2025, 4:30 PM - 6:30 PM

There is a long tradition in transportation planning research of quantifying remoteness using accessibility indicators. By considering the structure of an existing network and the performance of its components, it is possible to assess the socio-economic impacts of changes in the physical characteristics of specific links affecting critical locations. However, the connection between changes in accessibility and their socio-economic consequences often relies on parameters estimated econometrically within partial equilibrium frameworks.

More recently, the integration of transportation network models with computable general equilibrium (CGE) models has gained increasing attention from researchers. This paper contributes to this growing literature by examining the case of a planned highway between the cities of Marrakech and Fès in Morocco, which will traverse several remote and underserved provinces. Morocco's transportation network provides a particularly relevant setting for understanding the economic costs of isolation. To analyze the potential effects of this infrastructure project, we calibrate a province-level spatial CGE model for Morocco and incorporate inter-provincial trade flows into the transportation network. This allows us to simulate the broader economic impacts of improving hinterland provinces' access to the country's core economic regions.

Examining the impact of economic structural change on regional differences in Central Eastern Europe

Dr. Marianna Sávai¹, Dr. Gábor Bodnár¹

¹University of Szeged, Szeged, Hungary

G20-O3 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G5, August 28,
2025, 4:30 PM - 6:30 PM

In the years following the 1989–1990 regime change, the countries of Central and Eastern Europe (CEE) were confronted with a series of economic and political challenges. In addition to the pervasive influence of privatisation, the 1990s were a period of significant transition. By the turn of the millennium, the CEEs had reached their pre-transition levels of production, while the structure of the labour market and economic sectors had undergone significant transformation. The objective of this paper is to provide an account of the structural changes that have occurred in the economies of the CEE regions (in this study, Hungary, the Czech Republic, Poland, Romania, Slovakia and Slovenia) from the 2000s to the advent of the global pandemic. The present study examines NUTS-3 level regions to provide a more detailed analysis of regional catching-up processes, which have so far been explored in research using more aggregated data. In light of the above, the research question that guides our investigation is as follows: what are the differences and similarities in the processes describing productivity change in NUTS-3 regions? While the majority of existing research compares catching-up processes with the EU average, our analysis compares countries with the group average, thereby offering a novel perspective on the catching-up issue. The results demonstrate that the productivity data for the regions of Central and Eastern Europe exhibit a notable economic growth in the metropolitan centres, including Bratislava, Prague and Warsaw. However, the development of rural and less developed areas in this sense still lags behind that of metropolitan areas. The more developed regions are characterised by the development of higher value-added sectors, while the less developed regions are dominated by the modernisation of the agricultural and industrial sectors. Inequalities between countries continue to widen as the more developed regions have adapted more rapidly to sectoral structural changing. In addition to the impact ratio analysis, a simulated Theil-index calculation is used to check the robustness of the results.

Bridging the gap or deepening divides? Social inclusion in Electric Vehicles and V2G adoption

Prof. Gonalo Santinha¹, Dr. J ssica Tavares¹, Prof. Marta Ferreira Dias¹, Prof. Marlene Amorim¹, Prof. Andr  Nunes²

¹University Of Aveiro, Aveiro, Portugal, ²University of Bras lia, Bras lia, Brasil

G11-O2 Public Policy Assessment: Inclusiveness and Poverty Alleviation Across Space; Equality in Opportunities and Territorial Justice, A2, August 29, 2025, 2:00 PM - 4:00 PM

The energy transition is not merely a technological shift but a socio-political challenge with profound implications for territorial justice and inclusiveness. While Vehicle-to-Grid (V2G) technology offers a promising avenue towards a more sustainable and resilient energy system by enabling electric vehicles (EVs) to function as mobile storage units, its benefits and accessibility remain unevenly distributed. Low-income communities often encounter greater structural barriers to adopting EVs and engaging with V2G systems. In the absence of adequate policy frameworks, these innovations risk reinforcing existing socio-spatial inequalities rather than mitigating them.

Despite growing academic and policy interest in V2G technology, research has predominantly focused on its technical and economic dimensions, such as grid integration, battery degradation, and market mechanisms. However, studies examining user perceptions, social acceptance, and the broader societal implications of V2G remain scarce. This knowledge gap is particularly significant given the disparities in awareness, access, and willingness to adopt new mobility and energy technologies across different socioeconomic groups.

This study examines citizens' perceptions of EVs and V2G technology through a case study in Aradas, a peri-urban district in Portugal. A qualitative approach was adopted, involving three focus group sessions with 33 participants selected based on age, employment status, housing situation, and driving experience. Discussions explored attitudes towards sustainable mobility, perceived barriers to V2G adoption, and expectations regarding public policies that could enable its equitable implementation. Findings reveal stark inequalities in mobility access and technology adoption. While electric vehicles are more commonly associated with wealthier households, mobility patterns vary across socio-economic and demographic groups. Participants highlighted that financial constraints often lead lower-income individuals to rely more on second-hand fossil-fuel vehicles or shared transport options, while younger and immigrant populations tend to make greater use of public and ride-hailing services. Cost constraints, concerns over the environmental impact of battery production, and the lack of accessible infrastructure emerge as key obstacles to adoption. Additionally, participants expressed strong reservations about the fairness of compensation mechanisms, fearing that V2G could disproportionately benefit wealthier users with private charging capacity, thereby exacerbating existing social divides. The study also highlights spatial disparities in awareness and engagement with sustainable mobility, reinforcing the need for locally tailored policy interventions.

These findings emphasise the importance of integrating social equity considerations into sustainable mobility policies. To prevent V2G adoption from deepening socio-spatial inequalities, policymakers must move beyond a purely technology-driven approach and implement community-driven initiatives.

Relationship between image of station square and landscape planning

Mr Taiyo Nosaka, Dr Kazunari Tanaka

¹Osaka Institute of Technology, Osaka, Japan, ²Osaka Institute of Technology, Osaka, Japan

G22-O1 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, B6, August 27, 2025, 11:00 AM - 1:00 PM

1.Introduction

The role of the station square keeps changing with the times. According to the Ministry of Land, Infrastructure, Transport and Tourism, station squares are expected to be attractive and easy-to-use spaces, especially in terms of factors such as convenience, comfort, safety, and locality. Our goal is to create a distinctive and symbolic open space.

2.Objectives and Methods

The local character and the image of the station are important. In particular, the purpose of this study is to clarify the relationship between landscape planning for the station square and the cognitive characteristics of the color images. The methods used will be questionnaire surveys and online surveys.

3.Questionnaire

We investigated the color difference images of three stations: Omihachiman Station, Hikone Station, and Kusatsu Station. As a result, it was revealed that Hikone Station reflects the local mascot character.

The image of Omihachiman Station reflects the characteristics of the station square. The image of Kusatsu Station reflects the colors associated with the place name.

We conducted a second questionnaire survey to identify trends regarding color image formation. The survey targeted 30 others stations.

Brown and orange were extracted for the color image of Tokyo Station. A distinctive feature of Tokyo Station is the red brick exterior of the Marunouchi Station building. This shows a high degree of agreement with the colors extracted through the questionnaire survey. For this reason, the image of Tokyo Station is influenced by symbols such as the Marunouchi Station Building.

Blue is the most extracted color for the image of Universal City Station. This station is the closest to Universal Studios Japan (USJ). Blue is utilized as the brand image here. There is consistency between the color image and the theme color of USJ. The image of this station may be influenced by tourist spots.

Yellow is the most extracted for the color image of Funabashi Station. The colors match those used by the region's mascot, Funassyi. The color image of this station was influenced by the mascot character.

Pink is the most extracted for the color image of Sakurai Station. This is because of the place name. Contains Sakura, which has the image of pink color in Japan.

4. Conclusion

The fourth trend is that people's perceptions are influenced by place names. We conduct an analysis of the landscape plan. We also consider the similarities and differences between the station image and the landscape plan.

Key Factors for Embarking on Campus Sustainability Initiatives: Case Studies of Japanese Higher Education Institutions

Dr. Maki Ikegami¹

¹Hiroshima University, Hiroshima City, Japan

G24-O1 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 27, 2025, 4:30 PM - 6:30 PM

The role of higher education institutions in fostering a sustainable society has become widely acknowledged. Efforts to enhance environmental efficiency in campus operations emerged in the 1990s, primarily in North American universities, followed by European institutions. Today, campus sustainability initiatives are recognized not only as measures for improved environmental management but also as comprehensive and systematic efforts integrating research, education, and regional engagement to drive innovation toward sustainability.

In Japan, the earliest attempts at campus sustainability were centered on establishing environmental management systems within universities. Education for Sustainable Development (ESD) was another key initiative, promoted by Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT) under the United Nations' Decade of ESD campaign. However, following the cessation of MEXT funding, ESD initiatives in Japan declined, failing to embed the concept of campus sustainability fully within institutional frameworks.

At present, campus sustainability initiatives in Japan are primarily focused on physical campus management, lacking the holistic approach adopted by higher education institutions in North America and Europe. In response to this gap, this study examines Japanese case studies to advance comprehensive campus sustainability in the country.

This study aims to identify appropriate organizational structures and decision-making processes that can facilitate the implementation of holistic campus sustainability in Japanese higher education institutions.

In 2013, a leading Japanese university developed the first assessment framework for sustainable campuses, known as the Assessment System for Sustainable Campuses (ASSC), designed specifically for Japanese higher education institutions. The ASSC consists of 170 assessment criteria across four dimensions: Management, Education and Research, Environment, and Local Community.

For this study, semi-structured interviews are being conducted with key informants from four leading universities selected from the 16 most active ASSC respondent institutions over the past five years. The collected data will undergo thematic analysis following a systematic coding process. This presentation will provide interim findings from this ongoing research.

Preliminary analysis of the pioneering initiatives undertaken by these universities has revealed several common factors. A top-down decision-making approach is a predominant feature, while the integration of an assessment system within campus management also plays a crucial role. Once the study is completed, its findings will provide university leaders in Japan with a strategic framework for initiating campus sustainability efforts, thereby fostering a holistic approach that encompasses regional development and contributes to the broader goal of a sustainable society.

Revisiting The Role Of Industrial Agglomeration On Regional Economic Growth in Indonesia: A Spatio-Temporal And Spatial Econometric Perspective

Ms Ragdad Cani Miranti¹

¹University of Manchester, Manchester, United Kingdom

G16-O4 Statistical And Econometric Methods of Urban and Regional Analysis, F5, August 29, 2025,

2:00 PM - 4:00 PM

Using a novel provincial-level dataset of regional growth, industrial agglomeration, and related determinants, this paper attempts to examine the spill-over effect of industrial agglomeration on growth across 34 provinces in Indonesia. By employing Spatial Durbin Model, we evaluate the influencing factors and spatial externalities which tend to lead regional economic growth in Indonesia. In particular, we also examine the role of spatial spillover to regional growth across provinces. The results show that there was positive spatial autocorrelation both on industrial agglomeration and economic growth during 2010-2021. However, spatial autocorrelation was negative for economic growth in 2010. Despite positive spatial association, the magnitude indicated a weakening pattern for industrial agglomeration in 2021. Another appealing finding shows that decreasing patterns of spatial dependence are significantly associated with increasing patterns of industrial agglomeration inequality. Second, Moran's I scatter plot and directional LISA indicate the existence of spatio-temporal patterns in both agglomeration and regional growth. Third, spatial effect of industrial agglomeration, Information and communication technology (ICT), and infrastructure level significantly leverage regional economies. Using Spatial Durbin Model, we find that spatial lags of some explanatory variables are significant, which are industrial agglomeration, ICT, and infrastructure level, suggesting significant effects on the growth performance in a given province. From a policy perspective, our findings alert policymakers to consider the possibility of augmenting industrial clusters and improving infrastructure-based policies with region-specific efficiency measures.

Can e-Government foster Perceived Public Value despite economic inequalities? Insights from Mediterranean Countries

Prof. Benedetta Coluccia¹, Prof. Valentina Cattivelli¹, Dr Roberta Barbieri²

¹Pegaso Telematic University, Naples, Italy, ²University of Salento, Lecce, Italy

S56-S2 Digitalization and Inequality: Territorial Disparities and Policy Effectiveness, Amph 2, August 29, 2025, 11:00 AM - 1:00 PM

Digitalization in the public sector is often promoted as a means to enhance administrative efficiency and improve citizens' quality of life, ultimately fostering Perceived Public Value (PPV). However, the extent to which e-Government policies effectively contribute to public value remains uncertain, particularly in contexts characterized by economic inequalities. This study aims to assess whether e-Government can foster PPV despite disparities in wealth and resources, focusing on 41 member countries of the Union for the Mediterranean (UfM).

To achieve this, we develop a scalable model to measure PPV using the Multi-Criteria Decision Making (MCDM) approach, integrating the Analytic Hierarchy Process (AHP) and TOPSIS. This model systematically evaluates public policy effectiveness across different national contexts, ranking countries based on their ability to generate public value. The analysis reveals significant disparities in PPV among UfM countries, with Northern and Western European nations outperforming their Southern and Eastern European counterparts, while MENA region countries experience substantial challenges due to political instability, corruption, and inadequate infrastructure.

To further examine the role of e-Government in shaping PPV, we apply a Weighted Least Squares (WLS) regression analysis, incorporating both a basic model (assessing the direct impact of e-Government on PPV) and an extended model (including an interaction term between e-Government development and economic inequality). The results confirm that e-Government policies positively influence PPV, improving citizens' perceptions of public services. However, economic inequality significantly moderates this effect, meaning that in countries with higher levels of inequality, the benefits of digitalization are less pronounced. This underscores the role of the digital divide in exacerbating disparities, as access to and effective use of digital government services remain uneven. Our findings have important theoretical, practical, and policy implications. Theoretically, the study contributes to public administration literature by providing a comprehensive measurement framework for PPV and testing the combined effect of e-Government and socioeconomic inequalities. Practically, it offers policymakers a scalable assessment tool to evaluate governance performance and design inclusive digital strategies. From a policy perspective, the study calls for targeted interventions that address digital exclusion, ensuring equitable access to e-Government services to maximize their public value potential. Overall, while digitalization holds great promise for improving public governance, its effectiveness is contingent upon addressing economic inequalities and ensuring broad accessibility to digital services. Without such efforts, e-Government risks reinforcing, rather than reducing, existing disparities.

Is Night-Time Light Data a Reliable Proxy for Sectoral GRDP? Urban and Rural Luminosity across Districts in Indonesia

Ms Ragdad Cani Miranti¹

¹University of Manchester, Manchester, United Kingdom

G16-O1 Statistical And Econometric Methods of Urban and Regional Analysis, G1, August 27, 2025,
11:00 AM - 1:00 PM

The use of night-time light data has been widely growing in socioeconomic studies over the past decades. This remote sensing approach is considered as a reliable proxy for local economic activity particularly in developing countries where traditional data is scarce. The prominent methods relying on official statistics are often time-consuming and experiencing time-lag delays in data availability. Furthermore, these traditional approaches struggle to provide reliable socioeconomic indicators at granular administrative levels, such as districts and sub-districts.

Our study examines the relationship between NTL intensity and sectoral Gross Domestic Regional Product (GRDP) across 514 Indonesian districts from 2019 to 2023. To address the limitation of global NTL in capturing rural agricultural production, we incorporate MODIS land cover data to distinguish between urban and rural NTL intensity. In this research, we apply Visible Infrared Imaging Radiometer Suite (VIIRS) NTL which offers advantages on higher spatial resolution and finer detail of geographical areas. We employ three estimators on regression models—OLS pooled estimator, Least Square Dummy Variable (LSDV) and between regression fixed effect—to assess the predictive power of NTL on sectoral GRDP. The LSDV regression shows significant and positive coefficient only for total and rural NTL on non-agriculture and agriculture GRDP, while OLS pooled and fixed effect between estimator reveal significant and positive coefficient of NTL data on all dependent variables. After controlling for district and year fixed effects, all NTL measures (urban, rural, and total) indicate significant and positive coefficients, suggesting the validity to explain annual changes in Indonesia's sectoral GRDP. A 10 % increase in global NTL implies an 8,27 % in economic activity in district's all sectors, while a 10 % increase in urban and rural NTL correspond to 4,44 % and 4,49 % percent rise in non-agriculture and agriculture sector, respectively.

In addition, results from all three estimators indicate that urban and rural NTL intensity could explain sectoral GDP variations (agriculture, non-agriculture, and total GDP) well, with R-squared reaching over 80 percent in LSDV regression for all dependent variables. Higher R-squared values in the LSDV and between-estimator regression compared to the OLS pooled estimator suggest that VIIRS-NTL data more effectively predicts cross-sectional GDP variations between districts. Our findings confirm that VIIRS NTL data accurately predicts economic activity in both urban and rural areas. This research validates the use of remotely sensed data for evaluating long-term district-level GRDP patterns.

Territorial market power as a source of inequalities in the automation era

Roberta Capello, Camilla Lenzi, Ms Elisa Panzera¹

¹Politecnico di Milano - DABC, Milan, Italy

S38-S3 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 27, 2025, 4:30 PM - 6:30 PM

By reducing the importance of labour to firms and increasing the returns to wealth, automation generally decreases the labour share of income. This effect can vary depending on the degree of market concentration, as highlighted in the literature through the superstar firms hypothesis (Autor et al., 2020). The present paper claims that sectoral market power is not the only mechanism through which the automation-labour share nexus is affected. Automation is expected to be especially detrimental to the labour share also in areas characterised by the presence of highly specialised and geographically clustered firms, in spite of the degree of market concentration of firms' activity sector. This phenomenon is defined in the paper as territorial market power. The paper investigates this hypothesis in a large-scale analysis of the manufacturing sector in European NUTS2 regions in the period 2011-2019. The results obtained through the estimation of a pooled OLS regression show that the labour share of income decreases not only due to automation in high market power sectors, in line with the superstar firms hypothesis, but also that automation in specialised areas decreases the labour share of income.

Benefits of Geographically Weighted Regression for Analyzing Municipal Processes in Russia

Prof. Olga Demidova¹, Diana Turchak¹

¹National Research University Higher School Of Economics, Moscow, Russian Federation

G21-O3 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 28, 2025,
4:30 PM - 6:30 PM

The study was prepared within the framework of the project "Mirror Laboratories of the National Research University Higher School of Economics"

Russia is a very large and very heterogeneous country in socio-economic terms, including a large number of regions, municipalities, cities, etc., actively influencing each other. Therefore, when modeling socio-economic processes occurring in Russia using regional or municipal data, the following problems arise: 1) the sample used is not homogeneous, observations for regions or municipalities cannot be considered independent, therefore linear regression models with constant coefficients for factors included in the models and a scalar matrix for errors are not suitable, 2) if the mutual influence of regions is not taken into account, a problem of bias in the estimates of coefficients may arise due to the omission of an essential variable.

To solve these problems, many articles use spatial econometric models or, much less frequently, geographically weighted regressions. We demonstrate the advantages of using geographically weighted regression identifying the factors that influence the share of votes cast for candidates from the ruling United Russia party, several opposition parties, and for independent candidates in the 2021–2022 municipal elections. Three key research hypotheses were examined: 1) the presence of spatial autocorrelation in voting data; 2) the influence of economic variables on electoral results; 3) the spatial variability of these economic effects. These hypotheses were tested using linear regression models and geographically weighted regressions on data for 2272 Russian municipalities and received empirical confirmation. The higher the budget surplus, the higher the share of votes for United Russia representatives. The better developed small and medium businesses are in a municipality, the lower the share of voters supporting United Russia, and the higher the share of voters supporting independent candidates and opposition parties. The models of the geographically weighted regression (GWR) allow us to obtain much more detailed results. Some factors, the coefficients of which were insignificant in linear models, turned out to be significant for some municipalities in the GWR models. The results of this study may be useful for policy-makers and other stakeholders interested in promoting a fairer electoral process.

Tourism as a Catalyst or Constraint? Unpacking Its Role in Regional Development Trap

Dr. Zvonimir Kuliš¹, Dr. Blanka Šimundić¹, Dr. Vinko Muštra¹

¹Faculty of Economics, Business And Tourism, University Of Split, Split, Croatia

G15-O3 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness, Quality of Life, B6, August 29, 2025, 9:00 AM - 10:30 AM

This paper explores the theory of tourism-led growth, which posits that tourism can serve as a significant driver of economic development, particularly in regions with abundant natural and cultural resources. However, the phenomenon of regional development traps complicates this narrative, as regions may become overly reliant on tourism, leading to economic vulnerabilities and social disparities. A regional development trap refers to a situation where certain regions fail to achieve economic growth and development due to various structural, institutional, or resource-related constraints (Iammarino et al., 2020; Diemer et al., 2022; Rodríguez-Pose et al., 2024). Since excessive specialization in tourism can result in diminishing returns, as the industry is often labor-intensive and experiences limited technological advancement (Deng et al., 2014) tourism can both alleviate and exacerbate these traps, depending on how it is integrated into the broader regional economy. This raises important questions about the sustainability of tourism-led growth and the potential for regions to become trapped in cycles of dependency that hinder broader economic diversification.

While the tourism-led growth hypothesis (TLGH) has been widely studied, particularly at the national level, there remains a significant lack of empirical evidence and theoretical exploration concerning regional dynamics and the potential traps that can arise from an over-reliance on tourism. Addressing this research gap requires a more comprehensive approach that considers regional dynamics, the potential for economic dependency, and the need for disaggregated analyses. In line with this, the aim of this study is to investigate the intricate relationship between regional development traps and tourism specialization.

To achieve this, we calculate the modified regional development trap for NUTS 2 regions and employ tourism specialization measures, thus providing the spatial econometric analysis in exploring the dynamics of tourism specialization and its effects on regional economic performance. Ultimately, this study aims to provide a comprehensive understanding of how tourism can be both a catalyst for growth and a potential trap, emphasizing the need for balanced, sustainable approaches to regional development that leverage tourism's strengths while addressing its inherent challenges.

The accumulation process of spatial capital among migrants: The mediating role of citizens' associations

Ms Elif Bengi Güneş Yerlikaya¹, Ms Tüzin Baycan²

¹Gebze Technical University, Kocaeli, Türkiye, ²Istanbul Technical University, Istanbul, Türkiye

G13-O1 Social Capital, Territorial Capital, Institutions and The Commons, F5, August 27, 2025, 11:00

AM - 1:00 PM

In recent decades, Türkiye has experienced significant surges of both internal and external migration, leading to the emergence of dense irregular settlements. Although these particular regions are crucial for migrants to amass spatial and social capital, they are also influenced by structural disparities and intricate social processes. The accumulation of spatial capital among migrants is directly linked to local spatial arrangements, regional policies, and social capital. Using Istanbul as a case study, which has the highest number of irregular settlements in Türkiye, this study investigates the process by which migrants form social and spatial networks in these regions, where the capacity of regenerating the spatial capital has been remarkable as well.

An in-depth analysis of migrants' spatial capital accumulation processes is conducted with a dataset collected through a narrative approach by means of semi-structured interviews with ten federations of hometown associations. The dynamic structure of NGOs representing hometown associations, their solidarity-based nature, and their large number provided the basis for conducting the study through the federations. Through the thematic analysis, the interactions and spatial arrangements of migrant communities are methodically delineated, emphasizing the structural characteristics of these networks and their capacity to produce spatial capital. The findings obtained using NVivo software were collected and analyzed under certain themes and sub-themes by subsequently using the deductive and inductive methods.

The results demonstrate how migrant communities enhance their social connections, access opportunities, and reconstruct their sense of belonging in urban environments through spatial capital accumulation and solidarity networks, demonstrating their ability to formulate sustainable strategies despite the challenges posed by spatial inequalities in irregular settlements. Also, the findings unequivocally demonstrate the mediating role of citizens' associations and federations in enhancing individuals' social and economic capital. These solidarity structures have bolstered communities' assertions of rights and involvement in decision-making processes within urban environments. The study emphasizes the necessity for enhancing intra-community connections while fostering solidarity networks for greater social integration at the urban level.

Mining and Economic Growth: Equality for whom?

Prof. Diego Vásquez¹, Dr. Pablo Gutiérrez, Dra. M.Carmen Delgado

¹Universidad Andrés Bello, Santiago, Chile

G11-O1 Public Policy Assessment: Inclusiveness and Poverty Alleviation Across Space; Equality in Opportunities and Territorial Justice, A4, August 28, 2025, 4:30 PM - 6:30 PM

This study examines the impact of the mining sector on Chile's economic growth and its distribution of capital income between different population groups. Using a Social Accounting Matrix (SAM), we assess productive linkages and the transmission of economic effects through the income structure. A key contribution of this study is the incorporation of the redistribution matrix R proposed by Roland-Holst (1990), in conjunction with the methodological advances introduced by Gutierrez Cubillos et al. (2024) to quantify the spillover effects. Building on this framework, we develop the Social Accounting Capital Redistribution Matrix (SACRM), which extends traditional redistribution measures by capturing the indirect effects of economic shocks across activity sectors. By integrating spillover dynamics, SACRM provides a more nuanced understanding of income distribution changes in response to sectoral interdependencies, offering a novel approach to analyzing inequality within mining-driven economies.

Critical Infrastructures and Their Role in Regional Resilience: Mapping EU Regions

Ms. Aydan Ege Güven¹, Mr Giulio Breglia¹, Mr. Marco Modica¹

¹Gran Sasso Science Institute , L'Aquila, Italy

G01-O4 Urban, Regional, Territorial and Local Resilience, B5, August 27, 2025, 4:30 PM - 6:30 PM

Regions are increasingly interconnected through population mobility, economic exchanges, and infrastructure networks that create complex interdependencies, shaping regional resilience. As these connections deepen, the ability of regions to withstand disruptions becomes increasingly vital. In this context, critical infrastructures, such as electricity grids, water supply, and transportation, play a crucial role in ensuring the continued delivery of essential services, economic and social wellbeing. However, their interconnected nature can also lead to cascading failures, affecting entire regions.

As regions expand and face greater uncertainties, their ability to withstand shocks has become crucial. Resilience, broadly defined as a socio-economic system's adaptive capacity to shocks, is strongly influenced by the sufficiency of critical infrastructures and the interdependencies within these networks. Insufficient backups and infrastructure, or hub overdependence can escalate natural events into disasters.

Critical infrastructures (CI) are the infrastructures providing continued delivery of essential services, ensuring their accessibility for sustaining economic and social life. While there is no universal definition of critical infrastructure, energy, ICT, and transportation are widely recognized, whereas housing, elderly care, and legal systems receive less attention. What makes these infrastructures truly "critical," however, is their potential to turn a disruptive event into a disaster if they are susceptible to failure and lack redundant capacity. Effectively addressing this criticality requires examining critical infrastructures not only through the lens of engineering resilience but also in terms of their geographical distribution, sufficiency, and interconnections. Yet, research in this area remains limited, and the link between critical infrastructures and regional resilience is still under-explored.

To better understand these dynamics, it is crucial to examine how CI contributes to regional resilience. Recognizing their role in shaping a region's ability to withstand and recover from disruptions provides a foundation for more effective risk mitigation. In regions where critical infrastructure is diverse and sufficient, service continuity is more likely to be maintained, enhancing the region's adaptability.

Therefore, the aim of this study is to map CI and regional resilience across EU NUTS 2 regions and provide a picture of the potential criticalities. In this study, CI indices based on numerosity and sufficiency will be mapped. The relationship with regional resilience -assessed with a multi-layer approach- and CI will be analysed with a regression analysis. By mapping critical infrastructures, this study bridges single-infrastructure resilience research with complex adaptive systems theory, paving the way for planning regional resilience and disaster mitigation in the face of uncertainties.

Carbon Emissions Trading and Regional Policy Effects: Firm-Level Impacts

Ms Jiayi Wang¹

¹University Of Manchester, Manchester, United Kingdom

G04-O5 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 29, 2025,
11:00 AM - 1:00 PM

As climate change accelerates, governments are adopting market-based policies to drive low-carbon transitions. China, the world's largest carbon emitter and a key global economy, has introduced a carbon emissions trading system (ETS) to regulate industrial emissions while incentivising green technological innovation. Following the European Union's Emissions Trading System (EU-ETS), China launched regional pilot programs in 2013 before establishing a national carbon market in 2021. While existing studies have assessed carbon trading's impact on emissions reduction and economic performance, its role in stimulating green innovation remains underexplored—especially across different firm types and regional policy environments.

This study investigates whether and how China's ETS fosters green innovation, considering firm heterogeneity, carbon quota pricing, and regional policy differences. Focusing on emission-control enterprises in pilot regions from 2010 to 2021, this study employs a triple-difference (DDD) approach, using listed firms' green patent applications as a proxy for innovation. Additionally, leveraging carbon market trading data from 2014 to 2021, the study explores the relationship between carbon allowance prices and firms' innovation intensity, incorporating a heterogeneity analysis across firm size, ownership structure, and industry characteristics. By integrating firm-level patent data with carbon market transaction records, this research provides a comprehensive evaluation of how emissions trading policies influence corporate innovation strategies across different regional contexts.

The findings reveal that China's ETS has a significant but uneven impact on green technological innovation. State-owned enterprises and large firms tend to benefit more, whereas smaller firms face financial and technological barriers to innovation. Additionally, a stable and well-calibrated carbon allowance price is crucial—prices that are too low fail to drive innovation, while excessive volatility may discourage long-term R&D investments. These results provide critical policy insights into the role of carbon markets as financial instruments for advancing regional sustainability strategies. The study contributes to discussions on regional policy, cohesion policy, and policy assessment, offering guidance for optimising carbon trading mechanisms to support industrial decarbonisation, technological advancement, and regional economic resilience.

The shifts in residential segregation and immigration in Sweden 1990-2022

Dr. Sofia Wixe¹, Professor Charlotta Mellander¹

¹Jönköping International Business School, Jönköping, Sweden

S03-S2 Drivers and Impacts of Migration: New Insights on the Role of Labour Markets, Demographic Change, Human Capital and Networks, G6, August 29, 2025, 9:00 AM - 10:30 AM

Since the early 1990s, Sweden has undergone significant demographic changes, with the share of foreign-born increasing from approximately 10 percent to more than 20 percent of the population. During this time, the origins of immigrants have also shifted, with a growing proportion arriving from non-Western countries, often culturally distinct from Sweden (e.g., based on the World Values Survey). During the same time, the country has also seen a sharp rise in residential segregation, both in terms of foreign-born individuals and across socioeconomic dimensions. In this paper, we examine the extent to which the increase in socioeconomic segregation is linked to the changed immigration profile of the country. Our findings show a significant strengthening of the relationship between ethnic and socioeconomic segregation over time. Ethnic minorities, particularly non-Western immigrants, are increasingly concentrated in socioeconomically disadvantaged neighborhoods characterized by poverty, unemployment, and low educational attainment. Additionally, we find that socioeconomic segregation has risen gradually alongside the growing share of immigrants, particularly non-Western immigrants, whose immediate arrival contributes to higher levels of residential segregation.

Impacts of High-Speed Railroad Development on Regional: An Dynamic Spatial Computable General Equilibrium Model to South Korea

Prof. Euijune Kim¹, Dr. I Re Chung¹

¹Seoul National University, Seoul, South Korea

G05-O2 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 27, 2025, 2:00 PM - 4:00 PM

This study examines the case of High-Speed Railroad (HSR), a core transportation infrastructure with a pronounced impact on accessibility, to analyze how the development of such infrastructure affects regional economies from the perspective of population dynamics. The analysis focuses on changes in migration patterns between metropolitan and underdeveloped regions and explores shifts in both residential and staying populations. Here, the staying population encompasses individuals temporarily residing in an area for purposes such as commuting, leisure activities, or tourism, regardless of official residency registration. For instance, even if changes in residential population are minimal, an increase in commuting rates from underdeveloped regions to metropolitan areas might indicate a backwash effect due to the expansion of metropolitan labor markets. Conversely, an increase in staying populations – for instance, tourists from metropolitan areas visiting underdeveloped regions – could signify a spread effect, reflecting regional economic revitalization. In demographic contexts such as South Korea and Japan, where stagnant population growth due to low birthrates exacerbates concerns about regional depopulation and economic shrinkage, policy approaches increasingly emphasize attracting staying or relational populations rather than solely focusing on boosting residential population growth (Ha and Im, 2024). Therefore, analyzing changes in staying populations holds significant academic and policy relevance for evaluating regional economic revitalization and sustainability.

This study explores two main research questions: First, how does the construction of HSR connecting metropolitan and underdeveloped regions affect changes in residential and staying populations, as well as regional economic growth? Second, what are the implications of these changes for addressing regional inequality and urban shrinkage? To investigate these questions, this study examines the East-West High-Speed Railroad project in South Korea as the case study, focusing on its potential to bridge disparities between the Seoul metropolitan area and the underdeveloped Gangwon region. The study employs a Spatial Computable General Equilibrium (SCGE) model, which extends traditional CGE models by incorporating spatial accessibility changes and interregional interactions resulting from transportation infrastructure investments at the city and county levels (Kim et al., 2023). Using the SCGE model, the study quantitatively evaluates the spatial spillover effects and indirect benefits of the Chuncheon-Sokcho East-West HSR on population shifts and their impacts on regional economies.

Urban regeneration policy in the light of gentrification

Dr. Uwe Neumann¹

¹RWI - Leibniz Institute for Economic Research, Essen, Germany

G22-O2 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, B6, August 27, 2025, 4:30 PM - 6:30 PM

During the past decades, urban regeneration initiatives in many countries have strived to prevent undesirable neighbourhood effects resulting from local deprivation. In many cases, policy initiatives have been based on the expectation that residential segregation and urban deprivation will increase in line with rising inequality on labour markets. While poverty remains a feature of many neighbourhoods, however, central urban areas have experienced a rising overall desirability as residential location. Gentrification of deprived quarters has therefore become a widespread trend, often leading to a rise of housing costs and displacement of low-income households. Using the nation-wide “Social City” programme in Germany as case study, the analysis explores to what extent urban regeneration policy has affected the residential population of programme areas and whether it might have spurred gentrification. The Social City was established in 1999 with the goal to support regeneration and to strengthen local civil society in deprived urban neighbourhoods. Previous research focussing on North Rhine-Westphalia, Germany’s most urbanised federal state, suggests that during the period 2009-2021 programme areas experienced a significant surplus in the increase of housing prices and rents in comparison to non-supported reference areas. In order to examine the policy outcomes across Germany as whole, the analysis uses statistics on socio-economic characteristics provided at the level of 1 km² grids (RWI GEO-GRID), micro-data on housing prices (RWI GEO-RED) and microdata from the SOEP, a large German panel study comprising extensive information about individuals and households in programme areas. The SOEP will be utilised in terms of panel estimations in order to examine whether the Social City affected income growth among the residential population in general and with a view to different income quantiles and differences between households remaining in programme areas and those moving in and out. Hedonic pricing estimations and income regressions based on data from RWI-GEO-GRID and RWI-GEO-RED will pursue the policy effects by comparison between programme and non-supported reference areas in Germany as a whole, at the level of federal states and among different sections of the city size distribution.

Patterns and drivers of cluster formation in the videogame industry: a systematic literature review

Prof. Pier Paolo Patrucco¹, Prof. Enrico Bertacchini¹, Dr. Cecilia Maronero¹

¹University of Torino, Torino, Italy

S25 Video Game Industry and Regional Development, G6, August 27, 2025, 2:00 PM - 4:00 PM

There is widespread agreement that cultural and creative industries exhibit a propensity to cluster in urban areas. The literature has extensively explored the conditions and mechanisms conducive to cluster formation (Lorenzen and Frederiksen, 2008; Gong and Hassink, 2017; Chapain and Sagot-Duvauroux, 2020). However, the relative importance of these factors across specific cultural and creative sectors remains insufficiently understood.

This paper examines the clustering patterns and drivers within the videogame industry. Employing a systematic review of 36 scholarly articles and about 90 documented cases of videogame industry clusters worldwide, the study addresses three questions: (i) Which videogame industry clusters have been addressed? (ii) What are their structural characteristics? (iii) What are the main drivers of their formation?

To address the first question, we characterize the study cases in terms of geographic location, type of urban area, size of the cluster and period of emergence. To address the second questions, adopting a theoretical framework inspired by Brenner and Mühlig (2013), we disentangle the dynamics of cluster formation into 18 factors and mechanisms grouped in three key dimensions: prerequisites, triggering factors, and augmenting processes.

Our preliminary findings reveal a wide geographic coverage of videogame industry clusters, with cases documented across America, Asia, Europe, and Australia. Clusters are not confined to large metropolitan areas; they have also emerged in smaller urban settings, reflecting the diverse spatial dynamics of the industry. Additionally, the temporal distribution of cluster formation indicates distinct periods linked to the historical development of the videogame industry at national levels, suggesting significant contextual influences.

As for the drivers of cluster formation, we expect not only to assess the most frequent factors identified in the literature, but also differences in their relevance across cluster types.

The paper contributes to the literature on clustering in cultural and creative industries by shedding light on how unique features of the videogame industry influence cluster dynamics. Furthermore, it highlights distinct conditions and factors as peculiar enablers of cluster sustainability and growth in this sector.

Energy communities: Spatial implications and tackling energy poverty

Dr. Sol Maria Halleck Vega¹

¹Wageningen University, Wageningen , The Netherlands

G10-O5 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 29, 2025, 2:00 PM - 4:00 PM

Energy systems are becoming more decentralized (European Commission, 2019), with large volumes of more locally generated power, which is changing energy geographies. Energy communities have been highlighted for their potential to be key enablers to facilitate a just energy transition (Caramizaru and Uihlein, 2020). First, I will highlight three interrelated opportunities and challenges in relation to energy communities and spatial implications. A particular form of energy injustice is energy poverty (Jenkins et al., 2016), which has become a growing concern in Europe. Despite energy communities' potential benefits including in helping alleviate energy poverty, they have been treated in relative isolation from each other (Hanke and Guyet, 2021). In my work with Jordan Young, we unravel the specificities of energy communities' energy poverty alleviation approaches and barriers faced. The Netherlands is selected as a case due to a doubling of energy communities over the past decade. A survey is developed to appraise energy communities' (lack of) engagement in tackling energy poverty with n=196. Using an ordinal logistic model, the effectiveness of approaches of energy communities in addressing energy poverty is assessed. Insights from this study on implications for energy community movements and other (energy system) actors can also be valuable for other countries facing energy poverty challenges. This work also invites to further explore implications of changing social and space-energy interdependencies.

Assessing the spatial overlap between urban fragmentation and residential segregation in European cities.

Mr Lucas Spierenburg¹, Dr. Sander van Cranenburgh¹, Prof. Oded Cats¹

¹TU Delft, Delft, The Netherlands

YSS4, G4, August 28, 2025, 11:00 AM - 1:00 PM

This study investigates whether the "wrong side of the tracks" phenomenon, where physical infrastructure associates with residential segregation patterns, extends to European cities where explicit segregation policies were historically absent. While this relationship has been extensively documented in the United States, where infrastructure was deliberately used to engineer segregation, its applicability to European cities remains uncertain. We analyze 496 cities across eight European countries (UK, France, Germany, Spain, Italy, Portugal, Ireland, and Netherlands) using harmonized demographic data on migrant populations at 100x100m² resolution. Our novel methodological framework quantifies the spatial correspondence between urban fragments (defined by railways, major roads, and waterways) and demographic regions (identified through spatial clustering) using a purity score metric and Monte Carlo testing procedure to control for chance alignments. Our preliminary results from eight pilot cities reveal substantial heterogeneity in this relationship. Cities like Freiburg and The Hague show strong alignment between infrastructure and demographic boundaries ($q = 0.996$), while Barcelona and Lyon demonstrate inverse relationships ($q = 0.002$), where migrant populations often center around transportation nodes and extend across infrastructure boundaries. This variation challenges the universality of infrastructure-driven segregation and suggests that local context significantly influences the relationship between physical barriers and social boundaries. These findings have important implications for urban policy, indicating that universal approaches to reducing physical barriers may not uniformly impact segregation patterns. Furthermore, our methodological framework provides a robust approach for analyzing spatial pattern associations that can be applied beyond segregation studies to other urban research contexts.

Assessing the Impact of the ERDF on SME Competitiveness: Evidence from a Cross-Country Analysis

Dr. Erica Delugas¹, Dr. Emanuela Sirtori¹

¹CSIL SCRL, Milano, Italy

G20-O1 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 27,
2025, 4:30 PM - 6:30 PM

This study aims to evaluate the effectiveness of a specific policy instrument implemented under the European Regional Development Fund (ERDF) to enhance competitiveness for small and medium-sized enterprises (SMEs). Specifically, it focuses on a funding mechanism designed to support production expansion and business modernisation under Thematic Objective 3 of the 2014–2020 programming period. The analysis compares the implementation of this instrument across three EU member states—Italy, Poland, and Portugal—where variations in policy design, delivery modes, and regional characteristics are expected to influence the instrument’s effectiveness.

The research integrates multiple data sources, including a unique database from the European Commission (EC, 2020) that provides detailed information on operations, beneficiaries, and projects funded through the ERDF and Cohesion Fund. This data is complemented with firm-level financial performance indicators from the Orbis database (Moody’s), allowing for the comparison of beneficiary SMEs with a matched control group of non-beneficiaries. Methodologically, the study aims to employ a staggered difference-in-differences (DiD) approach combined with propensity score matching (PSM).

The findings of this study aim, first, to provide a rigorous assessment of the impact of ERDF support on SME competitiveness, enriching the existing body of knowledge by offering empirical evidence on the effectiveness of the Cohesion Policy. Second, they seek new insights for policymakers and stakeholders by evaluating the conditions under which ERDF support is most effective and how SME-targeted policy instruments can be better designed and implemented. By conducting a detailed analysis of a specific ERDF instrument mobilised to enhance SME competitiveness, this research aims to uncover the critical factors that shape its impact, determining what works, where, and how, thereby contributing to evidence-based policymaking in the field of SME support.

Platform Dependence and Organizational Responses: The Indirect Impact of Digital Platforms on Labor

Prof. Donato Cutolo¹, Mr Jacopo Tramontano², Prof. Valeria Cirillo³, Prof. Dario Guarascio², Prof. Martin Kenney⁴

¹IE Business School, Madrid, Spain, ²Sapienza University of Rome, Rome, Italy, ³University of Bari "Aldo Moro", Bari, Italy, ⁴University of California, Davis, Davis, United States

G23-O3 Labor Markets, Unemployment, Gig Economy, Digital 'Nomads', Amphitheater II - SAKIS
KARAGIORGAS, August 29, 2025, 2:00 PM - 4:00 PM

As the platform economy continues to reshape the way we live, work, and consume, firms across industries increasingly turn to platform-mediated marketplaces to engage with customers. Although prior research highlights how platform-based firms develop strategic responses to cope with risks and vulnerabilities stemming from platform power, it tends to overlook how such uncertainty may alter internal organizational structures. In this study, we examine how reliance on digital platforms influences firms' employment practices. Drawing on a comprehensive dataset from the Digital Platform Survey (DPS), administered by Italy's National Institute for Public Policy Analysis (INAPP) to over 20,000 hotels and restaurants, we find that platform participation has a statistically significant correlation with the use of non-standard employment relationships (NSERs). Specifically, companies that rely on platforms for customer acquisition exhibit roughly 4% higher share of NSERs compared to those that do not. Multiple tests indicate that this effect varies according to structural characteristics, competitive strategies, and contextual factors that expose firms to higher (or lower) levels of dependence on platforms—findings that support our conjecture of a coping mechanism under platform-induced uncertainty. Our study advances the literature on how firms respond to the risks of platform-based intermediation and contributes to ongoing debates about the labor implications of digital intermediation. As platformization intensifies across sectors, these insights carry important implications for both organizational scholars and policymakers.

Cultural Touristic Offer: from Equilibrium to Efficient Tourism Flows

Roberta Capello, Silvia Cerisola, Ms Elisa Panzera¹

¹Politecnico di Milano - DABC, Milan, Italy

S58-S2 Measuring the Social Impact of Tourism in the European Union, E12, August 28, 2025, 4:30 PM
- 6:30 PM

Tourism significantly contributes to local economies, particularly in cultural destinations, where it supports cultural activities and heritage preservation. However, over-tourism raises concerns due to its social, cultural, environmental, and economic costs, often harming local communities and threatening sustainability. Existing studies largely focus on case-specific benefits or costs, lacking a unified framework to assess net benefits by balancing tourism's positive and negative impacts. This work aims at identifying suitable theoretical frameworks for determining optimal and efficient (cultural) tourism flows. In fact, recognizing the limits of identifying one single equilibrium level, the work deepens the reasoning by devising efficient intervals of tourism flows. An empirical analysis is carried out on Italian municipalities to prove the reasoning. Policy suggestions are put forward, aimed at favouring the sustainable management of tourism flows and at making the most of the existing cultural heritage, without damaging the local economic and social environment.

Cultural and Tourism Attractiveness toward Sustainability: A Spatial Analysis of Italian Provinces

Ms Silvia Emili¹

¹Università di Bologna - Dipartimento di Scienze Statistiche, Rimini, Italy

S37 Towards Local Development Through a Sustainable Valorization of Cultural Heritage, B4, August 29, 2025, 2:00 PM - 4:00 PM

Over recent decades, the literature on tourism has emphasized the role of tangible and intangible cultural assets as key components of destination attractiveness, aligning with the recognition of cultural tourism as a major growth market in global tourism (UNWTO, 2004). This trend has impacted cities, regions, and nations alike, prompting intense competition among destinations to develop cultural attractions that serve as "must-see" sights for both cultural tourists and local residents. However, cultural attractiveness is often overshadowed by the dominance of tourism-focused strategies, with cultural appeal subsumed under broader tourism attractiveness metrics. Only recently scholars begun to explore the concept of cultural attractiveness more distinctly, finding a significant relationship between the two separate concepts of attractiveness. This connection and the joint potential to drive socio-economic and environmental sustainability raises important questions for policymakers, according to the (well-recognized) key role of both tourism and culture attractiveness in a sustainable development (European Commission, 2023). Understanding how destinations can enhance their attractiveness, rejuvenate their image, and promote the sustainable development of their territories is essential. However, studying these relationships in isolation risks introducing misspecification issues, potentially leading to unreliable results.

This study contributes to the growing body of literature on the interplay between culture, tourism, and sustainability. In particular, we examine the endogenous relationships between cultural and tourism attractiveness and the sustainable development performance of Italian territories (NUTS-3) in the period 2013–2021, using a panel VAR model with spatial interactions and temporal dynamics. The proposed technique integrates cultural and tourism synthetic indicators with sustainable development measures covering economic (e.g., employment and income growth), social (e.g., education, equality, and health), and environmental (e.g., energy efficiency, air quality, and waste management) dimensions. This framework addresses two key research questions: (1) how cultural and tourism attractiveness impact sustainable development targets, including potential transmission effects across neighboring territories; and (2) how territorial sustainable development performance reciprocally influences cultural and tourism attractiveness.

Preliminary findings indicate that cultural and tourism attractiveness have a positive and statistically significant impact on local sustainable development performance. However, further investigation is required to understand how provinces absorb shocks in any of the three key variables and whether these effects propagate to neighboring areas.

Subjective well-being inequalities in European cities. What explains that large cities are more unequal?

Prof. Nicola Pontarollo³, Prof. Vicente Royuela², Prof. Paolo Veneri¹

¹GSSI - Gran Sasso Science Institute, L'aquila, Italy, ²AQR-IREA Research Group - University of Barcelona, Spain, Barcelona, Spain, ³University of Brescia, Brescia, Italy

S77 The Geography of Political and Life Discontent, G3, August 27, 2025, 11:00 AM - 1:00 PM

This study assesses the contribution of individual and contextual characteristics in explaining life satisfaction inequalities within European cities. By drawing on a decomposition method based on Recentred Influence Function (RIF) regression, we shed light on the persistently higher inequalities and lower levels of life satisfaction observed in large cities compared to their smaller counterparts. We analyse 77 cities across Europe between 2012 and 2022, using four waves of the Quality of Life in European Cities' survey, whose samples are representative at the city level. We find that differences in the individual characteristics of the city population (i.e., composition effect) explain only a small part of the variation in life satisfaction inequality across cities. Most of the differences are captured by a structural effect, namely differences in the higher returns of specific individual characteristics (e.g., education) in large compared to small cities.

Are there any differences in the priorities of municipal councillors' agendas in urban and rural areas? The case of Lithuania

Dr. Viktorija Baranauskiene¹, Dr. Jurga Bucaite-Vilke, Dr. Aiste Lazauskiene, Dr. Ieva Dryzaite

¹Vytautas Magnus university, Kaunas, Lithuania

G19-O1 Urban, Regional and Local Policy Evaluation, G3, August 27, 2025, 2:00 PM - 4:00 PM

The most recent elections for municipal councils and mayors in Lithuania took place on 5 March 2023. This election is exceptional because the new provisions of the Law on Local Self-Government of the Republic of Lithuania have changed the institutional set-up of the municipality. The powers of mayors are separated from those of councillors (the mayor has become the executive and has more powers). Therefore, with the reform of the institutional structure of municipalities, it is important to better understand how local leadership processes are being reshaped and how the conditions for citizens' participation in local democracy are changing, as local government faces many challenges in decision-making: understanding its role, the importance and impact of decisions, the cooperation and representation of local citizens and businesses and their involvement in decision-making and problem-solving, and so on. The aim of this report is to reveal the spatial distribution of the newly elected Lithuanian municipal councillors' attitudes towards the prioritisation of the local government agenda in the country. To achieve the aim of the thesis, quantitative (questionnaire survey) and qualitative (interviews) data were used. The quantitative data is derived from the European councilor questionnaire survey (for the purposes of this report, only the case of Lithuania is presented (the survey was carried out between February and March 2024)). All 1,498 municipal councillors from 60 municipalities were surveyed and 694 questionnaires were received. 24 interviews were conducted in three municipalities in Western Lithuania: Klaipeda city, Klaipeda district and Kretinga district, corresponding to urban, suburban and periphery cases. The data analysis revealed that the preferences of municipal councillors on the prioritisation of agenda items are unevenly distributed across the country. Different regions of the country have different problems, with clear differences between urban (centre) and rural (periphery) municipalities. Policy-makers in the country's peripheral regions are mainly concerned with specific local issues, while those in the cities are more concerned with global issues. The questionnaire survey data were processed using IBM SPSS Statistics and ArcGIS Pro software, and the interviews were analysed using MAXQDA software. This research was funded by a grant („Changing role of local councilor in self-governance: leadership, institutions and communities“, Nr. S-MIP-23-17) from the Research Council of Lithuania.

Food Security in Romania between Potential and Reality

Dr. Monica Mihaela Tudor^{1,2}

¹Romanian Academy - Institute for Agricultural Economics, Bucharest, ROMANIA, ²Research Institute for Agriculture Economy and Rural Development, Bucharest, ROMANIA

G12-O5 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 29, 2025, 2:00 PM - 4:00 PM

Romanian agricultural system is dual, on one hand there are very large farms operating half of agricultural area and, on the other hand, small and medium farms who generates significant amounts of agricultural raw materials out of which an important part remains outside the market. Although, according to specialist estimates, Romania could produce food for 40 million people, it is unable to cover the needs of its current 20 million inhabitants. More than that, the country registers ever-increasing deficits in the trade balance with food products for which, however, it would have sufficient potential to be covered by national resources. In the current context of frequent crises and external shocks affecting the flow of goods and the availability of food globally (pandemics, armed conflicts, blockages in international transport, price volatility resulting from the growing demand for food from an increasingly large global population), increasing autonomy in ensuring food from internal sources appears as a necessity for ensuring economic and social stability. Agricultural policies are called to contribute to this goal by supporting a better integration of Romanian farm products in national agri-food chains. The paper aimed to carry out an assessment of Romania's vulnerability to food insecurity caused by dependence on agri-food imports during the 2013-2023 period, supplemented by an analysis of the contribution of the Common Agricultural Policy (CAP) measures to the reduction of this risk. The study carried out a literature review on the analysed topic and a descriptive analysis of secondary statistical data provided by the National Institute of Statistics - regarding the trade balance and by the Payments and Interventions Agency for Agriculture - regarding the public intervention through CAP measures. The study showed that, during the analysed period, Romania consolidated its position as a supplier of agricultural raw materials with low added value and, on the same time, its dependence on processed food imports significantly increased. CAP measures have had low effectiveness in reducing food insecurity risks. Re-shaping of public policy is needed in order to support local processing sectors for which the trade balance registers the largest deficit and for which Romania already supports the increase in the performance of primary production.

The Impact of EU Funds on Labour Demand: the case of Italian Provinces

Dr. Mauro Lanati¹, Prof. Giorgia Giovannetti¹, Prof. Lisa Grazzini¹, Prof. Annalisa Luporini¹,
Researcher Michel Rizzo¹

¹University Of Florence, Firenze, Italy

G23-O2 Labor Markets, Unemployment, Gig Economy, Digital 'Nomads', Amphitheater II - SAKIS
KARAGIORGAS, August 28, 2025, 4:30 PM - 6:30 PM

This article examines how EU structural and investment funds affect local labour demand. Using Lightcast granular data on online-job postings in Italy, we match quarterly information on EU project disbursements with variations in labour demand at NUTS-3 provincial level. By relying on a shift-share type of instrument, we find that EU funds have a positive effect on the number of postings; the resulting impact is particularly strong on jobs that require green and digital skills and is mostly driven by the extensive margin (number) of project disbursements. Moreover, the results suggest that the effect on labour demand is particularly strong around the middle-low segment of the geographical distribution of socio-economic conditions, while it is not significant in richest and poorest areas. By relying on a gravity model of internal migration we also leverage the allocation of EU funds to investigate potential adjustment mechanisms to labour demand shocks. Our results indicate that the adjustment process operates only through net in-migration of workers from other provinces, while it leaves the number of local firms unaffected.

Spatial Econometric Analysis of the Interrelations of Spatial and Within-Region Income Inequality: The Case of Hungary

Dr. György Vida¹, Dr. Izabella Szakálné Kanó¹

¹University of Szeged - Faculty of Economics and Business Administration, Institute of Economics and Economic Development, Szeged, Hungary

G16-O2 Statistical And Econometric Methods of Urban and Regional Analysis, G1, August 27, 2025,
2:00 PM - 4:00 PM

The current challenges of globalization, digitalization, and the energy transition cast a new light on regional competition and social polarization. These transformative processes influence economic structures and labor markets, often exacerbating existing disparities. One striking manifestation of social polarization is the worldwide increase in income inequality, which underscores the importance of examining both spatial and within-region income disparities to better understand their implications for economic and social cohesion.

In this presentation, we investigate the evolution of spatial and within-region income inequalities in Hungary over the period from 2010 to 2020, with particular attention to their complex interrelations. Our analysis employs weighted Gini coefficients and Coefficient of Variation to uncover inequalities manifesting in both territorial and social dimensions. In addition, the research utilizes a spatial econometric approach to examine the causal factors behind these differences, using the Eigenvector Spatial Filtering (ESF) method to correct for spatial autocorrelation, thereby providing a more reliable understanding of the determinants of income disparities.

Our findings emphasize that although income differences between regions in Hungary have diminished, within-region inequalities have persisted and, in some cases, have even intensified—particularly in certain urban areas and designated peripheral rural regions. This trend suggests that economic convergence at the regional level does not necessarily translate into more equitable income distribution within regions, highlighting the need for targeted policy interventions.

This research not only sheds light on post-socialist regional dynamics but also endeavors to propose policy recommendations aimed at reducing income disparities and promoting balanced, sustainable regional development. Strategies such as place-based economic support, improved access to education and digital infrastructure, and tailored labor market policies could play a crucial role in mitigating disparities and fostering long-term social and economic cohesion.

The Impact of Amazon on Italian Local Labor Markets: a Staggered Difference-in-Differences Approach

Mr Jacopo Tramontano¹, Prof. Valeria Cirillo², Prof. Dario Guarascio¹

¹Sapienza University Of Rome, Rome, Italy, ²University of Bari "Aldo Moro", Bari, Italy

YSS3, G3, August 28, 2025, 11:00 AM - 1:00 PM

Amazon is the dominant digital platform in e-commerce. Its diffusion in Italy began in 2011, with a sudden expansion of coverage between 2018 and 2021, in which the company has built 35 new facilities. Amazon's local impact on wages and employment is an empirical question of relevance for local decision-makers. E-commerce can be beneficial for wages and employment in core and complementary industries, such as logistics and transportation. It can however decrease them in brick-and-mortar retail and in trade-exposed goods producers. Further, buyer market power effects can be present in subcontracting, increasing employment yet decreasing wages. This paper, using income tax data at the municipality level coming from the Italian Ministry of Economics and Finance, estimates the net effect of two different types of Amazon facility, Fulfillment Centers (FCs) and Delivery Stations (DSs), on Italian local labor markets. FCs are located farther away from urban centers, and employ most logistics jobs. DSs are smaller facilities located in cities, where most consumers are and retail is more present. The centers are first pooled together to estimate a general "Amazon effect". An analysis differentiated between types of Centers then sheds light on potential heterogeneities between different typologies of local labor market. The paper relies on a staggered difference-in-differences methodology allowing for cohort-time heterogeneous effects, using not-yet-treated controls. Several robustness checks are performed. Results indicate that the impact of Amazon on per capita wages is negative, while no impact is detected on unemployment rates. Amazon Delivery Stations decrease wages in local labor markets, while Amazon Fulfillment Centers increase unemployment. The results are interpreted as supporting the hypothesis of a negative net impact of Amazon Centers driven by losses in retail jobs.

The Role of Circular Economy in Shaping Regional Economic Resiliences01

Prof. Blanka Šimundić¹, Prof. Vinko Muštra, Dr. Zvonimir Kuliš

¹University Of Split, Faculty of Economics, Business and Tourism, Split, Croatia

S01-S2 The Spatial, Regional and Urban Dimensions of Circular Economy, Amphitheater II - SAKIS

KARAGIORGAS, August 27, 2025, 2:00 PM - 4:00 PM

Debates in economic geography about regional resilience to shocks, intensified by the 2008 crisis and the COVID-19 pandemic, continue (Bourdin et al., 2023). Sutton et al. (2023) refine the understanding of resilience as the ability to withstand, adapt, and transform amid disruptions. Key dimensions include preparation, resistance, and recovery, with resilience taking different forms such as engineering, ecological, adaptive and transformative. Transformative resilience (Lemke et al., 2023) involves reconfiguring regional innovation systems for sustainable development. In this context, the circular economy promotes resilience by improving resource efficiency, reducing waste, and spurring innovation (Kennedy & Linnenluecke, 2022), offering a global alternative to traditional growth-driven production models (Ghisellini et al., 2016).

A circular economy replaces the traditional linear model with processes that reduce, reuse, recycle, and recover materials across scales, from individual products to entire cities, to foster sustainable development (Zisopoulos et al., 2022). The European Commission's industrial strategy projects that this shift could save €600 billion, cut 450 million tons of CO₂, boost GDP by 0.5% by 2030, and create 700,000 jobs (European Commission, 2020). Research also links circular economy practices to stronger economic growth (Hysa et al., 2020). Furthermore, Di Stefano et al. (2023) argue that circular models help multinational enterprises enhance resilience by reducing raw material dependence, mitigating supply chain risks, and fostering efficiency and new revenue streams.

This paper explores the link between circular economy principles and regional economic resilience, focusing on the impact of circular economy practices in the context of the COVID-19 economic shock. Regional economic resilience is measured using traditional performance metrics such as changes in gross value added and labor market indicators (Giannakis & Bruggeman, 2020). The circular economy is assessed with the Circular Economy Static Index (CESI), which includes socio-health, economic, and environmental dimensions (Silvestri et al., 2020). Other independent variables are also included (Sutton & Sutton, 2024).

Our study focuses on NUTS 2 regions in the EU, with data sourced from ARDECO and Eurostat. We employ OLS regression and the Spatial Durbin Error Model (SDM) to analyze the relationship between CESI and regional economic resilience. Results are expected to confirm that the circular economy enhances resilience by promoting resource efficiency and waste reduction. The study emphasizes the need for targeted policies to facilitate the transition to a circular economy, urging governments and regional authorities to incentivize circular business models, invest in innovation, and encourage cross-regional cooperation for greater impact.

Determinants of Total Factor Productivity and Estimation of a Spatially Adjusted Sustainable Productivity Index: A Study of Brazilian Industry

Prof. Humberto Francisco Silva Spolador¹, Prof. André Luis Squarize Chagas², Prof. Carlos Roberto Azzoni², Prof. André Luiz Ferreira e Silva³

¹"Luiz de Queiroz" College Of Agriculture - University of São Paulo, Piracicaba, Brazil, ²University of São Paulo, São Paulo, Brazil, ³Universidade Federal do Pará, , Brazil

G02-O3 Regional Growth Models, Competitiveness, and Convergence, B1, August 28, 2025, 9:00 AM - 10:30 AM

As a prerequisite for achieving environmental protection and sustainable socioeconomic development, the Brazilian economy, particularly its industrial sector, needs to develop the economically sustainable use of its production resources.

Despite the importance of the industrial sector for Brazilian economic development, research evaluating the determinants of total factor productivity (TFP) at the level of economic activities is still relatively scarce in the economic literature. To address this gap, this research develops an econometric model that integrates spatial econometric techniques with stochastic frontier estimation to analyze the evolution of productivity and technical efficiency by segment of activity within the sector. The model explicitly accounts for spatial spillover and spill-in effects, recognizing the interconnectedness of industrial activities across regions and their impact on inefficiency levels.

Additionally, we propose a sustainable productivity index that adjusts traditional productivity measures to incorporate environmental impacts, such as greenhouse gas emissions and other socio-environmental factors. By combining spatial econometric methods with stochastic frontier analysis, this framework captures both direct and indirect effects of inefficiencies, enabling a more nuanced understanding of regional disparities in technical efficiency and their environmental implications. The development of these empirical models offers valuable insights for guiding public policies, fostering regional cooperation, and stimulating demand from public agencies and private entities for more comprehensive data on this sector. This approach promotes one of the strategic sectors for sustainable development in Brazil, aligning industrial productivity with environmental and socioeconomic objectives.

Does Location Matter? Evidence from Brazil's O&G Concession Auctions

Dr. Eduardo Luzio¹, Dr. André Luis S Chagas¹, Pedro Barros¹

¹USP - Department of Economics, São Paulo, Brazil

G16-O1 Statistical And Econometric Methods of Urban and Regional Analysis, G1, August 27, 2025,
11:00 AM - 1:00 PM

This paper investigates how locational features influence bid values in Brazil's oil and gas (O&G) concession auctions. Using a Spatial Autoregressive Model (SAR), we develop a novel approach incorporating both geographical proximity and the chronological order of auctioned blocks in a spatial weighting matrix. This methodological innovation allows us to assess how past bidding outcomes influence present bids, capturing spatial and temporal interdependencies overlooked in prior research. Additionally, we enhance our spatial econometric analysis with Geographic Information System (GIS) techniques, incorporating new variables such as distance to the coast, exploratory wells, producing fields, and seismic data availability. Our empirical analysis covers ten auction rounds (R1–R10) from 1999 to 2008, marked by significant regulatory and market changes. Brazil transitioned from a state monopoly (Petrobras) to a competitive auction system after the 1997 Oil Act established the National Petroleum Agency (ANP) as the sector's regulator. These auctions allocated O&G exploration rights to private firms through a first-price sealed-bid mechanism, where bidders had limited geological information and faced high uncertainty, particularly in frontier basins. The results confirm that location matters in O&G auctions. Bidders do not rely solely on the inherent characteristics of individual blocks but also incorporate geospatial and historical bidding patterns. Our SAR estimates indicate a significant spatial effect ($\rho \approx 0.25\text{--}0.30$), implying that past winning bids influence bid values in one block in neighboring blocks. Additionally, the proximity to previously leased blocks and producing fields positively correlates with bid values, as does the availability of 3D seismic data and pre-stack depth migration (PSDM) surveys. These findings suggest that bidders extract valuable information from the outcomes of past auctions, reinforcing the existence of information externalities. Beyond theoretical contributions, our findings offer policy implications for O&G auction design. The ANP's minimum reserve price setting has historically underestimated block values, which could be adjusted to better reflect market and geological conditions. Moreover, public investment in seismic surveys before auctions could enhance market efficiency by reducing information asymmetry. This study advances the literature by integrating spatial econometrics and geospatial analysis to improve the understanding of O&G bidding behavior. Our approach has broader applications for other natural resource auctions, where spatial dependencies are crucial in price formation.

Labor market in the soybean and biodiesel production chain in Brazil

Dr. Fernanda Lisbinski¹, Dr. Rodrigo Silva¹, Dr. Nicole Castro¹

¹CEPEA - USP/ESALQ, Piracicaba, Brazil

G12-O4 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 29, 2025, 11:00 AM - 1:00 PM

In 2023, Brazil consolidated its position as the world's largest producer and one of the leading exporters of soybeans and their by-products. Understanding the labor market within the soybean and biodiesel production chain in Brazil allows for an assessment of its socioeconomic impact, employment trends, and the formulation of policies to foster income generation. This study examines the evolution of the labor market in this production chain using data from the Continuous PNAD (National Household Sample Survey) of IBGE and a methodology adapted from Barros et al. (2019) and Castro et al. (2020). The research considers both paid and unpaid Employed Population (EP), analyzing its distribution by occupational status, education level, gender, and earnings. The identification of the EP was carried out using the National Classification of Household Economic Activities (CNAE-Domiciliar 2.0), complemented by sectoral disaggregation coefficients to capture indirect sectors. To measure the evolution of EP in the inputs and agribusiness services segments, productivity series and value-added indicators were applied. This approach enabled the study to capture the specific dynamics of the labor market within this production chain. The results indicate an increase in EP, from 1.14 million in 2012 to 2.32 million in 2023, highlighting the sector's growing importance to the Brazilian economy. The agribusiness services segment increased its EP from 793,000 to 1.6 million in the period. The primary segment (soybean production) also grew, with EP rising from 214,000 to 479,000. Real wages in the primary segment increased by 33.74%, from R\$ 2,730 to R\$ 3,651, reflecting the positive impacts of agricultural modernization and global demand. The study also reveals shifts in the labor force profile, with an increase in employment formalization and worker qualification. The proportion of EP with complete secondary education rose from 39.72% to 46.58%, while the share of workers with higher education increased from 17.37% to 26.26%. The findings suggest that the soybean and biodiesel production chain plays a relevant role in employment generation and the socioeconomic development of producing regions. While intensive mechanization reduced labor demand in the primary segment, it fostered the creation of more qualified jobs in the agribusiness services sector. Furthermore, economic policies, such as the mandatory blending of biodiesel with diesel and tax incentives, were essential in sustaining employment growth and stability in the production chain.

Is "Education Involution" Good or Bad: Peer Competition in Higher Education Admission on Schooling Consequences

Ms Ruoshui He¹, Dr Honghong Wei²

¹Jönköping University, Jönköping, Sweden, ²Shanghai University, Shanghai, China

S24 Educational Inequalities: Exploring Diverging Territorial Patterns, D12, August 28, 2025, 9:00 AM - 10:30 AM

Between 1978 and 1998, China experienced the Gaokao reintroduction, the One-Child Policy, and higher education initiatives, creating an intensely competitive educational environment for the post-1980 cohorts. This paper investigates the effects of peer competition on schooling outcomes, mainly referring to the final educational attainment in China, using a cohort-based Difference-in-Differences (DID) approach. Our analysis finds that individuals from high-competition regions receive 0.42 fewer years of schooling than those from low-competition regions. The negative impact is especially pronounced among rural and male students. Regarding the individual incremental effects, for every 0.01 increase in the acceptance rate, the number of years of schooling increases by about 0.052 years (about 20 days). There is an increase in years of schooling by up to 1.22 years from the most competitive regions to the least competitive regions. The findings highlight the concept of educational involution, where increasing competition leads to social waste and diminishing returns of efforts without proportional gains in education outcomes. This study suggests policy interventions to mitigate these negative effects, advocating for equal access to educational resources.

Agricultural modernization index proposal for Brazilian microregions

Dr. Rodrigo Silva¹, Dr. Fernanda Lisbinski¹

¹CEPEA - USP/ESALQ, Piracicaba, Brazil

G12-O5 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 29, 2025, 2:00 PM - 4:00 PM

The modernization of Brazilian agriculture has played a relevant role in the country's economic development, significantly impacting productivity, competitiveness, and rural labor structures. Despite the diffusion of modern agricultural practices, significant regional disparities persist, reflecting historical, economic, and environmental factors. This study aims to measure and analyze the degree of agricultural modernization in Brazilian microregions, proposing an Agricultural Modernization Index (AMI) to assess and compare their trajectories over time. To achieve this, the study employs Factor Analysis, a multivariate statistical method that reduces data complexity by identifying underlying structures among a large set of correlated variables. The dataset consists of 558 Brazilian microregions, covering key indicators extracted from the 2006 and 2017 Agricultural Censuses, conducted by the Brazilian Institute of Geography and Statistics (IBGE). Sixteen variables were selected, including mechanization levels, use of modern inputs, access to technical assistance, financing, labor intensity, and productivity indicators. The Factor Analysis extracted two key factors: 1 – Adoption of Modern Inputs and Mechanization, which encompasses the use of fertilizers, pesticides, machinery, tractors, and access to credit and technical assistance. 2 – Intensive Use of Labor, which captures employment rates, labor productivity, and salary expenditures per worker. The results reveal a heterogeneous modernization process across Brazilian regions. The Southern, Southeastern, and Central-Western regions exhibited the fastest progress in Factor 1 (Adoption of Modern Inputs and Mechanization), while the Northern and Northeastern regions progressed slower, reinforcing existing regional inequalities. Regarding Factor 2 (Intensive Use of Labor), Southern, Northern, and Northeastern regions showed declines, whereas Central-Western and Southeastern regions experienced significant growth in labor-related modernization indicators. The findings confirm that while agricultural modernization has expanded nationwide, its pace and intensity remain uneven, benefiting more developed regions and exacerbating disparities in rural Brazil. The Southern and Southeastern regions maintain a high level of technological advancement, whereas many microregions in the North and Northeast still face structural barriers to modernization, such as limited access to credit, mechanization, and technical assistance. These results underscore the need for regionally tailored public policies that promote equitable access to modern agricultural technologies, credit lines, and rural extension programs. The AMI proposed in this study serves as a support for policymakers to assess modernization patterns and design interventions that support sustainable and inclusive agricultural development across Brazil.

Measuring the Just Transition in the European Union: Application of I-distance method

Prof. Sabina Hodžić¹, Dr. Asel Doranova², Prof. Veljko Jeremic³

¹University Of Rijeka, Faculty Of Tourism And Hospitality Management, Opatija, Ika, Croatia,

²Tilburg University, Tilburg Sustainability Center, Tilburg, Netherlands, ³University of Belgrade, Faculty of Organizational Sciences, , Belgrade, Serbia

S87-S1 Territorial Transitions: Exploring the Scene of Participatory Actions and Common, F5, August 27, 2025, 4:30 PM - 6:30 PM

Nowadays, all countries around the world are facing environmental problems, i.e. climate change being the most challenging. Hence, all countries are trying to address these problems to achieve transition to a more sustainable future. This transition does not run easily and will for sure have implications on the economy, environment, and it will affect economic actors, but also different groups of society, including marginalized communities. The overall goal is to assure that all actors benefit from the transition following the concept of leaving no one behind. Therefore, this concept in the literature is known as just transition. The concept of just transition is presented as a framework that guides our transformation into ecological society in a socially just and equitable manner. The objective of this study is to improve the conceptual framework of the Just Transition monitoring and evaluation by identify the main themes capturing also the governance dimensions in this framework, in addition to economic, social, environmental. In this paper, we will critically review the exiting frameworks used by the European Commission, and other international organisations and discuss possibilities for more comprehensive coverage. In addition, propose a new monitoring tool: the Just Transition Index, which is a composite index that allows regions to see themselves in ranking. We applied I-distance method to the just transition index to evaluate its weighting scheme and structure. Furthermore, based on the I-Distance method for calculating the just transition index for the analysed EU Member States, we wanted to examine the scores and ranking of EU Member States involved in the just transition process. Based on selected dimensions and indicators with the latest publicly available data, the results of the analysis were very interesting. Based on the ranked list of countries and the I-distance values, the best performing countries are Luxembourg, the Czech Republic and Hungary. This can be explained by the fact that these countries are making great efforts (financially and socially) to achieve decarbonisation and involve all stakeholders in society in the just transition process.

Investigating the Benefits of Promoting the Institutionalization of Tainan City Historic Street Districts: The Perspective of New Cultural Governance

Prof. Hsien-hsin Cheng¹

¹National Cheng Kung University, Tainan, Taiwan

G22-O6 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, G2, August 29, 2025, 2:00 PM - 4:00 PM

The promulgation of the "Tainan City Self-Government Ordinance for the Revitalization of Historic Street Districts" in Taiwan's cultural capital in 2012 provided the legal basis for historic street district operations. Formulating historic street districts involves examining the historical resources and atmosphere of the current environment as the basis for promoting revitalization. Historic street districts are flexible in scope. However, comprising a large scale of 880 hectares, these districts are essential to cultural governance plans. Furthermore, coordinating promotion and guidance plans is necessary for organizing communities and groups in small areas. Moreover, formulating historical street districts is broad enough to be incorporated into urban planning. As such, it has become a significant review reference for urban planning involving historical preservation projects (zoning intensity, planned roads, urban design, etc.).

The present study investigated the identification methods regarding historic houses, people-oriented walking environments, and compact land-use construction methods involved in formulating historic street districts. The operation content is similar to the international concept of a "15-minute city" that has developed within the past 10 years. This study analyzed the social and economic revitalization benefits of accumulating historical resources in street districts based on long-term community building. It proposes an urban regeneration paradigm for Taiwan's cultural governance from theory to institutionalization and implementation in daily life.

The Urban Beauty under RC Technology - Taking Taipei's Inner City Development by Land & Building Association as Example

Prof. Chengche Chen¹

¹Nanhua University, Dalin, Taiwan

G22-O3 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, B6, August 27, 2025, 2:00 PM - 4:00 PM

Taipei's Inner City was the first metropolitan core during Japan's colonial expansion. It undertook tremendous transformation during several decades. Current discourses concerning its transformation lacks non-governmental viewpoint in terms of empowered agency, street block's viewpoint in terms of urban planning, as well as constructive technology's viewpoint in terms of architecture. The study tries to supplement previous mentioned three themes by focusing on the period of time during 1909-1932, when the international trend paid much attention to the beauty of streetscape and technological development of reinforced concrete. With the nexus of these two factors, essences of modernity were embedded in Taipei's urban evolution.

Previous studies were limited by mainstream data thus putting a stress on authorized Interpretations. Contrarily, the study bases on histories of association and patent, therefore it could further look at non-governmental knowhow during reinforced concrete's developing process. Regarding the concept of preservation, the study is not limited to appearance and style. It adds constructional viewpoint and reconsiders technological value of Inner City's non-governmental architecture. Especially for Kikumoto Department Store, which is the masterpiece of the most advanced developing company Taiwan Land & Building Association during Japan colonizing period, and a few remaining street buildings in Inner City, together they demonstrate the process of modernization by the perfection of reinforced concrete technology and the formation of streetscape that were done by the non-governmental sector.

Excessive inequality and economic growth: estimating thresholds and tolerance levels

Prof. George Petrakos¹, Dr. Spyros Niavis¹, Prof Dimitris Kallioras¹, Dr. Alexandra Sotiriou¹, Dr Kleoniki Natalia Petrou¹

¹University Of Thessaly, Volos, Greece

S38-S4 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 28, 2025, 9:00 AM - 10:30 AM

The goal of this paper is to discuss theoretical frameworks explaining why inequality may become harmful for an economy after some critical threshold and empirically assess the critical level beyond which desirable diversity in household income turns into undesirable or harmful inequality. In addition, the paper examines to what extent this threshold varies across types and dimensions of actual or perceived measurements of inequality and what are the policy implications of these. The analysis is based on secondary data and an expert survey conducted exclusively within the framework of the ESSPIN project. The results suggest that income inequalities have a non-linear impact on growth performance. Lower or modest levels of inequality appear to have a positive impact on growth, which is related to the benefits of extra effort, profit seeking endeavours, innovative ideas and persistence. However, after some level, inequality turns out to have a negative impact on growth. This turning point tends to vary with the level of development, as in more advanced countries income inequality becomes a growth barrier at earlier levels of inequality. These results have also been supported by an experts' survey providing robust evidence for a non-linear relationship between income inequality and economic performance.

Closing emergency treatment centers in Sweden: Impact on travel distance and time-to-treatment

Prof. Kenneth Carling², Dr Ebba Henrekson³, Dr Vijay Paidi², Prof. Niklas Rudholm¹, Eliel Stenström⁴

¹Institute of Retail Economics, Stockholm, Sweden, ²Dalarna University, Borlänge, Sweden, ³Marie Cederschiöld University and Stockholm School of Economics, Stockholm, Sweden, ⁴University of Oxford, Oxford, United Kingdom

G25-O1 Enriching Research and Policy Methods in Regional Science: Digital Tools, Artificial Intelligence, Participatory Methods, Mapping Techniques, Stakeholder Involvement, Amph 3, August 27, 2025, 11:00 AM - 1:00 PM

Remote areas in Sweden are characterized by considerable distances and time delays in the treatment of trauma patients. Thus, having a dense network of emergency treatment centers (ETCs) located in a manner that minimizes travel distance and time-to-treatment seems prudent.

Despite the importance of time-to-treatment, there have recently been several closures of ETCs in Sweden. In Västra Götaland, the ETC in Lidköping closed in 2023. In the regions of Kalmar and Västmanland, the full scale ETCs in Oskarshamn and Köping have been reduced to a form of treatment centers that does not treat severe trauma anymore. Finally, in the region of Västernorrland, a decision is likely to be made on March 11 to restructure the ETC in Sollefteå (19 000 inhabitants), no longer providing surgery at that facility. We have investigated how these closures affected travel distances and time-to-treatment both for the population in the region, but also for the population in the affected cities.

Our results show that the closure in Lidköping increased the average distance to the nearest ETC in the region by 1,13 km. The closure in Oskarshamn increased it by 15.14 km, while the closure in Köping increased it by 8.07 km. Finally, the proposed closure in Sollefteå would increase the average distance by 8.20 km. Even in bad traffic conditions, this likely will not increase travel time by more than 20 minutes. However, also including the time to prepare the trauma victim for transport, it could be that in some cases the time-to-treatment will now exceed the so-called golden hour (Cowley, 1975; 1976).

For the inhabitants of Lidköping, Oskarshamn, Köping and Sollefteå, the direct consequences of the closures on time-to-treatment are much more dire. After the closure in Lidköping, the nearest ETC is in Skövde, 48.20 km away with an estimated travel time of 48 minutes. For the inhabitants in Oskarshamn, the nearest fully equipped ETC is in Västervik which is 70.30 km away (67 minutes), while for the inhabitants of Köping the distance to the nearest fully equipped ETC in the region (in Västerås) is 40.60 km away (35 minutes). After the proposed restructuring of the ETC in Sollefteå, all patients requiring surgery would be transported to either Sundsvall or Örnsköldsvik, journeys of roughly 100 kilometers and with transportation times of approximately 90 minutes. In this case, the time-to-treatment would therefore always exceed the golden hour (Cowley, 1975; 1976).

Distributional effects of child benefits in Greece and Italy at local level

Prof. Francesco Figari², Mr. Marcello Matranga², Mr. Francesco Cellino¹, **Prof. Manos Matsaganis¹**

¹Polytechnic University of Milan, Milano, Italy, ²University of Eastern Piedmont, Novara, Italy

S33 Spatial Microsimulation: Methodological Advances and Empirical Applications, E1, August 27,
2025, 2:00 PM - 4:00 PM

The paper showcases a new spatial microsimulation model, developed as an extension of EUROMOD (the tax-benefit model for the European Union), which allows us to evaluate the fiscal and distributional impact of public policies at local level. Adding spatial detail to microsimulation requires microdata reflecting the characteristics of individuals and households in particular regions, cities, or neighbourhoods. Given the lack of geographically disaggregated microdata at sub-national level, spatial microsimulation combines small area census data, tax return data in aggregate form, and survey microdata at the national or at best regional level, in order to simulate a synthetic population whose characteristics mirror as closely as possible those of the local communities under examination. We use EU-SILC 2019 data to create representative samples at local level by modifying the sampling weights based on information derived from population census and income tax returns. We apply the model to assess the anti-poverty effects of child benefits in Greece (Επίδομα παιδιού) and Italy (Assegno Unico Universale) at local level. We assess such effects by reference to two poverty benchmarks: a relative and an extreme poverty threshold set at 60% and 40% of median equivalent income respectively. We also present results in terms of absolute poverty in Italy, by reference to a threshold determined by the country's national statistical agency (Istat), set equal to the minimum level of consumption expenditure deemed necessary "to avoid severe forms of social exclusion". Our results reveal considerable heterogeneity at local level, and inform the debate on the optimal design of public policies.

Understanding Regional Development Traps and the Role of Local Capabilities: Evidence from Brazilian Regions

Dr. Renato Garcia¹, Dr Mauricio Serra¹, Dra Suelene Mascarini¹, Mr. Caio Cezar Fernandes¹

¹University Of Campinas, Campinas, Brazil

G03-O7 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 29, 2025, 2:00 PM - 4:00 PM

One of the central topics in economic geography is understanding why some regions grow faster while others struggle to sustain economic prosperity and well-being. Studies on regional performance indicate persistent variations in economic growth, productivity, employment, and innovation. In Europe, research has identified “development clubs”, where regions experience divergent growth trajectories, with middle-income regions often facing stagnation. A similar pattern is observed in developing countries, where some regions achieve sustained growth while others remain trapped in low or middle-income stagnation. The notion of middle-income traps at the national level describes economies that transition from low- to middle-income but fail to progress further. When applied to subnational regions, this concept requires adaptations, as developing regions are often trapped at lower GDP per capita levels than their European counterparts. These traps manifest through long-term income decline, weak productivity gains, and employment stagnation. Moreover, policy efforts tend to focus on dynamic regions, neglecting those at risk.

This paper introduces the Regional Development Trap Index (RDT) for Brazil, adapting the development trap framework to subnational regions. Following Diemer et al. (2022), we construct a synthetic indicator of regional economic dynamism, considering productivity, employment, and income trends over time. Our findings reveal significant regional disparities, shaped by historical, structural, and institutional factors. The study covers a period of economic growth (2002–2014) followed by crisis and stagnation (2014–2020), demonstrating uneven regional impacts.

Results show that highly industrialized regions are at high risk of falling into development traps, while low-income areas also face significant risks. The geographic concentration of these risks suggests spatial dependence on regional economic stagnation. Between 2014 and 2022, shifts in regions most vulnerable to development traps indicate a procyclical behavior influenced by economic downturns. Notably, central Brazilian regions, major agricultural exporters, showed resilience due to their integration into global commodity markets. Their economic performance remained stable despite national economic slowdowns, reducing their exposure to development traps. In conclusion, the risk of regional development traps in Brazil is driven by economic, social, and institutional factors, deeply tied to historical path dependencies. Addressing these challenges requires a comprehensive understanding of the structural determinants shaping regional trajectories, paving the way for targeted policies to mitigate long-term stagnation risks.

Riding the Pandemic Storm: How Endogenous Resources and Local Ecosystems Shaped “Pandemic Winners” in Italian Manufacturing

Mr Federico Ninivaggi¹, Mrs Eleonora Cutrini¹

¹Università Di Macerata, Ancona, Italy

G01-10 Urban, Regional, Territorial and Local Resilience, B5, August 29, 2025, 2:00 PM - 4:00 PM

Riding the Pandemic Storm: How Endogenous Resources and Local Ecosystems Shaped “Pandemic Winners” in Italian Manufacturing

Federico Ninivaggi, f.ninivaggi@unimc.it, Department of Economics and Law, University of Macerata, Italy

Eleonora Cutrini, eleonora.cutrini@unimc.it, Department of Economics and Law, University of Macerata, Italy

Keywords: Firm Resilience, COVID-19, Italy

Abstract

The paper investigates the firm level factors that influenced Italian manufacturing companies’ ability to cope with the COVID 19 crisis, focusing on the likelihood of becoming a “pandemic winner” in terms of employment and sales post crisis performance. The study looks at how endogenous resources and exogenous contextual factors worked to build resilience and recovery trajectories using extensive firm level data and probit regression analyses.

From an internal features standpoint, results indicate that swimming upstream firms (SUFs) have greater financial soundness, and a robust digital presence. These results support earlier research (Arrighetti et al., 2021) that suggests proactive innovation tactics and resource endowment can lessen the cleaning impacts of severe recessions. Regarding exogenous factors, estimates indicate that local ecosystem features significantly impact the chances of became a “winner” firm. The likelihood of successfully navigating the crisis is increased by working in a technologically advanced field and utilizing external connections (such as joining business groups or network contracts). This supports recent research (Cutrini & Ninivaggi, 2024) that relate supportive settings and cooperative arrangements to increased company resilience.

Overall, the study contributes to the literature on crisis driven restructuring, by emphasizing the interplay between firm specific resources (size, financial stability, productivity) and local context (district specialization, and firm networks) in determining which manufacturers emerge as top performers during a severe economic shock as COVID-19 pandemics.

References

Arrighetti, A., Landini, F., & Lasagni, A. (2021). Swimming upstream throughout the turmoil: Evidence on firm growth during the great recession. *Scottish Journal of Political Economy*, 68(3), 322-344.

Cutrini, E., Ninivaggi, F. Pandemic crisis and firm survival: evidence from the Italian manufacturing industry. *J. Ind. Bus. Econ.* 51, 265–297 (2024). <https://doi.org/10.1007/s40812-024-00309-0>

Understanding Future AI-Green Technology Directions from Past Technological Trajectories

Dr. Tommaso Ciarli², Dr Önder Nomaler¹, Prof Bart Verspagen³

¹UNU-MERIT, United Nations University, Maastricht, The Netherlands, ²UNU-MERIT, United Nations University, Maastricht, The Netherlands, ³UNU-MERIT, University of Maastricht, Maastricht, The Netherlands

S88-S3 Twin Transition and its Unequal Geography, B2, August 28, 2025, 4:30 PM - 6:30 PM

This study investigates the intersection of Artificial Intelligence (AI) and green technologies using scientometrics and generative AI (ChatGPT). By analyzing approximately 43,000 technological trajectories derived from European Patent Office data, we map current trends and project future innovation pathways. Focusing on 950 trajectories explicitly referencing AI/machine learning, a sample of 32 was analyzed in-depth using ChatGPT. The AI summarized patent information, predicted future directions, and identified related technologies. This process revealed key paradigms like "Automation and Control Systems" and "Environmental Management and Sustainability" characterizing past innovations. Projected future paradigms include "Integration with IoT and Smart Systems" and "Enhanced AI and Machine Learning Integration." A tripartite network visualization highlights clusters around areas like mobility, wind turbines, and environmental monitoring. While the pilot study demonstrates the potential of combining scientometrics and generative AI, limitations include the small sample size and replicability challenges. Ongoing work expands the analysis to the full dataset, explores reproducible AI models like Llama, and compares findings with established NLP methods for robust validation. This research ultimately aims to provide a comprehensive understanding of the evolving landscape of AI-driven green technologies.

Adjustments of Labor Markets to Automation Technologies: Unpacking Regional Asymmetries in the EU

Dr. Florencia Jaccoud³, Dr Fabien Petit², Dr. Tommaso Ciarli¹

¹UNU-MERIT, United Nations University, Maastricht, The Netherlands, ²University College London, CEPEO, London, UK, ³University of Camerino, Camerino, Italy

G23-O1 Labor Markets, Unemployment, Gig Economy, Digital 'Nomads', Amphitheater II - SAKIS
KARAGIORGAS, August 28, 2025, 9:00 AM - 10:30 AM

This paper investigates labor market adjustments to three key automation technologies—robots, information and communication technology (ICT), and software and database--across 217 regions in 20 European countries from 1995 to 2017. By clustering regions based on their structural characteristics and developing a measure of regional exposure to these technologies, we analyze how automation influences regional employment and wages.

Our findings emphasize the critical role of regional differences in shaping the impact of automation. First, robots are found to have a positive effect on employment, but only in high-productivity core regions. In contrast, ICT and software and database have a more significant impact on low-productivity, industry-intensive regions. We argue that this pattern reflects the later adoption of these technologies in lagging areas, highlighting the uneven pace of technological diffusion across regions.

Improving Employee Participation in Energy Transition: The Case of the Sector of Machinery

Prof. Dimitris Kallioras¹, Dr. Spyros Niavis¹, Mrs. Maria Adamakou¹, Mr. Charalampos Samantzis¹, Ms. Faviola Alexiou¹

¹University of Thessaly, Volos, Greece

S40-S1 Just Transition Governance: The Challenges of Justice, Place-based strategies and monitoring mechanisms, F12, August 27, 2025, 11:00 AM - 1:00 PM

The need for inclusive energy transition in the machinery sector arises from the evolving nature of work and the accompanying changes in the labor market. In the context of the machinery sector, decarbonization focuses on reducing the environmental impact of the machine production by transitioning to cleaner energy sources, implementing sustainable practices, and minimizing carbon emissions. Such a transition brings about significant changes in the organization of work within the sector. Traditional roles may evolve or become obsolete, while new skill sets and competencies become increasingly important. As a result, there is a pressing need for inclusivity in managing this transition to ensure that all stakeholders, including employees, are adequately supported and equipped to navigate these changes. Employees play a crucial role in this transition process. It is essential for them to be proactive in upskilling and reskilling to remain competitive in the evolving job market. Additionally, they should actively engage with employers and industry stakeholders to voice their concerns, seek support, and participate in decision-making processes related to energy transition. Guaranteeing the rights of employees during this transition is paramount. This includes ensuring fair treatment, protection against discrimination, and access to training and development opportunities. Labor unions and advocacy groups can play a crucial role in representing the interests of workers and negotiating agreements that safeguard their rights in the face of changing work dynamics. Against the backdrop of inclusivity, the paper presents the results of empirical research that consists of online surveys, expert interviews, and focus group. Through this endeavor, policymakers, practitioners, and researchers are equipped with effective strategies for fostering meaningful public engagement towards energy transition as regards the machinery sector. The paper is structured into sections of diagnosis, scenarios, and policy recommendations and aims at achieving the implementation of the twin transition plan in the machinery section around the axes of improved efficiency, environmental compliance, empowered workforce, and positive stakeholder relations.

Regional business cycles (synchronization) and regional inequalities in the EU

Prof. Dimitris Kallioras¹, Dr. Spyros Niavis¹, Prof. George Petrakos¹, Dr. Maria Tsiapa¹

¹University of Thessaly, Volos, Greece

S38-S3 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 27, 2025, 4:30 PM - 6:30 PM

Against the backdrop of the EU economic integration process, the paper brings together a couple of distinct strands of literature, thus adding a salient perspective to the economic integration literature, studying a couple of distinct – though highly related – issues: (a) the patterns of regional business cycles synchronization; (b) the impact of business cycles on regional inequalities. Business cycles are defined as “a type of fluctuation found in the aggregate economic activity of nations that organize their work mainly in business enterprises”. Ergo, business cycles refer to the concerted cyclical upswings and downswings that characterize a span of macroeconomic variables - the most notable one is real GDP – and aggregate economic activity, in general. Typically, business cycles consist of a quartet of recurrent, but not periodic, stages: (a) expansion; (b) crisis; (c) recession; (d) recovery. Apparently, the notion of business cycles is not compatible with the neoclassical understanding of the (spatial) economy, which operates always in equilibrium and the only variations from a steady-state growth path may be arising from random or external shocks. Utilizing EUROSTAT data that refer to 276 EU regions (NUTS II level) and covering the period 1990-2020, the paper presents clear-cut empirical evidence, gained using sound and rigorous methods of empirical analysis, and provides a novel contribution to an area of research that has been (re-)gaining increasing interest. This is so as macroeconomic shocks – that influence regional inequalities – are considered to be the main driving forces behind business cycles.

Lost Learning and Regional Resilience: The Impact of COVID-19 on Educational Inequality in Italy

Prof. Alessandra Michelangeli¹, Prof. Giorgia Casalone², Dr. Kateryna Tkach³

¹Università di Milano Bicocca - DEMS, Milan, Italy, ²University of Piemonte Orientale, Novara, Italy,

³Gran Sasso Science Institute, L'Aquila, Italy

S24 Educational Inequalities: Exploring Diverging Territorial Patterns, D12, August 28, 2025, 9:00 AM - 10:30 AM

While education is a fundamental right protected by the Italian Constitution, significant territorial disparities in learning outcomes persist and have been further exacerbated by the Covid-19 pandemic. Students from disadvantaged backgrounds and certain regions experienced more substantial learning losses.

This paper examines educational inequality in the first two educational cycles (primary and lower secondary school) by analyzing individual results from the national standardized tests administered by the National Institute for the Evaluation of the Education and Training Educational System (INVALSI). We compare the 2021 INVALSI test results with those from previous years to assess the impact of distance learning on educational disparities. Additionally, we identify the regions where students demonstrated greater resilience to pandemic's effects.

Educational inequality is measured using Generalized Entropy Indexes (GE), which are then decomposed across different socio-demographic subgroups.

Our results reveal that stronger educational outcomes are concentrated in wealthier regions, while poorer outcomes are more prevalent in areas marked by social marginalization, including high percentages of low-income households, including single-parent families and foreign-born residents.

Preventing inequality before it starts: the role of pre-market policies in combating income disparities in Europe

Dr. Maria Tsiapa¹, Prof Paschalis Arvanitidis¹

¹University of Thessaly, Volos, Greece

S38-S2 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 27, 2025, 2:00 PM - 4:00 PM

There is considerable consensus among the scientific and policy-making communities that a mix of policies is required to reverse and more efficiently eradicate the rise of income inequality. To achieve this, policies should not only address the consequences of inequality (ex post) but also prevent its emergence through proactive measures (ex ante). However, many existing policies, such as economic safety nets, tax policies, and short-term employment creation, primarily function as ex post responses. While these measures can alleviate the immediate effects of inequality, they fail to address its root causes or provide long-term solutions. Conversely, a more sustainable approach is to address inequalities at their origins rather than relying solely on redistribution through taxes and transfers. In this reasoning, the pre-market stage involves equipping individuals and firms with the necessary tools to engage in economic activity, such as skills training and adequate infrastructure.

This paper highlights the significance of pre-market policies by analysing their impact, alongside post-market policies, on income inequality levels in European countries over the long-term period of 2005–2021. Pre-market policies, such as investments in education, healthcare, and housing, can create a more equitable foundation, ensuring individuals are better equipped to participate in the economy from the outset. By addressing inequalities at their roots, these policies can lead to more sustainable and inclusive economic growth. Additionally, this paper explores a comparative analysis of areas with varying degrees of urbanisation, examining how these differences influence the effectiveness of pre-market policies. Understanding the unique challenges and opportunities present in different regions allows policymakers to tailor their strategies to address specific local contexts more effectively.

By offering evidence-based insights into the long-term benefits of pre-market interventions, this paper aims to support policymakers in designing proactive, equity-driven strategies that promote inclusive economic growth. By bridging research and policy, it provides a foundation for more targeted and effective measures that address income inequality at its roots, ultimately fostering a more resilient and fair economic landscape.

Regional insights on SMEs exposure to climate change threats

Mr Anastasis Avgerinos Katsinis¹

¹European Commission, Ispra, Italy

G08-O3 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, Amphitheater I -
SAKIS KARAGIORGAS, August 27, 2025, 4:30 PM - 6:30 PM

Climate change poses multiple risks that require urgent action within the European Union. The escalating frequency of tragic events related to natural hazards highlights the need for spatially targeted analyses and policy design, that can inform sophisticated regional development planning and above all integrated regional strategies focused on resilience and / or crisis response.

This study focuses on the vulnerability of Small and Medium-sized Enterprises (SMEs) to regional climate hazards. Leveraging a micro dataset of SMEs, we geolocated these firms and matched their locations with climate hazard projection data from Copernicus. This approach allowed us to evaluate the regional SMEs' exposure to a range of climate risks, such as heatwaves and wildfires, while also analysing the covariance of these threats within specific regions.

Our findings reveal that regions can experience simultaneous exposure to multiple climate hazards, compounding their vulnerability. Moreover, certain threats are more prominent in certain areas: for example, heatwaves represent more of a threat in the South of Europe, whereas energy stress represents more of a threat in the Northern Europe. To assess potential economic impacts, we also modelled the relationship between projected heatwave exposure and labour productivity, identifying significant potential losses for SMEs.

By bridging data on the location of SMEs, climate hazards, and labour productivity, this research contributes to the debate on sustainability transitions, emphasising the need for integrated regional strategies to enhance the resilience of SMEs, and ensure they put in place sufficient adaptation and mitigation measures to remain competitive.

Municipal resilience through digital governance: the influence of maturity levels

Dr. Ilona Bartuseviciene¹, Dr. Mindaugas Butkus¹, Dr. Rita Toleikiene¹, Dr. Vita Jukneviciene²

¹Mykolas Romeris University, Vilnius, Lithuania, ²Siauliai Academy Vilnius University, Siauliai, Lithuania

G01-O8 Urban, Regional, Territorial and Local Resilience, B5, August 29, 2025, 9:00 AM - 10:30 AM

By highlighting municipal capacity to cope with adversities, this study raises important questions about how the maturity of digital governance interacts with various resilience strategies and how that interaction influences municipalities' crisis response. Although most of the existing research (Shen et al., 2023; Profiroiu and Nastacă, 2021; Carlsson et al., 2023) reveals that digital transformation serves as a facilitator that enables the transition from recovery resilience to transformative resilience, others (Gangneux and Joss, 2022) argue that the pandemic was a major driver for digital transformation. Thus, this study attempts to reveal the interconnections between digital governance and organizational ability to cope with adversities through their resilience. Using different levels to explore digital maturity, that is, digital consistency, digital adaptation, and digital transformation, and different levels to explore resilience, that is, bounce-back, bounce-forward, and bounce-beyond, we analyze these interconnections to find out whether higher digital governance municipalities demonstrate higher resilience levels and vice versa.

Methodology/methods. Systematic literature review and nonparametric structural equation modeling (SEM-PLS) methodology.

Results (preliminary). The systematic literature review results allowed us to conclude that digital governance has been pivotal during the pandemic, enabling organizations to continue to function during crises across different contexts. However, we observed that most studies address resilience from a general perspective, such as resilience, capacity to change, or crisis. The same was concluded about digital governance. We found that most articles examining organizational capacity to cope with adversities by enhancing digital governance capacity approached it from a general perspective or used the concept of digital transformation, which in some cases was used to signal separate elements of digitalization instead of true digital transformation. Thus, these findings suggest exploring the municipal capacity to cope with adversity from the perspective of different levels of digital and resiliency maturity. Further, using the data collected from all sixty municipalities in Lithuania, we will explore the interconnectedness amongst different levels of digitalization and resilience, which could provide insights into whether higher levels of digital governance enhance municipal resilience.

Originality. In seeking to understand more about the resilience development patterns in municipalities through the different maturity levels of digitalization, we have turned our attention to the interactions that provide more profound knowledge about the development patterns of municipal capacities to cope with adversities through the enablement of digital governance.

This project has received funding from the Research Council of Lithuania (LMTLT), agreement No. S-VIS-23-10.

Ultra-High Voltage Grid Expansion on Household Energy Use Behavior: Evidence from a Quasi-Natural Experiment in China

Mr Zaenhaer Duman¹, Ms Ruoshui He², Mr Andreas Kontoleon³

¹Beijing Normal University, Beijing, China, ²Jönköping University, Jönköping, Sweden, ³University of Cambridge, Cambridge, United Kingdom

G05-O5 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 28, 2025, 4:30 PM - 6:30 PM

This study examines the impact of Ultra-High Voltage (UHV) grid expansion on household energy consumption in China, leveraging a quasi-natural experiment framework. We analyze a sample of 27,511 households across 25 provinces. Our results indicate a significant increase of 6.8-7.0 percent in electricity consumption following the UHV grid expansion, with the effect being most pronounced in the input provinces. Specifically, households in these regions demonstrate a notable shift in energy usage, with a marked transition from traditional energy sources—such as coal and fuel oil—to cleaner energy alternatives. The findings suggest that UHV grid expansion plays a crucial role in enhancing access to electricity, thereby influencing household energy choices and contributing to the broader transition toward cleaner energy consumption. These results provide implications for energy policy, particularly in promoting sustainable energy consumption and reducing reliance on polluting energy sources in developing economies.

The Northern Metropolitan Border of Bogotá: Urban Expansion and Transformation of the Ecosystem Value of the Territory

Dr. Juan Eduardo Chica-Mejía¹, Dr. Laura Amézquita, Architect Andrés Rueda

¹University of Bogotá Jorge Tadeo Lozano, Bogotá, Colombia

G22-O5 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, G5, August 29, 2025, 11:00 AM - 1:00 PM

The northern metropolitan area of Bogotá is characterized by a dispersed urban growth, caused primarily by processes of decentralization of the population and economic activities relocated from the metropolitan center. This chapter reviews the case of the Chicú River basin — in the north of the city — where the municipalities of Cota, Tenjo and Tabio are located. The case of this basin is analyzed in accordance with the hypothesis that the processes of anthropization of the non-urbanized metropolitan territory — caused by patterns of dispersed urban growth and changes in land use into productive economic activities — are transforming the ecosystem services provided by the area and putting the environmental sustainability of the region at risk. Using GIS tools, satellite images, and census data from 2005 and 2018, changes in land use cover were analyzed in three areas: blue, associated to river setbacks; green, connected to the pressure exerted on the land by changes in the intensive dynamics of production; and grey, associated with the growth of urban centers under patterns of dispersion in rural land. The results allowed us to generate scenarios informed by public policy decision-making that are useful to harmonize territorial growth processes and to mitigate negative externalities, in order to safeguard the existing ecosystem services.

The 15-Minute City Model and the EU's Responses to Sustainability Challenges

Prof. Daniela-Luminita Constantin¹, Prof. Camelia Delcea¹

¹Bucharest University of Economic Studies, Bucharest, Romania

S07 Future of EU Cohesion Policy Post-2027. In Search of an Effective Response to Major Challenges of Our Time, G4, August 27, 2025, 11:00 AM - 1:00 PM

The EU Mission for Climate Neutral and Smart Cities – also known as “Cities Mission” – aims to deliver 100+ climate-neutral smart cities by 2030 and inspire the other cities to follow suit by 2050. Given the planning principles the 15-Minute City model is based on - proximity to essential services, proximity to public transport, density, mixed land use, walkable and cyclable streets, public space and place-making, inclusiveness, ubiquity (EIT, 2022) – it can contribute to offering cleaner air, safer transport and less congestion to citizens and thus, to respond to the European Green Deal ambition to reduce gas emissions by at least 55% (EU, 2021). This paper aims to examine the preparedness for the “Cities Mission” through the lens of the 15-Minute City, proposing as case study the District 2 of Bucharest Municipality, which is included in this mission. The investigation is based on desk research using available data and information from regional and local development institutions, combined with interviews with representatives of relevant stakeholders (e.g. district town hall, regional development agency, etc.). The methodology behind the 15-Minute City Index proposed by Badii et al. (2021) is employed in our research to assess the effective compliance of the District 2 of Bucharest Municipality with the 15-Minute City defining aspects. Additionally, based on the data offered by the SonyCLS website, <https://whatif.sonycls.it/15mincity>, the information related to the performance of District 2 with respect to various indicators, such as those referring to access to cultural activities, learning, healthcare, outdoor activities, physical exercise, eating, services, supply and provision, movement around the district, in terms of 15-Minute City is further discussed. The results can offer a useful orientation for decision-makers, civil society/community and entrepreneurs in District 2 with regard to the most favourable positioning within the “Cities Mission” while implementing the 15-Minute City principles, able to contribute to maximizing their benefits, with synergies between the multiple components involved.

Mapping and analyzing innovation club convergence in European Regions

Dr. Diego Chavarro¹, Dr Tommaso Ciarli², Dr Bernardo Caldarola³

¹Independent Researcher, Ciutadella De Menorca, Spain, ²UNU-Merit, Maastricht, Netherlands, ³JRC, Sevilla, Spain

S61-S2 Innovation, Entrepreneurship and Industrial Dynamics in Rural Areas, D12, August 27, 2025,
4:30 PM - 6:30 PM

This study investigates the dynamics of economic convergence and divergence across European NUTS3 regions, emphasizing the role of innovation and rural-urban distinctions within innovation clubs. Building on prior research on regional inequalities and European convergence policies, the study identifies four distinct innovation clubs—Core-Core, Core-Periphery, Periphery-Core, and Periphery-Periphery—based on regional innovation and economic performance, as well as centrality in knowledge networks. Using network analysis, clustering techniques, and regression models, the research examines inter- and intra-club convergence patterns and the influence of rurality, urbanization, and geography on economic growth.

Key findings demonstrate that convergence is not uniform across regions but primarily occurs within similar clubs, such as rural-to-rural or urban-to-urban. Rural regions exhibit higher growth rates compared to urban areas but face stronger diminishing returns, reflecting faster convergence. However, these dynamics are more strongly influenced by core-periphery structures and geographic factors than rural-urban distinctions. Core regions, often concentrated in economically dominant countries like Germany, France, and Italy, exhibit high centrality in knowledge exchange, while peripheral clusters are slightly more balanced in their composition and reflect lower innovation capabilities. Rural regions are predominantly located in the least integrated and lowest-performing Periphery-Periphery club, while urban areas are concentrated in the Core-Core and Periphery-Core clusters.

Contrary to aggregate analyses, within-club regressions reveal that rurality has minimal influence on growth dynamics after accounting for club membership and geographic location. Geographic disparities are evident, with Eastern European regions experiencing stronger convergence and catch-up effects compared to their North-Western and Southern counterparts.

This research underscores the importance of tailored regional policies that address local conditions, spatial heterogeneity, and the complex interplay between innovation, geographic context, and economic growth. Future work aims to expand the analysis by incorporating additional science, technology, and innovation indicators to further explore the role of innovation in driving convergence and to refine the characterization of regional dynamics across the rural-urban and core-periphery spectra.

The Geography of Integration and Regional Growth in the EU

Dr. Alexandra Sotiriou¹, Professor George Petrakos¹, Ms Stavroula Alexiou¹

¹University Of Thessaly, Βόλος, Greece

S38-S1 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 27, 2025, 11:00 AM - 1:00 PM

The paper investigates the unevenness in EU trade integration patterns and the resulting growth asymmetries at the regional level. With the use of panel econometric models at the NUTS II level based on a novel trade dataset, the analysis estimates the impact of trade integration on regional growth and the heterogeneous effects of different types of trade partners on peripheral regions. The results suggest that the impact of integration is asymmetric for peripheral regions trading with core EU trade partners, revealing that different development levels are associated with different types of integration and unequal growth returns.

The impact of the EU Cohesion Policy on regional inequalities

Prof George Petrakos¹, Prof Dimitris Kallioras¹, Dr Alexandra Sotiriou¹, Dr. Yiannis Saratsis¹, Ms Stavroula Alexiou¹

¹University of Thessaly, Department of Planning and Regional Development, Volos, Greece

S38-S5 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),

E14, August 28, 2025, 4:30 PM - 6:30 PM

The paper focuses on three areas of research where the evidence is not yet very solid. First, the paper examines the impact of the EU Cohesion Policy on three types of inequality that may be related to each-other: within-country regional inequalities, between countries inequalities and within-countries income inequalities. Second, the paper examines what policy tool (i.e., investment, infrastructure, human capital, or environment) is more likely to reduce spatial inequalities or income inequalities. These policy tools are to some extent related to pre-market, in-market, or post-market policies and help identify which mix is more likely to reduce different types of inequalities. Third, the paper examines whether administrative efficiency and the absorbing capacity of Managing Authorities at the national or regional level affect the effectiveness of the EU Cohesion Policy to reduce inequalities.

The evolution of Regional Innovation Systems: Comparing STI and DUI modes across European regions

Prof. Georgios Fotopoulos², Dr. Nikolaos Filippopoulos¹

¹University Of Peloponnese, Tripolis, Greece, ²University Of Peloponnese, Tripolis, Greece

G03-O5 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 28, 2025, 4:30 PM - 6:30 PM

Regional innovation is a key driver of economic development, with differences in innovation capabilities contributing to the divergence between leading and lagging regions. This study investigates the mechanisms driving two distinct modes of innovation: the science, technology, and innovation (STI) mode, which relies on formal research and development (R&D), and the doing, using, and interacting (DUI) mode, which emerges from practical, experience-based knowledge, and interactive collaboration. While previous research has explored these modes, limited attention has been given to their temporal evolution and how the mechanisms supporting each mode change over time, particularly in economically lagging regions.

Using fuzzy-set Qualitative Comparative Analysis (fsQCA), we examine a comprehensive sample of European regions, distinguishing between economically and innovation-developed regions and their lagging counterparts. QCA is well-suited for identifying causal configurations, but its atemporal nature poses challenges when analyzing evolving processes. To address this limitation, our study incorporates a temporal dimension, enabling us to observe the dynamic evolution of Regional Innovation Systems (RIS) and identify shifts in the mechanisms underlying both STI and DUI modes over time. This temporal perspective offers new insights into how regions adapt their innovation strategies.

By comparing the temporal trajectories of STI and DUI modes across regional contexts, our study contributes to the broader discussion on the role of alternative innovation pathways in fostering regional development. These insights are particularly relevant for regional innovation policy, as they highlight the importance of supporting both formal R&D activities and experiential learning processes, depending on the context. By recognizing and leveraging diverse innovation mechanisms, policymakers can design more effective interventions that help especially lagging regions close the development gap and enhance their long-term innovation performance.

Accessibility across Italy: A grid cell approach

Dr. Vania Licio¹, Prof. Anna Maria Pinna¹

¹University Of Cagliari and Crenos, Cagliari, Italy

S89-S1 Empirical Evidence and Policies for Sustainable and Resilient Cities and Territories, G4, August
28, 2025, 4:30 PM - 6:30 PM

This paper aims to address and discuss the measurement of within-country accessibility by computing travel times for Italy. Accessibility is a multidimensional concept commonly quantified through various indices, reflecting the proximity of goods, services, and employment opportunities for individuals and firms. Travel times are the flip side of the coin: they provide essential information for discussing accessibility. Typically, domestic accessibility is measured at the municipal level, the smallest unit of analysis used in official national statistics; however, this territorial division may lack the granularity needed to capture specific variations within each unit. Conversely, supranational accessibility leverages finer information; however, if collected worldwide, global satellite and geocoded data may struggle with fine-grained accuracy within a country. To tackle these issues, we propose and analyze some measures of accessibility, defined by travel times to cities, transport infrastructure, and facilities at the sub-municipal level, using grid cells of five-by-five kilometers for the whole Italian territory and combining geocoded information with data from the national census and governmental offices. The measures computed in this paper offer a finer-grained quantification of accessibility, capturing differences within the same administrative level. Additionally, the grid cell approach, an analytical framework independent of political or administrative boundaries, allows for a more exogenous accessibility measurement. The results presented in this study highlight considerable variance in accessibility across Italy. Northern Italy demonstrates the shortest travel times, supported by its extensive transport networks, particularly in the Po Valley of northwestern Italy, which connects major urban and industrial hubs. However, mountainous areas in the Alps face longer travel times due to challenging topography, reflecting persistent connectivity barriers. These findings highlight how developed transport networks contribute to reduced travel times, a pattern less evident in central and southern regions. Central Italy exhibits mixed results: while urban centers benefit from strong transport links, rural and mountainous areas, particularly in the Apennines, experience significant delays due to geographic constraints and limited infrastructure. In southern Italy, disparities become more pronounced. Regions such as Calabria, Basilicata, and parts of Campania show high travel times, reflecting sparse transport networks and rugged terrain. The islands of Sardinia and Sicily face some of the most severe accessibility challenges, with extensive areas exceeding 90 minutes of travel time to critical infrastructure or urban centers.

Sustainable Retail in rural areas: myth or possibility?

Prof. Krystian Heffner¹

¹University of Economics in Katowice, Katowice, Poland

S28 Declining Resilience of Shopping Centres Effects in the European Urban Space, D12, August 29,
2025, 2:00 PM - 4:00 PM

Insufficient or declining access to services and trade, especially basic trade, is increasingly becoming a reason for difficulties in the provision of basic products and the declining attractiveness of rural areas for rural residents as well as for the incoming population and often also for the development of the tourism and leisure function. On the one hand, there is a continuous decline in the number of retail food shops in rural areas. On the other hand, the continuous consolidation and spatial concentration of rural groceries and, more broadly, of all retailing, reduces their accessibility.

As a result, this is one of the important causes of gradual depopulation and the related economic, social and infrastructural disadvantages. This increasing restriction of access to both services and trade located externally (transport and communication accessibility) and the decreasing offer of trade located in individual villages is setting in motion processes of marginalisation in many rural regions.

If sustainable retailing is understood as retail organisations undertaking actions to ensure that their operations, manufacturing and production processes do not have a negative impact on the environment, it is difficult to see such initiatives in rural areas, particularly marginalised ones.

Using a multivariate analysis of the changes taking place in this field in rural areas in Poland, the article attempts to assess the extent and significance of these processes.

Navigable rivers and transport infrastructure in the Democratic Republic of the Congo

Dr. Vania Licio¹

¹University Of Cagliari and Crenos, Cagliari, Italy

G05-O6 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 29, 2025, 9:00 AM - 10:30 AM

This paper analyzes the effect played by the transport infrastructure in the development of the Democratic Republic of the Congo (DRC). Historically, water was the main mean of transport for the movement of goods and people. However, thanks to advances in technology, during the last two hundred years, railways, first, and highways, then, became the main means of transport in modern economies. In the developing and underdeveloped world, rivers hold their key historical role. States that benefit from the existence of navigable inland waterways (like rivers or canals) take advantage of their transport function. In these countries, the often poor, ruined, and fragmented rail and road networks represent the main obstacles that prevent the positive effect that transport infrastructure could have on economic growth, and the dependence on natural means of transport is higher compared to the developed world. The Congo River, which constitutes an intricate transport system of waterways of more than 15,000 km, represents the backbone of the transport infrastructure in the DRC, where the trimodal river-railway-road network is headed by the river. Rivers, if navigable, have a twofold 'nature': they are a pure geographical condition (first-nature geography) and act as a transport infrastructure (second-nature geography). This 'dual role' is still neglected and has not explicitly been considered in the literature. On the other hand, together with the man-made infrastructure, navigable rivers constitute an integrated system of complementary 'goods': areas, where rivers are navigable, do not have railways or main roads. By using 10x10 km grid cells and geocoded data, this paper investigates, on the one hand, how beneficial is the Congo River for the economic development (mining activity, crop production, nightlight luminosity) of the DRC; on the other, it focuses on the relationship between natural and man-made transport infrastructure. Empirical results show that if both railways and roads, although in a dilapidated condition, positively affect contemporary economic development, the Congo River and the whole network of tributaries and small rivers fall short of the role they could have in the economic growth of the country. The inter-modal river-rail-road transport system is still far from being a real opportunity for the country: the waterway transport benefits from the existence of the man-made one, but the reverse does not apply.

Greek island-proofed policies with emphasis on transport services

Prof. Theodore Tsekeris¹

¹Centre of Planning and Economic Research (KEPE), Athens, Greece

G14-O1 Left Behind Areas, Insularity, Inner Areas and Border Regions, B4, August 27, 2025, 2:00 PM - 4:00 PM

The present study describes the problem of the increased insularity and transport costs, and the reduced market accessibility of Greek islands, including suggestions based on a recently completed project about the evaluation of the Islands' Transport Equivalent for firms. This policy measure aims to harmonise the cost of transporting goods to and from the islands with the corresponding land transport costs (in the mainland country) to ensure equal treatment and minimise the economic disadvantage of island businesses compared to mainland businesses. The study employs a unique micro-dataset from the Islands' Transport Equivalent platform, including the geographical and logistics features of 1,026,469 freight shipments during 2021, based on the receipts of payments made by firms for outsourcing transport services to companies with public-use truck vehicles, together with demographic and socio-economic data at the island level.

The set of plausible indicators calculated from processing these data depicts different aspects and the high spatial heterogeneity of the transport cost, (consumer and producer) market accessibility and competitiveness of Greek islands. Specifically, the findings underscore the importance of population size, geographical proximity to large markets and network connectivity, and signify the severe trade imbalances among consumers' (importers') and producers' (exporters') accessibility to and from the Greek islands. Moreover, the use of shipment cost in accessibility indicators significantly alters the accessibility hierarchy and the trade imbalances among islands, compared to the use of network distance, as it incorporates inherent characteristics of the logistics and product markets.

The results are supplemented with findings of the Islands' Entrepreneurship Barometer, which was conducted in 2023, using a structured questionnaire, aiming to provide a permanent tool for recording, systematic study and monitoring of indicators of islands' competitiveness, comparable to the Eurobarometer surveys. The latter results underline the multitude of factors influencing the cost of business operation and the benefits of the Islands' Transport Equivalent measure for businesses, in conjunction with the need to simplify application procedures for businesses compensation, and improve coastwise transport connections, local infrastructure and logistics equipment. Additionally, the more targeted policy measure of Fuel Transport Equivalent is presented as an example for potentially establishing the Islands' Cost Equivalent for specific product categories, given the availability of information about the corresponding retail prices. The synthesis of the above research findings can offer valuable insights into addressing data-related challenges and supporting island-proofed policies emphasising on transport services to promote the business environment and the sustainable development agenda.

The in-demand skills portfolios of regions and their impact on productivity

Ms Alexandra Badort¹, Dr. Bernardo Caldarola, Dr. Tommaso Ciarli, Mr Sidharth Rony

¹Luiss Guido Carli, Rome, Italy

S10 The Knowledge and Technological Relatedness of UK National and Regional Economies, G5,
August 29, 2025, 2:00 PM - 4:00 PM

This paper studies the relation between in-demand skills portfolios and productivity growth across UK and EU regions, using data from over 200 million Lightcast Online Job Advertisements (2014–2020) mapped to the ESCO framework.

First, we identify emerging skills in region-industry pairs at granular levels (NUTS3 and NACE-4), revealing long-term trends, particularly in service industries affected by digital technology adoption. Second, we construct a bipartite network connecting industries to skills, using a Bipartite Weighted Configuration Model to validate links. From the network, we derive indices quantifying the coherence, diversity, and complexity of regional skills portfolios, measuring skill sophistication using methods from the economic complexity literature. Third, we study the relation between skill sophistication and labour productivity using data from ARDECO.

Our findings provide evidence on the critical role of complex skills, which may be related to the adoption of increasingly complex technologies, in driving regional productivity. We distinguish among industries requiring diverse skills. We also distinguish the role of skills required to adopt more general-purpose technologies, such as IT and digital skills portfolios.

Tourist Destinations – from administrative and historical limits to social media constructions

Dr. Oana Mihaela Stoleriu¹, Miss Teodora Georgiana Mihaila¹, Dr. Bogdan Constantin Ibanescu¹

¹University Al. I. Cuza Of Iasi, Romania, Iasi, Romania

G15-O1 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness, Quality of Life, E1, August 27, 2025, 4:30 PM - 6:30 PM

Social media platforms have become a major factor influencing the way we imagine, visit and experiences destinations. Online reviews often surpass the informative role and credibility of traditional information sources like tourist brochures or websites. Based on subjective perceptions and experiences, visitors' reviews shared online do not always overlap the official understandings and delineations of a territory. However, their role of social media data in shaping travel perceptions, planning and behaviour, continues to increase.

Centered on visual content, Instagram is one of the most influential platforms in tourism and a key resource for understanding how tourists perceive, illustrate and interact with destinations. Furthermore, the study of geolocated Instagram images allows a deeper understanding of their territorial implications, such as spatial visiting patterns, the most or least visited areas, or the perceived limits of a destinations.

This study aimed to analyze the differences between official (i.e. administrative and historical) and social media-induced limits of a tourist destination. The case study is one of the most famous rural destinations in Romania - Bucovina, well known for its well-preserved rural traditions, mountain landscapes and several UNESCO labeled churches. The tourist destination named Bucovina is a concept created and strongly promoted since 2008 by local authorities as part of the marketing strategy for the tourist capitalization of the department of Suceava (a NUTS 3 territory). On the other hand, the name Bucovina refers to a larger historical region that expanded beyond the limits of Suceava department and the frontier with Ukraine.

In this context, our research aimed to identify the geographical limits of the tourist marketing concept known as Bukovina based on people's spatial perceptions expressed through Instagram geotagged posts. Therefore, our study data is represented by Instagram geolocated posts associated with the hashtag "discoverBucovina", which is the most popular hashtag connected with this destination. The analysis of places associated in people's perceptions and posts with Bucovina, together with the location of tourism facilities and flows, highlights a new spatial perspective regarding this destination, compared to the administrative and historical delineations. Keeping in mind the limitations of social media data but also its powerful influence of the tourism market, this study highlights a very relevant, dynamic and experiential reality that is much needed in the conception of effective tourism capitalization and promotion strategies. The results are of interest not only to the academic environment but especially to local and national authorities and DMOs.

Impact of Neighbourhoods on Maternal Health: A Study of Eastern India

Ms Anweshia Sarkar¹, Dr. Papia Raj²

¹PhD Student, Indian Institute of Technology Patna, Patna, India, ²Associate Professor, Indian Institute of Technology Patna, Patna, India

G01-O1 Urban, Regional, Territorial and Local Resilience, B4, August 27, 2025, 11:00 AM - 1:00 PM

Neighbourhood is an important determinant of health, especially for women. Existing literature suggests that neighbourhood characteristics can mitigate or exacerbate any health disorder among women. However, very few studies have focused on analysing the impact of neighbourhoods on women's maternal health. The research gap is particularly pronounced in developing countries like India, where neighbourhood factors influencing maternal health remain underexplored. The present study attempts to analyse the influence of urban neighbourhoods on women's maternal health in Eastern India. According to the National Family Health Survey (NFHS round 5 from 2019 to 2021), India's Eastern region ranks low on various maternal health indicators. Kolkata, the largest urban agglomeration of Eastern India, was selected as the study area to gain a representative understanding of the situation. This study employed a mixed-methods approach, collecting data from both secondary and primary sources. NFHS-5 served as the secondary data source, while primary fieldwork was completed through surveys and Focus Group Discussions (FGDs). Neighbourhoods' characteristics were examined based on their physical and social environments. The physical environment encompassed footpaths, garbage disposal, walkability, streetlights, pollution, sanitation, drinking water, traffic congestion, crowding, distance to healthcare facilities, the prevalence of street-food outlets, and green space. The neighbourhood's social environment incorporated neighbourhood-level socio-economic status, cohesion, connection, trust, social capital, stress, crime, and violence. Maternal health indicators related to antenatal and postnatal care were also calculated. Antenatal care was assessed based on gestational check-ups. Similarly, postnatal care was examined through components of institutional deliveries with skilled assistance. A logistic regression analysis explored the relationship between maternal health indicators and parameters of the neighbourhood environment. Findings suggest that a favourable physical environment in the neighbourhood, characterised by high walkability, low pollution levels, adequate sanitary facilities, and proximity to healthcare facilities, is associated with positive maternal health outcomes. Neighbourhood social environment characteristics such as low socioeconomic status and lack of social cohesion among neighbours induced stress among women, resulting in complications during gestation. Crime and violence were also negatively related to maternal health status. In conclusion, the study emphasises the need for policy interventions that improve neighbourhood conditions. These improvements are essential for enhancing maternal health among women in Eastern India.

Urban Innovation as a Driver of Sustainable Development: A Local Perspective

Ms Edurne Zubiria-Ferriols¹, Ms Teresa Martínez Fernández¹, Mr Luis Cuni Monserrat¹

¹Universitat Jaume I, Castelló, Spain

G02-O2 Regional Growth Models, Competitiveness, and Convergence, B1, August 27, 2025, 4:30 PM - 6:30 PM

The objective of this study is to highlight the growing importance of knowledge and innovation in urban environments, particularly in how local governments respond to the evolving demands of their citizens. To reach this purpose, we carried out a review of the attributes a city must possess to be considered an innovative city, from the perspective of the Ministry of Science Innovation, and Universities (Spain). By examining these attributes, we aim to understand the essential factors that contribute to urban innovation and how they align with contemporary challenges faced by municipalities.

Innovation in the public sector is no longer just an option but a necessity, placing new responsibilities on municipalities as they navigate the challenges of globalization and seek to leverage opportunities within their territories.

The academic community has made various attempts to define the concept of an "innovative city," often overlapping it with related terms such as "smart city", "sustainable city", or "eco-city". However, there is still no universally accepted definition or clear conceptual framework.

In 2010, the Spanish Ministry of Science, Innovation and Universities launched the “City of Science and Innovation” award to recognize municipalities that excel in fostering innovation, and Innpulso Network was founded (Spanish city network). In 2025, 90 Spanish municipalities are holding this distinction. Given this context, this study will analyze the key attributes that define an innovative city and explore the relationship between local innovation and sustainability.

The methodology used is based on analyzing the attributes a city must possess to be considered an innovative city, taking as a reference those established by the Spanish Ministry of Innovation, Science, and Universities. To complement this information, a qualitative study was conducted through in-depth interviews between 2020 and 2023 with municipal responsables for promoting local public policies.

The findings of this study highlight that innovation and sustainability are intrinsically linked, as today’s environmental and social challenges demand creative and disruptive solutions that transform traditional models. Innovation drives the development of new technologies, processes, and strategies that enable more efficient resource use, reduce pollutant emissions, and create more sustainable products and services. At the same time, sustainability provides an ethical and pragmatic framework that guides innovation toward objectives that enhance social well-being while preserving the natural environment. Both fields contribute to long-term responsible economic growth, ensuring that present needs are met without compromising the ability of future generations to meet their own.

Innovation for Climate Resilience. Toward A New Urban Paradigm: Lessons from the Spanish Innpulso Network

Ms Edurne Zubiria-Ferriols¹, Ms Teresa Martínez Fernández¹, Mr Luis Cuni Monserrat¹

¹Universitat Jaume I, Castelló, Spain

G01-10 Urban, Regional, Territorial and Local Resilience, B5, August 29, 2025, 2:00 PM - 4:00 PM

The increasing frequency and intensity of extreme weather events have underscored the urgent need for climate resilience strategies in urban environments. Cities and towns need to establish a response mechanism aimed to fostering sustainable recovery and long-term adaptation in municipalities severely affected by climate-related disasters. This work aims to analyse the Innovation Programme for Climate Resilience fostered by a Spanish city network (Innpulso Network) and highlight its potential as a model for future resilience initiatives.

Extreme weather events has caused in the Valencia Region severe damage to critical infrastructure, housing, and livelihoods, presenting significant challenges for reconstruction and climate adaptation. Traditional recovery efforts often focus solely on restoring lost assets; however, the Innpulso Network Program adopts a transformative recovery approach. By prioritizing both mitigation and adaptation, the initiative seeks to build resilient and climate-neutral municipalities. Given the inevitability of future climate events, the program leverages science and innovation as key drivers for sustainable urban development.

By analysing the Innovation Programme for Climate Resilience we can see it is structured around a bottom-up approach, ensuring that the needs of affected cities and towns are at the core of the recovery strategy. The methodology includes: participatory diagnosis, science-based policy development, innovation transfer and experimentation, pilot projects and case studies, and scalability and governance models.

Focusing on the results and key findings, the program has yielded significant advancements in climate resilience and innovation-driven policy implementation, including: enhanced municipal capacities, integration of climate neutral policies, implementation of nature-based solutions, knowledge transfer and collaboration and a scalable framework for resilient urban development.

The Spanish Innpulso Network serves as a crucial vehicle for local innovation and knowledge transfer, bridging the gap between scientific research and local governance. By transforming affected municipalities into benchmarks of sustainability and resilience, this initiative provides a scalable model for broader regional and national climate adaptation efforts. The program's integrated approach—grounded in science, participatory governance, and technological innovation—demonstrates the potential of collaborative networks in fostering urban resilience against future climate challenges.

Spreading this experience and programme not only provides role models, but also offers a valuable opportunity to reuse the experience and knowledge generated. Regions that have achieved positive results can serve as benchmarks and guide other municipalities in implementing similar policies and strategies. Therefore, sharing and disseminating these experience is essential to promote a more efficient resilient development adapted to the particular needs of each territory.

Boosting graduates' entrepreneurship to mitigate brain drain in the second-tier of EU LDRs. The case of North and South Aegean

Ms Eleni Zarimi¹, Dr. George Liagouras¹, Dr. Anastasia Constantelou¹, Dr Evangelos Vassiliou¹

¹University Of The Aegean, Chios, Greece

G14-O2 Left Behind Areas, Insularity, Inner Areas and Border Regions, B4, August 28, 2025, 9:00 AM - 10:30 AM

Graduates' brain drain is a more general phenomenon, but it is very acute and dangerous in laggard areas. In EU, Less Developed Regions (LDRs) are facing important techno-economic and geographic weaknesses which prevent them from retaining people who graduate from local Universities. Hence, mitigating the severe brain drain of local Universities' graduates is a critical factor for upgrading human capital and promoting development in LDRs. Still, considering the low demand for well-educated personnel by local firms, focusing on graduates' entrepreneurship in the region of their studies becomes the most important alternative.

Our research focuses on two peripheral areas - North Aegean and South Aegean – in which the usual problems faced by LDRs are coupled with their insular particularities. Furthermore, the numerus clausus system for entering Greek universities makes that 90-95% of enrolled students in the University of the Aegean (UoA) are coming from regions outside the Aegean Archipelago. Then, the main research question is: “Which are the factors that positively impact on the UoA graduates' decision to stay and become entrepreneurs in the island of their studies?”. The data come from a questionnaire answered by 250 graduates who are entrepreneurs outside the Aegean Archipelago. We mainly use SEM (Structural Equation Modeling) to test the main factors impacting on the graduates' “decision to stay”: perceptions about the quality of life (QoL) and business (QoB) environment, willingness to live in less populated areas (less than 50.000 inhabitants), social integration within university and in the island of studies, etc.

The findings underscore three major points. Firstly, there is no trade-off between QoL and QoB, as graduates tend to evaluate their university location similarly. This contradicts prior studies (e.g. Grimes et al. 2023) indicating that graduates choose to live in areas with higher QoB rather than QoL. An explanation is that the challenges in Aegean islands are more or less the same (e.g. distance from capitals, remoteness, high transport expenditures) for both QoL and QoB. Secondly, social integration both in UoA and local society affects positively their decision to stay, indicating that without cultivating the sense of belonging, incentive policies may prove inefficient. A third finding is that family attachment is not deterrent for settling down in the island of studies.

AI for Resilience: Environmental and Health Data as Drivers of Sustainable Development in European Regions

Dr. Simona Cafieri¹

¹Istat, Napoli, Italy

S70 The Role of AI in Turbulent Times: Challenges, Opportunities and Best Practices for Data-Driven Regional Resilience, Amph 3, August 29, 2025, 9:00 AM - 10:30 AM

In an era marked by economic, environmental, and social uncertainty, Artificial Intelligence (AI) is emerging as a transformative tool for promoting regional resilience. This paper explores how AI can be leveraged to address pressing challenges in turbulent times, focusing on its applications in regional and urban planning, predictive analytics, and sustainable governance. Drawing on a case study from Italy and European regions, we examine the role of AI in analyzing complex systems, predicting health and environmental trends, and supporting evidence-based decision-making. We also discuss the challenges associated with AI, including data quality, ethical considerations, and the risk of widening inequalities. By highlighting best practices and successful experiments, this paper aims to foster a dialogue on how AI can contribute to sustainable, inclusive, and adaptive regional development.

Social Capital for Healthy Aging in the EU: a Regional Inequality Analysis

Dr. Enza Simeone¹, Prof. Ambra Poggi¹

¹University Of Turin, Turin, Italy

G13-O2 Social Capital, Territorial Capital, Institutions and The Commons, F5, August 27, 2025, 2:00 PM
- 4:00 PM

Social capital is a key factor in creating a supportive environment to healthy aging in the EU. Social capital is an individual resource embedded in one's social networks. Collective-owned regional level resources (e.g. sharing norms, institutional settings, etc.) can be mobilised by the individuals to build up their own social capital. Our aim is to investigate regional differences in the level of social capital held on average by older adults as well as the complexity of the relationship between individual social capital and regional level resources. Our analysis is twofold. First, using graphical methods and logistic nonlinear models, we investigate changes in social capital levels in specific groups of regions after the Covid-19 pandemic, changes that we interpret as the consequences of the different Covid management strategies implemented in the EU regions. Second, using econometric methods, we investigate the determinants of social capital. We find that disparities in (unobserved) regional level resources explain a significant share of social capital inequality among the elderly.

Creative industries, music and women's work value. The impact of financial consciousness on a gendered labour market

Prof. Alessandra Micalizzi¹, Prof. Valentina Cattivelli¹

¹Pegaso Digital University, Napoli, Italy

S27-S1 Gender Equality in Regions in Europe and Beyond, D12, August 27, 2025, 4:30 PM - 6:30 PM

See long abstract

Smart cities policies for urban development: Systematic insight into public value creation

Prof. Roberta Barbieri², Prof. Francesco Natale², Prof. Valentina Cattivelli¹, Prof. Benedetta Coluccia¹
¹Pegaso Digital University, Napoli, Italy, ²University of Salento, Lecce, Italy

S56-S1 Digitalization and Inequality: Territorial Disparities and Policy Effectiveness, F1, August 29,
2025, 9:00 AM - 10:30 AM

see long abstract

Structural challenges and GVC positions in FDI dependent economies: Insights from the V4 regions

Prof. Zoltan Gal, Mr Bennour Med Hsin

¹University of Pécs, Faculty of Economics; Centre for Economic & Regional Studies, Hungarian Academy Of Sciences, Pécs, Hungary

S68 The Role of Foreign-Owned Companies in Regional Development: Opportunities and Challenges in a Double-edged Relationship, A5, August 28, 2025, 4:30 PM - 6:30 PM

This study explores the complex role of Foreign Direct Investment (FDI) in regional development across the Visegrad countries (V4) and Austria as a non DME (Dependent Market Economies) benchmark, with a focus on productivity, specialization, Global Value Chain (GVC) positioning, and knowledge complexity. While FDI has been a catalyst for economic integration, productivity gains, and sectoral specialization, it has also reinforced structural dependencies that hinder regional upgrading.

Our study provides novel insights into how regional roles (supplier, assembler, outsider and controller) influence FDI's effects on productivity and specialization. While FDI boosts productivity in supplier and assembler regions, it negatively affects regional GVC positioning (upstreamness) and knowledge diversity. However, its influence on GVC positioning is predominantly negative, with only marginal benefits for outsider regions. Furthermore, FDI is negatively associated with knowledge diversity, indicating that it encourages sectoral concentration rather than fostering broad-based technological upgrading. The study also finds that knowledge complexity remains largely unaffected by FDI, suggesting that technological advancement requires complementary policies beyond foreign capital inflows.

These results contribute to ongoing debates on FDI-led growth models by demonstrating that while FDI stimulates regional economic activity, it can also lock regions into lower-value-added roles within GVCs. This research underscores the need for targeted policies to enhance local absorptive capacities, encourage technological upgrading, and reduce excessive reliance on foreign investment. By integrating regional-level FDI patterns with regional specialization dynamics, our study offers critical insights for policymakers striving to balance FDI attraction with sustainable economic development in the V4.

Evolution of the SF6 footprint: The challenge for the electricity sector

Dra. Sara Miranda Buetas, Dra. Cristina Sarasa Fernández, Dra. Rosa Duarte Pac

¹University of Zaragoza, Zaragoza, Spain

G08-O3 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, Amphitheater I -
SAKIS KARAGIORGAS, August 27, 2025, 4:30 PM - 6:30 PM

The Kyoto Protocol focused on controlling greenhouse gas emissions, including one of the most potent gases, SF6. Emissions of SF6 have been steadily increasing, largely driven by the expansion of the electricity sector. While the overall share of SF6 emissions is not alarming, global authorities are calling for its footprint to be addressed due to its high global warming potential and long atmospheric lifespan.

In this context, we developed a multiregional and multisectoral input-output model to assess the SF6 footprint from 2000 to 2022 across a range of developed and developing economies. Our analysis aims to provide a clearer understanding of the trends in SF6 emissions and to identify the key sectors where this gas is concentrated. This study examines the traceability of the SF6 footprint, focusing particularly on the electricity sector, and explores the interconnections between different countries. Preliminary findings show a general increase in the SF6 footprint over the entire period, with a deceleration in the rate of growth since 2015. Furthermore, the results highlight that China faces a significant challenge in reducing its SF6 footprint. These early findings highlight the relevance of investing in research to develop new technologies that can facilitate the substitution of SF6 in the power sector.

Open Innovation as a driver of Creative Construction

Prof. Gil Avnimelech¹, Dr. Assaf Amit²

¹Ono Academic College, Kiryat Ono, Israel, ²The College of Management, Rishon Lezion, Israel
G03-O5 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 28, 2025, 4:30 PM - 6:30 PM

This paper examines the transformative role of open innovation (OI) in entrepreneurial ecosystems, highlighting its capacity to shift innovation dynamics from creative destruction to creative construction. While Schumpeterian creative destruction displaces incumbents through disruptive startups, creative construction fosters collaboration, enabling startups and incumbents to co-create value. Open innovation serves as a key mechanism in this shift, facilitating intentional knowledge flows, resource sharing, and partnerships that enhance ecosystem-wide innovation.

We first position open innovation within the broader theoretical framework of entrepreneurial ecosystems, emphasizing its role in enhancing knowledge spillovers and absorptive capacity. Traditionally, knowledge spillovers occur sporadically, but OI structures them into systematic knowledge exchange mechanisms. Through collaborative activities such as joint ventures, R&D partnerships, and licensing agreements, firms can better internalize external knowledge, boosting their innovation potential. Additionally, OI strengthens absorptive capacity by improving firms' ability to recognize, assimilate, and apply external knowledge, particularly through repeated engagements.

At the ecosystem level, we argue that OI functions as an infrastructure facilitating both vertical and horizontal knowledge spillovers. Vertical spillovers occur within industries, while horizontal spillovers extend across sectors, fostering diverse knowledge exchange. This infrastructure includes coworking spaces, accelerators, and innovation hubs that serve as collaboration centers, alongside institutional frameworks and networks that sustain knowledge flows. By lowering collaboration costs and risks, OI democratizes access to innovation resources, enabling smaller firms to benefit from systemic spillovers.

Open innovation also plays a central role in fostering creative construction. Startups contribute disruptive insights, while incumbents provide resources, legitimacy, and complementary assets, creating a synergistic dynamic. This collaboration mitigates innovation risks and enhances R&D returns, driving greater investment and participation. While ecosystems characterized by creative construction still experience disruption, the relationship between startups and incumbents evolves. Instead of purely displacing incumbents, startups often collaborate with them, enabling incumbents to adopt and scale disruptive innovations while startups gain access to critical resources and markets. This interplay accelerates technological progress and market transformation, enriching the entrepreneurial ecosystem.

Finally, we explore policy implications. Traditional R&D-focused policies often overlook OI's systemic benefits. We propose a shift toward supporting ecosystem-wide OI infrastructures, including shared research facilities, public-private partnerships, and collaborative innovation platforms. Positioning these initiatives as explicit OI support programs strengthens their theoretical foundation and highlights new opportunities to address market and systemic failures.

Beyond One-size-Fits-All: Dissecting the varying impact of Public Programs on Firms Internationalization. New Evidence from a Regional Export Promotion Program

Dr. Santino Piazza¹

¹Ires Piemonte, Turin, Italy

G20-O4 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 29, 2025, 11:00 AM - 1:00 PM

This paper evaluates the effectiveness of Export Promotion Programs (EPPs) in Italy's Piedmont Region, revealing heterogeneous impacts across different firm sizes. The research finds that EPPs increased export propensity by approximately 10%, primarily benefiting small and small-medium enterprises, while showing no significant effect on micro firms. The analysis demonstrates a delayed positive impact on export resilience, particularly for small-to-medium firms, and 18% increase in export intensity.

However, the programs showed weaker results on intensive and extensive trade margins, impacting only medium-sized firms. This analysis is particularly relevant given the growing importance of SME internationalization in the public policy frameworks of small open regional economies.

Emergence of cleantech innovation ecosystem in peripheral industrial region: Case of Moravian Silesian region

Dr. Suyash Jolly¹, Dr. Petr Rumpel

¹Department of Human Geography and Regional Development, University of Ostrava , Ostrava, Czechia

G03-O3 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 27, 2025, 4:30 PM - 6:30 PM

This paper focuses on the development of an emerging cleantech innovation ecosystem in peripheral and old industrial regions that have been historically characterized by specialization in natural resource-based, traditional, and heavy engineering-based industries and facing challenges such as negative environmental impacts linked to air pollution, gradual deindustrialization, ageing population and outmigration of talented youth to other metropolitan regions. By using insights from the literature on entrepreneurial ecosystems, regional innovation systems and institutional work from the institutional theory, the paper traces the role and actions of different regional actors in supporting the development of a cleantech innovation ecosystem. The study discusses the case of the Moravian Silesian region, Czechia, which has been considered an old peripheral industrial region. The region now has embarked on "MSR 2030+ = smart and green region" agenda and aims at creating new value-added activities in the region related to new environmental climate technologies, new energy storage technologies, hydrogen development and new waste management technologies. Regarding the research method, the paper utilizes a qualitative case study approach and draws upon archival data sources and semi-structured interviews with regional stakeholders in the Moravian Silesian region. The paper provides novel insights regarding developing new entrepreneurial ecosystems in the context of lagging behind peripheral industrial regions and the potential for green transformation.

Highway Infrastructure and Greenhouse Gas Emissions: Evaluating Environmental Costs of Road Investments in Brazil

Victor Medeiros¹, Prof. Rafael Ribeiro¹, Prof. Pedro Amaral¹

¹Cedeplar/ufmg, Belo Horizonte, Brazil

G05-O6 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 29, 2025, 9:00 AM - 10:30 AM

This study evaluates the regional impacts of highway infrastructure development on greenhouse gas (GHG) emissions. To this end, we use detailed local-level data from Brazilian municipalities during the Growth Acceleration Program (PAC) period (2007-2018) and apply an instrumental variable identification approach to circumvent endogeneity concerns related to the non-random placement of roads. We find that a 1% increase in road investments raises CO₂ emissions by 0.025%. Those damaging highway effects are sustained for the road, energy, and land use change sectors. In addition, findings point out heterogeneous road impacts on CO₂ emissions depending on agglomeration, population scale, deforestation, and technology. From the econometric estimates, we calculate an average CO₂ emissions return rate to highway investments (ERR) of 3.0%, implying a discount on the economic benefits of road investments proved in past studies. Finally, we measure a sustainable return rate to highway investments (SRR) of around 17%, indicating a widespread need to develop the Brazilian transportation sector. From a regional perspective, it is important to note the deep heterogeneities in Brazil, wherein the results shed light on negative SRRs for some regions and the large regional variability. This research offers valuable insights for policymakers, technicians, financial institutions, and civil society in shaping effective and environmentally conscious road policies.

Changes in the Centrality of Brazilian Cities: an analysis based on the Higher Education expansion

Dr. Fransuellen Santos, Dr. Luciana Luz¹

¹Cedeplar/ufmg, Belo Horizonte, Brazil

G24-O2 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 28, 2025, 4:30 PM - 6:30 PM

New educational demands arise from changes in a country's productive structure, especially with the modernization of production processes. Economically dynamic regions tend to be more attractive and concentrate investments in higher education. Between 2003 and 2014, higher education expansion programs created new institutions, increasing access to higher education in various regions in Brazil. It is plausible to think that these programs may have promoted changes in terms of the prevailing regional hierarchy. This study analyzes whether municipalities that received new higher education institutions experienced changes in their centrality. Using a synthetic indicator to measure centrality based on the number of enrollments by field of study, along with spatial econometric techniques, we analyze differences in Brazil's urban hierarchies and discuss the factors associated with these changes. The results show that over the years, there has been an increase in the centrality of cities outside major urban areas, reflecting the effects of higher education interiorization policies and the decentralization of educational opportunities. The study sheds light on the mechanisms driving the change in hierarchies, and discusses the role of population size, and municipality's capacity to attract services and qualified jobs.

Between first choices and forced moves: Student mobility and higher education efficiency

Pedro Luís Silva⁴, **Prof. Carla Sá**^{1,2,3}, Madalena Temudo³

¹University of Minho, Braga, Portugal, ²NIPE, Braga, Portugal, ³CIPES, Matosinhos, Portugal,

⁴Universitat Autònoma de Barcelona, Barcelona, Spain

G09-O3 Migration, Mobility Patterns and Impacts Across Space, A1, August 28, 2025, 4:30 PM - 6:30 PM

This study examines the role of student mobility, particularly relocations resulting from not being admitted to a preferred institution, in shaping higher education efficiency and regional development. Portugal's centralised admission system assigns students based on grades, preferences and institutional capacity, often leading to placement mismatches that make students relocate. Such forced mobility may contribute to inefficiencies, including higher dropout rates, delayed graduation, and suboptimal allocation of educational resources. By exploring the determinants and consequences of student mobility, this paper seeks to provide insights into the spatial distribution of human capital and its implications for regional growth and educational equity.

To analyse these patterns, we apply a gravity model of student flows, estimating the determinants of mobility between municipalities and higher education institutions. Using administrative data from the Portuguese Directorate-General of Higher Education, we model mobility as a function of first-choice allocation, geographical distance, institutional quality, and field-specific constraints. The gravity framework allows us to assess how institutional characteristics and regional economic factors influence student movements and whether specific fields exhibit higher mobility barriers.

By focusing on the relationship between mobility patterns and the structural features of the higher education system, this study contributes to the broader discussion on educational efficiency and spatial equity. Understanding the extent to which institutional constraints versus individual preferences drive student flows can inform policies to improve access, reduce mismatches, and foster balanced regional development. Our findings will help assess whether current admission mechanisms promote an optimal distribution of human capital or whether adjustments—such as targeted financial incentives, institutional specialisation strategies, or policy interventions to mitigate mobility costs—are needed to enhance the efficiency of higher education.

Heterogeneous Districts, Interests, and Trade Policy

Dr. Santiago Pinto¹, Dr. Kishore Gawande², Dr. Pablo Pinto³

¹Federal Reserve Bank Of Richmond, Richmond, United States, ²University of Texas, Austin, Austin, United States, ³University of Houston, Houston, United States

G04-O3 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 28, 2025,
9:00 AM - 10:30 AM

Congressional districts, heterogeneous in their trade policy preferences, are key players determining trade protectionism. Yet, they are missing from even the best-established political economy models of trade protection. We characterize the (unobserved) district-level demand for protection, and model national tariffs as an aggregation of district-level preferences. The model centrally features exporter interests as a countervailing force against domestic protectionism. We estimate welfare weights on specific-factor owners implied by tariff and non-tariff protection from 2002, a critical juncture coinciding with China's WTO accession. The findings offer a new reason for the current backlash against free trade--the diminished role of manufacturing exporters.

Municipal-Level Analysis of Inbound Tourism Demand for Promoting Regional Tourism

Dr. Mingji Cui¹, Mr. Iori TAKEHI¹, Prof. Hiroyuki SHIBUSAWA¹

¹Toyohashi University Of Technology, Toyohashi, Aichi, Japan

G15-O1 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness, Quality of Life, E1, August 27, 2025, 4:30 PM - 6:30 PM

Japan's inbound tourism experienced a significant decline due to the COVID-19 pandemic; however, it has recently demonstrated a rapid recovery. Since December 2023, the number of international visitors to Japan has surpassed the levels observed during the corresponding period in 2019, prior to the pandemic. While inbound tourism is steadily recovering, more than 70% of international visitors continue to stay in the three major metropolitan areas (Tokyo, Kanagawa, Chiba, Saitama, Aichi, Osaka, Kyoto, and Hyogo), indicating a regional imbalance in visitor distribution similar to the pre-pandemic period (JNTO 2024).

"The New Tourism Nation Promotion Basic Plan," announced on March 31, 2023, designates attracting international tourists to regions outside the three major metropolitan areas as a key policy objective. To facilitate the attraction of international tourists to local regions, it is essential to identify the areas with high concentrations of inbound tourism demand and analyze the correlation between demand and regional characteristics, tourism promotion strategies.

With the rapid development of international tourism, research on tourism demand has been conducted globally. Sarath D. (2003) proposed an international tourism demand model based on consumer theory, while Raana S. B. (2021) analyzed the correlation between place attachment and tourist satisfaction. Additionally, Muryani P. (2020) examined the impact of factors such as income and relative prices on tourism demand using panel data. However, most of these studies focus on national-level analyses or internal factors influencing tourists, and relatively few studies have explored the relationship between tourism demand and the characteristics or policies of specific destinations.

This study aims to clarify inbound tourism demand in regional areas and the factors influencing it by utilizing location data of international visitors to Japan. Specifically, it models inbound tourism demand at the municipal level and analyzes the characteristics and patterns of high-demand areas. Based on these findings, the study identifies key challenges aligned with tourism needs and proposes strategies for attracting international tourists to regional destinations.

Foresight as a tool for Regional Strategic Intelligence. The case of Thessaly (Greece)

Mr Akis Kalamaras¹, Mr Pantoleon Skayannis^{1,2}

¹University Of Thessaly, Volos, Greece, ²POLIS University, Tirana, Albania

G20-O4 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 29, 2025, 11:00 AM - 1:00 PM

The successive crises of recent years have shaped an environment of uncertainty that tends to constitute a new permanent reality. The radical changes that AI will bring to the entire social process will create a highly competitive economic field. In this new situation, Greek Regions are called upon to transform the methods of developmental policy and to completely reconstruct their structures. The development of the Region's strategic intelligence is a crucial element in order to cope with the present and future challenges.

Adopting Foresight (OECD, 2021) can provide early warnings of challenges and opportunities, as well as the ability to study the present big picture and to envision the possibilities of the future. It enables Regions to identify and prioritize critical areas of intervention, allocate development resources effectively and make informed decisions based on comprehensive analysis. Cultivates collective intelligence, enhances strategic thinking and incorporates views and opinions of local actors and citizens. Creates the conditions for the alignment of regional development with knowledge (Foray, 2004) and mission economy (Mazzucato, 2021).

European Committee of the Regions states that local and regional authorities (LRAs), as well as other local bodies and citizens -especially young people- should play a primary role in the practice of Foresight, thus actively contributing to the choices that will determine their future.

The aim of our research is to explore if the elements of Regional Foresight exist in the developmental procedures in the Region of Thessaly. Through semi-structured interviews with representatives of the quadruple helix we investigate the utilization degree of Anticipation, Participation, Networking, Visioning and Action (European Commission et al., 2001) in the established developmental functions of Thessaly region. Grounded Theory (Glaser and Strauss, 2017) methodology aids us to build a middle-range theory which represents a coherent, applicable and effective framework for the utilization of Regional Foresight by Greek regional governance. This paper presents some initial findings of our ongoing research.

EUROPEAN COMMISSION, DIRECTORATE GENERAL FOR RESEARCH & CENTRE, J. R. 2001. A Practical Guide to Regional Foresight, STRATA Programme: FOREN, Foresight for Regional Development Network, EUR-OP.

FORAY, D. 2004. Economics of knowledge, MIT press.

GLASER, B. G. & STRAUSS, A. L. 2017. Discovery of grounded theory: Strategies for qualitative research, Routledge.

MAZZUCATO, M. 2021. Mission economy: A moonshot guide to changing capitalism, Penguin UK.

OECD 2021. Foresight and Anticipatory Governance in Practice. Lessons in effective foresight institutionalisation. Strategic Foresight Unit. Office of the Secretary-General. OECD.

Evaluating Access to Bus Stops Considering Topographical Features: A Case Study of Suburbs in the Tokyo Metropolitan Area

Mr Naoyuki Mori¹, Dr Kiyoshi Takami², Dr Giancarlos Parady²

¹City Of Yokohama, Honcho6-50-10, Naka-ku, Yokohama, Japan, ²The University of Tokyo, Hongo 7-3-1, Bunkyo-ku, Tokyo, Japan

G19-O4 Urban, Regional and Local Policy Evaluation, G3, August 29, 2025, 9:00 AM - 10:30 AM

Since the 1960s, rapid population growth in the Tokyo metropolitan area has led to the development of residential areas on hilly terrain far from railway stations. In these undulating suburban areas, the aging population is facing increasing difficulty in walking uphill to access public transportation. Older people experience a decline in physical function, resulting in slower walking speeds and increased physical strain when navigating slopes. Therefore, incorporating these factors into accessibility evaluations is crucial. However, many previous studies have not fully considered the physical limitations of older people.

Metabolic conversion distance is therefore a useful concept to evaluate older people's access to public transportation. This distance accounts for both the increased physical strain while navigating slopes and slower walking speeds associated with aging-related declines in physical function. It is calculated using metabolic energy expenditure when walking uphill as an indicator of the physical strain while navigating slopes. Additionally, the inverse ratio of observed walking speed to the standard walking speed (4 km/h) quantifies the impact of slower walking speeds.

This study focused on Kanazawa Ward in Yokohama City, which is located approximately 40 km southwest of Tokyo. This area has a rapidly aging population and numerous residential neighborhoods on hilly terrain. Employing the concept of metabolic conversion distance, this study evaluated access to the nearest bus stop and compared the results with those of conventional methods such as crow-fly and network distances. The 300 m catchment area was calculated for bus stops and the population within each area.

The metabolic conversion distance to the nearest bus stop was, on average, 1.62 times longer than the network distance, and its standard deviation was approximately 1.66 times greater. Relative to the entire Kanazawa Ward, the coverage ratio of the catchment area was 73.0% for crow-fly distance, but only 55.5% for network distance, and 30.2% for metabolic conversion distance. Furthermore, on a population level, the coverage ratio of the catchment area, relative to the entire Kanazawa Ward, was 85.8% for crow-fly distance. However, this ratio was only 68.3% for network distance and 36.5% for metabolic conversion distance. Approximately 57% of the population within the catchment area by crow-fly distance fell outside the catchment area by metabolic conversion distance.

Many municipalities evaluate accessibility using crow-fly distance. However, the present findings demonstrate that such evaluations may significantly underestimate the accessibility challenges faced by older people.

How Does Network Infrastructure Construction Affect the Application of Industrial Robots? Evidence from A Quasi-Natural Experiment in China

Ms Xinmeng Ye¹, Anping Chen¹

¹School of Economics, Jinan University, Guangzhou, China

G20-O4 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 29,
2025, 11:00 AM - 1:00 PM

Industrial robots are a pivotal force driving the new wave of technological revolution and industrial transformation. Based on panel data from prefecture-level cities in China, this study employs the Broadband China pilot policy as a quasi-natural experiment and constructs a multi-period difference-in-differences model to evaluate the impact of network infrastructure construction on the application of industrial robots in Chinese cities. The findings indicate that network infrastructure can effectively promote the application of industrial robots in cities. The mechanism test reveals that this effect operates through talent agglomeration and technological innovation. Heterogeneity analysis shows that the impact of network infrastructure on urban industrial robot adoption is more significant in resource-based cities, northeastern regions, and cities with lower technological levels. Furthermore, the driving effect of the Broadband China pilot policy exhibits significant policy synergies with initiatives such as the National Big Data Comprehensive Pilot Zone, Smart City Construction, and the Made in China 2025 national demonstration zones. The conclusions of this study provide theoretical insights for the government to promote network infrastructure development, facilitate the adoption of industrial robots in cities, and maximize the multiplier effects of related policies.

Envisioning inclusive futures: an experimental participative scenario building methodology for Europe's sectoral twin transition from the FITTER-EU project.

Mr Lluís Viñé¹, Ms Laura Armayones¹

¹Eurecat, Centre Tecnològic de Catalunya, Unit of Innovation Consultancy, Barcelona, Spain

G25-O3 Enriching Research and Policy Methods in Regional Science: Digital Tools, Artificial Intelligence, Participatory Methods, Mapping Techniques, Stakeholder Involvement, Amph 3, August 29, 2025, 2:00 PM - 4:00 PM

The twin transition—green and digital—is a key priority for the European Commission, yet it presents challenges related to alignment and equity. Policies may unintentionally create advantaged and disadvantaged groups, underscoring the need for a just transition to ensure no one is left behind. The FITTER-EU project addresses this challenge by developing an inclusive scenario-building methodology to anticipate future socio-technical transformations across four sectors: building and housing, transport and mobility, energy, and agriculture. The project focuses on six European countries (Spain, Germany, Hungary, Italy, Ireland, and Portugal) and aims to forecast three alternative scenarios for 2050, identifying key drivers, risks and impacted populations.

This study applies the Multi-Level Perspective (MLP) framework, which differentiates between niches (emerging innovations), regimes (established systems) and landscapes (macro-level influences).

Through this approach, exploratory scenarios are developed to evaluate sectoral transition pathways.

The methodology integrates a PESTLE analysis (Political, Economic, Social, Technological, Legal, and Environmental factors), 30 semi-structured expert interviews, and three iterations of a Delphi survey with stakeholders, including policymakers, civil society representatives and sectoral experts.

Findings highlight the potential of MLP in scenario-building and emphasize the role of participatory foresight in understanding sectoral transitions. The study identifies critical transition drivers and their socio-economic implications, helping policymakers anticipate vulnerabilities and develop mitigation strategies for disadvantaged groups. The final set of scenarios serves as a foundation for policy adaptation, stakeholder engagement and cross-sectoral dialogue.

This research contributes to foresight methodologies by refining scenario-building approaches for inclusive and evidence-based policymaking. Future research will explore integrating quantitative modeling and dynamic indicators to further enhance scenario analysis.

Measuring Work Flexibility Across Europe: A Multidimensional Composite Indicator Approach

Ms. Paola Bertazzoni¹, Prof. Annamaria Bianchi¹, Dr. Jurgena Myftiu¹

¹University of Bergamo - Department of Economics, Bergamo, Italy

G23-O3 Labor Markets, Unemployment, Gig Economy, Digital 'Nomads', Amphitheater II - SAKIS
KARAGIORGAS, August 29, 2025, 2:00 PM - 4:00 PM

This study explores the critical and multidimensional phenomenon of work flexibility in Europe from the perspective of workers, with the aim of providing a comprehensive understanding. To this end, the research introduces a robust composite indicator based on a novel theoretical framework that integrates dimensions not previously combined in the current literature. Work flexibility is analysed through seven key pillars: part-time work, location flexibility, irregular and unconventional working hours, work-life balance and related factors. Utilising data from the European Working Conditions Survey for the years 2015 and 2021, the study employs two non-compensatory methods (the adjusted Mazziotta Pareto index and the geometric mean) to construct the composite indicator. The composite indicator demonstrates that location flexibility emerges as the most influential factor shaping work flexibility in different national contexts. By integrating theoretical insights and empirical analysis, this study provides an essential tool for understanding the evolution of work flexibility and offers actionable insights for policymakers and organisations aiming to enhance workplace adaptability in a changing world. Moreover, composite index rankings reveal that flexibility varies significantly across nations due to cultural and structural labour market differences. Between 2015 and 2021, shifts in rankings indicate that some countries struggled to maintain previous levels of flexibility, suggesting that implemented measures were insufficient. Regional disparities are evident: Northern and Western Europe exhibit high, employee-centred flexibility, supported by strong institutional frameworks, while Southern and Eastern Europe show greater variability, with some countries experiencing declining flexibility due to job instability and labour market fragmentation, worsened by the COVID-19 pandemic.

Conceptual Analysis of Place Attachment in Temporary Settlements

Mr Cihan Mert Sabah¹, Prof. Dr. Aliye Ahu Gülümser¹

¹Istanbul Technical University, Istanbul, Türkiye

G22-O4 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, G6, August 28, 2025, 4:30 PM - 6:30 PM

This study conducts a comprehensive literature review to explore individuals' attachment experiences to temporary spaces. By examining the complex human-environment relationship, it investigates how attachment formation is shaped by individual characteristics, the place itself, and psychological processes. To achieve this, a meta-analysis was conducted within the "person, place, and psychological process" tripartite framework, incorporating 18 parameters to understand attachment dynamics over time in temporary settlements. Additionally, quantitative analyses were performed to capture the complexity of factors influencing attachment formation and to illustrate interactions among these factors. The study synthesizes existing research by identifying key factors that shape users' attachment experiences in temporary settlements. The relationship between emotional attachment and behavior was assessed through an analysis of 27 studies focusing on individuals' emotional bonds with places and their corresponding behaviors. The findings indicate that individuals develop attachment tendencies that are influenced by behavior, affect, culture, and cognition when they establish a connection with a temporary place. These factors interact in complex ways, shaping how individuals experience and maintain their sense of place attachment in temporary settings. By integrating psychological, emotional, and cultural factors, this study offers a novel and multidimensional perspective on place attachment within temporary spaces. It highlights the interplay between human experiences and spatial characteristics, providing valuable insights into the mechanisms of attachment formation in non-permanent environments. This comprehensive synthesis contributes to a deeper understanding of place attachment theory and offers a solid foundation for future research. Moreover, the findings have significant implications for urban planning and community development, particularly in designing temporary settlements that foster a sense of belonging and well-being among residents. This study was supported by TÜBİTAK 2224-A Program.

Application of a demand-response-optimized electrical load profile to a plant supplying an energy micro-community

Dr. Alessandro Lorenzo Palma¹

¹ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Santa Maria di Galeria (Rome), Italy

S34 Efficient Buildings and Industrial Processes: Driving the Energy Transition, E1, August 29, 2025,
9:00 AM - 10:30 AM

The European Renewable Energy Directive promotes the uptake of Renewable Energy Communities and Jointly Acting Renewable Self-Consumers for the local production and shared consumption of energy, as an alternative to the classic model based on centralized production, transmission, and distribution. Demand response (DR) programs are able to efficiently balance supply and demand both on grid-connected and islanded microgrids by deploying renewable energy sources and storage systems. In this work, carried out under the MASE – ENEA program agreement on Electrical System Research, we applied DR logics to optimize the electrical load profile of an apartment building acting as an energy micro-community. In the study, conducted with an experimental hybrid system called S.A.P.I.EN.T.E., installed at ENEA Casaccia Research Centre, an energy micro-community of apartment buildings was tested under real operating conditions. Through the plant control system, it was possible to emulate and compare the results coming from the implementation of a non-optimized electrical load and of the DR-optimized one. The advantages in terms of energy self-consumption and self-sufficiency have been highlighted. We also extended the study to a larger energy community employing a simulation platform based on Matlab/Simulink models to evaluate the energetics indices and economic profitability by applying DR logics. We have shown that in the context of a micro-community served by a hybrid plant like S.A.P.I.EN.T.E., the best energy performance and economical revenue occur in presence of a tracking system of PV power production, and optimization of the building's electrical load profile through Demand-Response logics.

Integrating insights: unveiling the blueprint for regional innovation policy instruments success. Lessons from the ERA_FABRIC project.

Mr Lluís Viñé¹, Ms Maria Zaragoza¹

¹Eurecat, Centre Tecnològic de Catalunya, Unit of Innovation Consultancy, Barcelona, Spain

G20-O4 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 29,
2025, 11:00 AM - 1:00 PM

Emerging from the ERA_FABRIC project, this study delves into the common characteristics and key factors that underpin successful regional innovation policy instruments. Using a mixed-methods approach—combining participatory workshops with over 140 stakeholders from nine European regions and an extensive literature review of 33 innovation instruments—four transformative domains were examined:

1. Promoting a unified market for green and digital transitions: Evaluating how innovation instruments can support market integration and drive sustainable growth in emerging technologies.
2. Leveraging smart specialization complementarities to connect territories: Analyzing the role of regional strengths and specializations in enhancing inter-territorial collaboration and competitiveness.
3. Enhancing the local impact and synergies of EU-Funded Research and Innovation projects: Assessing how regional instruments can amplify the benefits of EU investments by creating synergistic effects at the local level.
4. Deepening the human centrality of R&D and innovation policies: Exploring strategies to ensure that policy instruments remain responsive to the needs of local communities, thereby fostering greater inclusivity and social well-being.

Findings reveal that the success of regional innovation instruments hinges on several interrelated factors. Active multi-stakeholder engagement is critical, as it promotes co-creation and builds the local ownership necessary for long-term sustainability. Equally important is the capacity for contextual adaptation—tailoring instruments to the unique socio-economic, cultural, and geographical characteristics of each region. The study also highlights the need for targeted capacity building that equips both policymakers and local stakeholders with the skills required to navigate the complexities of innovation. Finally, the design of flexible financial mechanisms emerges as a vital enabler, lowering entry barriers and ensuring that support is accessible to grassroots initiatives. These insights contribute to refining the ERA Hub concept, providing policymakers with a robust blueprint for fostering transnational collaboration and resilient innovation ecosystems within the European Research Area.

Rural roads, Agricultural productivity and Conflicts: evidence from the Western Growth Poles Development project in Bas-Congo

Dr. Cecilia Nardi¹, Dr. Aletheia Amalia Donald, Dr. Julia Vaillant

¹Sapienza University Of Rome, Roma, Italy

G12-O2 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 27, 2025, 2:00 PM - 4:00 PM

This paper investigates the impact of rural feeder road rehabilitation intervention implemented in the framework of the Western Growth Poles Development Project of World Bank and Government of Democratic Republic of Congo, on agricultural productivity in villages of Bas-Congo province. Using road-level and village-level survey data collected before and after the road rehabilitation treatment (2016-2019), I document that rehabilitation of rural roads improves inputs accessibility and stimulates the commercialization of agricultural production. I validate these findings with two falsification exercises, a test for the sample selection bias and a number of robustness checks. Moreover, I document the distributional impact of road rehabilitation intervention on agricultural productivity, based on villages socioeconomic features and main cultivated crops. To address the potential nexus between agricultural productivity and conflict, I combine geo-referenced village and roads data with spatial data on conflict events, occurred in the period of analysis. Results suggest a positive relationship between agricultural productivity and violent events associated with rapacity and predation. However, the presence of rural road rehabilitation intervention seems mitigating the agricultural production-induced violence.

Analyzing the economic impact of climate change on rice cultivation: Case study in Myanmar

Ms Aye Mon Mon Kyaw¹, Mr Hong Sok(Brian) Kim¹

¹Seoul National University, Seoul, South Korea

G08-O1 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, Amphitheater I -

SAKIS KARAGIORGAS, August 27, 2025, 11:00 AM - 1:00 PM

Climate change poses significant threats to agriculture, especially in regions heavily rely on farming for economic stability and food security. This study explores the economic impact of climate change on crop revenue in Delta region, an area critical for the Myanmar's rice production. Using the Ricardian approach, the research analyzes how crop revenue sensitive to changes in seasonal temperature and rainfall employing primary data of 1,115 major rice farmers. The findings indicate that climate change significantly influences crop revenue, having a strong negative impact but a weaker positive effect in the study areas. Using Socioeconomic Pathways (SSPs) climate projection scenarios, this study found that projected climate change will negatively impact future crop revenue. The empirical results underscore the importance of future preparedness of adaptation and risk management practices at both on-farm level and in policy making.

The bottom-up and top-down development of Polish suburbs - case studies from functional urban areas commuting zones

Dr. Ada Wolny-Kucińska¹

¹University of Gdańsk, Gdańsk, Poland

G22-O3 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, B6, August 27, 2025, 2:00 PM - 4:00 PM

In recent decades, Polish suburbs have been characterized by dynamic growth both demographically and spatially. In particular, rapid development can be observed in the area of commuting zones delimited within functional urban areas (FUAs). The growing attractiveness of these areas was determined by increasing transportation accessibility and real estate market dynamics. Numerous recent changes in legal, economic and infrastructural conditions are prompting a closer look at areas transformed by bottom-up initiatives and compare them with planned, managed and arranged local development. The purpose of the study is to indicate the effects of both bottom-up and top - down development. This study aims to answer the following questions: (1) what role does transportation accessibility play in transforming suburban areas?, (2) how well does transportation-oriented development work in Polish FUAs? (3) how can the state of development be monitored when planning large-scale investments? For the purpose of the study, an analysis of selected cases from Polish FUA commuting zones was conducted. The study uses spatial methods of analysis and capabilities of GIS software.

Digitalization as a Factor of Sustainable Development in Cities of the European Union

Prof. Svetlana Rastvortseva^{1,2}, Asst. Prof. Ekaterina Panina¹

¹HSE University, Moscow, Russian Federation, ²Financial University under the Government of the Russian Federation, Moscow, Russian Federation

S06-S1 From Vulnerability to Opportunity: Building Resilient and Liveable Cities through Sustainability and Digitalisation, E12, August 27, 2025, 4:30 PM - 6:30 PM

The development of the urban environment and the enhancement of human capital are increasingly achieved through the implementation of digital technologies and the city's innovation system. Innovation system addresses social issues and enhances the resilience of the system, increasing the capacity of individuals, organizations, cities, regions and countries to tackle new challenges and ensure innovative economic efficiency.

The aim of this study is to determine the nature and extent of the impact of digitalization on achieving sustainable development in cities of the European Union. The study not only assesses the influence of digitalization as a component of the urban system and its role in the economic development of the European Union but also develops recommendations for leveraging the experience of European cities in shaping and advancing an optimal digital transformation policy for other countries and regions worldwide.

To analyze the impact of digitalization on the sustainable development of cities in the European Union, quantitative methods were employed to objectively assess the relationships between digital and socio-economic indicators. Regression analysis serves as the primary method, enabling the identification of statistically significant relationships between digitalization indicators and key sustainable development indicators.

The dependent variables in this study include key sustainable development indicators such as gross urban product per capita, the number of students in higher education and the level of environmental sustainability. The independent variables encompass key digitalization indicators, such as the share of employment in the information and communication technology sector, the average speed of fixed broadband Internet, mobile network speed, and the availability of public and municipal services online. This selection is justified by the crucial role digital technologies play in transforming economic and social environments, influencing access to education, infrastructure quality and economic growth. The study covered the period from 2019 to 2022 and included 172 cities in the European Union. Specifically, the sample comprised cities from Belgium, Denmark, Germany, Estonia, Spain, Finland, Croatia and Latvia. The results of the study demonstrate that digitalization has a significant impact on the sustainable development of cities in the European Union. In particular, a positive relationship was identified between employment in the ICT sector, the availability of high-speed Internet and key sustainable development indicators such as GDP per capita and the number of students in higher education. This confirms the hypothesis that digital transformation contributes to economic growth and expands opportunities for higher education.

Co-Designing nature-based solutions for Energy Efficiency and Climate Adaptation in the NatUR-W Urban Regeneration Project

Ms Patricia Briega², Ms Sara Pelaez-Sanchez³, Dr. Dionysis Latinopoulos¹, Mr Enrique Berruezo⁴, Ms Guzide Aslankaya⁵

¹School of Spatial Planning and Development, Aristotle University Of Thessaloniki, Thessaloniki, Greece, ²Singular Green, Department of Architecture and Engineering, Alicante, Spain,

³NBSCLIMATE, Department of Nature-based Solution, Ecosystem Restoration and Biodiversity, Burgos, Spain, ⁴Lorca City Council, Department of urban planning, mobility and accessibility, Lorca, Spain, ⁵INDRESMAT, L'Hospitalet de Llobregat, Barcelona, Spain

G22-O5 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, G5, August 29, 2025, 11:00 AM - 1:00 PM

Nature-based solutions in urban areas are receiving increasing attention in European municipalities for their proven multiple benefits to city residents. Some of those improvements include health and well-being, local climate regulation, air and water quality, and enhancements to the local green economy and cultural city assets. The NatUR-W project aims for an innovative and systemic approach to urban renaturalisation in Lorca, Spain, by fostering Nature-based Solutions (NbS) for climate adaptation, effective water management, and energy efficiency. NatUR-W is implementing GreenThermoWall (GTW), a self-sustaining green wall system designed to improve building insulation, reduce heating costs, and enhance urban resilience. The GTW system utilises bio-polyurethane, a lightweight and insulating substrate made from recycled materials, significantly lowering the carbon footprint compared to conventional insulation systems. By reducing heat loss in winter and mitigating heat stress in summer, GTW lowers energy consumption and utility costs in vulnerable social housing and public buildings, such as the repurposed citizen university in Lorca's former prison. The GTW innovative solutions will be integrated into an urban regeneration plan that includes a participatory plan based on a co-design approach or collaborative design process where stakeholders are actively involved in all NbS stages. The co-design solutions will bring social, cultural, environmental and economic benefits, such as better community acceptance, recreational and cultural landscape values, improved natural water cycle (infiltration, water reservoirs, water resilience), climate regulation, better air quality and boosting urban biodiversity. The proposed NbS will reduce maintenance costs since they leverage natural processes, are self-regulated, adapt and evolve, and provide climate shelters to help people cope with the heat waves. One of the project's outcomes is to reach 100 stakeholders involved in co-design activities. NatUR-W has already organised two co-designed workshops, has conducted stakeholder mapping and analysis as part of the engagement strategy, and has created a Stakeholders Board that meets every four months to foster citizen involvement in local governance. The monitoring of energy savings and climate benefits will be conducted through IoT sensors and open-access digital platforms, ensuring data transparency and replicability for future urban interventions.

NatUR-W's green transition model demonstrates how NbS can simultaneously address energy poverty, climate adaptation, and urban renaturalisation. It offers a scalable and sustainable solution for cities facing similar challenges.

Residents' perception of tourism: A preliminary mapping of European initiatives

Dr. Silvia Iodice¹, Dr Riccardo Curtale, Dr Filipe Batista e Silva

¹European Commission, Joint Research Centre, Ispra , Italy

S58-S1 Measuring the Social Impact of Tourism in the European Union, E12, August 27, 2025, 2:00 PM
- 4:00 PM

The development of tourism brings obvious socioeconomic benefits but also challenges when the flow of tourists creates competition with residents on the use of space, housing, and services. The social sustainability of tourism has been gaining momentum in public and policy fora but is sometimes lacking sound evidence and appropriate nuance. Therefore, monitoring and understanding residents' perceptions towards tourism and their causes is a fundamental aspect to enable sustainable tourism management that reconciles tourism development with communities' well-being. This presentation will outline the concept and first steps of a novel study to assess residents' perception of tourism in Europe. In a first stage, we will map existing European attempts to assess tourism perception by locals at different spatial granularities, towards a comparative analysis of recent initiatives. In a second stage, some descriptive statistics will be built, benefitting from multi-country survey results, leading to the identification of common patterns as well as main differences across European countries. Furthermore, this phase will allow the identification of possible gaps in current survey approaches at the national and regional levels, ultimately leading to the formulation of guidelines on how to address them through the integration of relevant aspects to consider in future efforts. The last step of the study will concern the association of the survey results with significant tourism indicators to detect if and to what extent the way residents perceive tourist aspects goes hand in hand with relevant features. The overall aim of this study is to pave the way towards a future harmonised assessment of tourism perception across EU countries and regions to assess the key factors driving residents' feelings, thereby orienting policy design in favour of balanced tourism development.

The Dynamics of Land-Use Changes in Commercial and Service Development in Poland

Dr. Agnieszka Majorek-Gdula¹

¹University of Economics in Katowice, Katowice, Poland

S28 Declining Resilience of Shopping Centres Effects in the European Urban Space, D12, August 29,
2025, 2:00 PM - 4:00 PM

In recent years, the growing inefficiency of shopping centers has become an increasingly noticeable issue. Once a key element of the functional structure of cities, these centers are now facing significant challenges.

This paper aims to present the findings of a study on the dynamics of commercial and service development transformations in Poland between 2014 and 2024. The analysis examines changes in the spatial extent of commercial and service areas, as well as the directions of their transformation—both in terms of the functions that have replaced them and the areas they have absorbed. Key trends will be highlighted, including the expansion of commercial developments at the expense of green and industrial areas, as well as the reverse phenomenon—the gradual conversion of certain facilities into residential or recreational spaces.

The conducted analysis will provide a deeper understanding of the mechanisms driving changes in urban spatial structures and their impact on socio-economic development.

Emerging jobs and skills across European Union

Dr. Lukasz Arendt¹

¹University of Lodz, Lodz, Poland

G23-O3 Labor Markets, Unemployment, Gig Economy, Digital 'Nomads', Amphitheater II - SAKIS
KARAGIORGAS, August 29, 2025, 2:00 PM - 4:00 PM

Identification of new/emerging skills needs is considered to be crucial to prevent skill gaps and shortages, to foster employability of citizens and to meet needs of the economy in the European Union (Cedefop, 2014). However, it should be stated that the notion of emerging skills is a very diverse phenomenon that lacks a clear definition. Cedefop (2014, p.75) defines emerging/new skills as these including abilities for which demand is increasing in existing or new occupations. The Australian National Skills Commission (Emerging roles, 2024) understands emerging roles as those that have appeared in Australian labour market data for the first time in recent years or that have been rapidly gaining importance.

To understand the essence of emerging skills, it is crucial to identify the key factors influencing the labour market that contribute to the development of these skills. These factors include globalization, demographic shifts, migration, and technological advancements (see i.e. Hogarth, 2019). The problem of identifying emerging skills in the empirical studies is usually addressed by the token of identification of emerging jobs, and then analysing skills-mix requirements in these jobs (see Napierala and Kvetan, 2022).

The paper employs original method to identify emerging skills and jobs across 27 European Union member states. Emerging skills are captured on the basis of online job advertisements published between 2019 and 2024 and provided by Lightcast. The analysis shows noticeable differences in the emerging skills patterns across EU countries, with a crucial role of digital (including AI-related) transformation shaping the demand for new skills.

Space and Welfare in the City: The Confluence of Scientific Research Programmes of Urban Economics and Local Public Economics

Prof. Artur Walasik¹, Prof. Edyta Szafranek-Stefaniuk¹

¹University of Economics in Katowice, Katowice, Poland

G19-O4 Urban, Regional and Local Policy Evaluation, G3, August 29, 2025, 9:00 AM - 10:30 AM

Space is one of the most important resources for socio-economic development. This issue falls within the scope of spatial economics, which shapes the socio-economic system in the spatial perspective. Currently, in the context of both the reduction of undeveloped surface resources and the emerging environmental barriers to management (e.g. the deteriorating quality of the natural environment, excessive amounts of waste, too low assimilation capacity of ecosystems or the need to adapt to climate change), shaping such a system requires responsible policy and spatial management, integrated with other territorially oriented public policies. These problems are particularly important in the case of urban areas, which are places where most people live and concentrate economic activity, while the quality of spatial resources is shrinking and deteriorating and the need to meet climatic/environmental challenges. On the other, local public economics introduces a spatial dimension to the considerations concerning public finances. Considerations in the field of spatial oriented public finances fail to undertake in-depth studies on the connections between local finance and spatial economy, in the ecological aspect, focusing rather on strictly economic factors. The discussion of the confluence of scientific research programmes of urban economics and local public economics could be conducted by the assumption of the problemshift in the meaning of Lakatosian methodology of scientific research programmes. The paper attempts to determine the resilience of the hard core of scientific research programs of urban economics and local public economics to disruptions resulting from contemporary challenges facing cities, in particular those related to climate change. In connection with this, the theoretical and methodological assumptions (paradigms) of public economics and spatial economics were recorded in the context of their ability to explain policy provides by cities in the field of spatial development, especially in the conditions of growing expectations of local communities regarding an ecologically responsible local finance. Attempts were also made to formulate auxiliary hypotheses that could constitute a protective belt for local public economics and urban economics.

Residential Relocation Decisions and Destinations: The Role of Work From Home Arrangements in the Post-Pandemic Setting

Dr. Conor O'Driscoll¹, Dr. Federica Rossi²

¹University Of Groningen, Groningen, The Netherlands, ²Politecnico di Milano, Milan, Italy

G09-O1 Migration, Mobility Patterns and Impacts Across Space, B1, August 27, 2025, 11:00 AM - 1:00 PM

This paper explores the extent to which working-from-home arrangements can impact the decision to relocate on one hand, and the destination individuals relocate to, on the other, in the periods before, during, and after the COVID-19 pandemic. To do this, individual-level longitudinal data (N = 13,430), geocoded at the neighbourhood level, is paired with highly refined spatial data, to study these relationships in the UK. To this end, mixed-effects binary and multinomial logistic regression techniques are employed to account for correlations in the decision-making process across individuals, time, and alternative choices. This approach allows us to incorporate unobserved preference variation through random coefficients, which yields correlations in utility over time for the same decision maker. Our results indicate that, firstly, regardless of working-from-home capabilities, people were less likely to move pre- and post-pandemic relative to during the pandemic, thus implying that the pandemic appears to have boosted residential mobility. However, pre-, during-, and post-pandemic, the directionality of this mobility appears sensitive to whether individuals could work from home. In the pre-pandemic setting, individuals who could work from home consistently favoured rural and suburban residential areas. During the pandemic, the directionality is more mixed. In the post-pandemic setting, individuals who work-from-home consistently favour urban residential environments. These results hold direct implications for our understanding of how evolving work arrangements impact the location decisions of economic agents, something which holds important consequences for urban/regional development, political geography, and labour market outcomes in an increasingly changing world.

Spatial Analysis of Photovoltaic Adoption in Urban Settings: A Case Study of Amsterdam (2016-2023) - (EPAINOS Paper)

Dr. Erkinai Derkenbaeva^{1,2}

¹Wageningen University and Research, Wageningen, The Netherlands, ²Amsterdam Institute for Advanced Metropolitan Solutions, Amsterdam, The Netherlands

YSS2, G2, August 28, 2025, 11:00 AM - 1:00 PM

As urban areas face increasing energy demands and the challenges of climate change, the adoption of photovoltaic (PV) systems is crucial for enhancing energy security and promoting sustainable development. This study investigates the spatial distribution and temporal trends of PV adoption in Amsterdam from 2016 to 2023, with a focus on various building types, including residential and commercial structures. Using geographic information system (GIS) data, the research maps PV installation locations and conducts spatial autocorrelation analysis to identify hotspots of adoption. Regression analyses explore the relationship between building characteristics (e.g., age and type) and PV uptake, as well as the influence of household demographics on residential PV adoption. The findings reveal distinct spatial patterns, with high adoption concentrations in specific neighborhoods, often linked to favorable socio-economic and infrastructural conditions. Conversely, other areas exhibit lower adoption rates, indicating barriers related to urban density, building constraints, and lagging uptake in multi-unit dwellings. Additionally, demographic factors, including the prevalence of younger populations, single-person households, and families without children, are identified as critical factors influencing PV adoption. The study's outcomes highlight the need for targeted interventions to overcome adoption barriers and ensure equitable access to sustainable energy solutions. Ultimately, the research aims to provide actionable insights for policymakers and urban planners to design policies that support the widespread adoption of PV systems in Amsterdam, fostering a more sustainable urban energy future.

Drought, Mafia and Slavery: Empirical Evidence from Nigerian Mafia's Human Trafficking in Italy

Mr Luca Buzzanca¹, Dr Carlo Caporali¹

¹Gran Sasso Science Institute, L'aquila, Italy

S41 Regional Science and Economic Development: Synergies, Insights, and Opportunities, E12, August 29, 2025, 2:00 PM - 4:00 PM

We study how Nigerian mafias exploit the vulnerability of people affected by climatic shocks through human trafficking to increase their illicit activities in Italy. Exploiting two empirical strategies, a shift-share IV and a difference-in-differences approach, we find that climatic shocks occurring in Edo State result in an increase in crimes related to human trafficking in Italy. The effect on crimes becomes significant after three quarters and lasts up to three years. Additionally, it is strongly correlated with the density of Nigerian communities in Italian provinces, suggesting that social networks play a key role in driving trafficking-related crimes. Our findings indicate that climatic shocks can have nontrivial implications for organized crime.

Justice in Greenbelt: Effects of UK planning restrictions on migration choices, gentrification and local economic development

Mr Lukáš Makovský¹, Dr. Capucine Riom²

¹University Of Reading, Reading, United Kingdom, ²World Bank, Washington, USA

G09-O2 Migration, Mobility Patterns and Impacts Across Space, G5, August 28, 2025, 9:00 AM - 10:30 AM

We investigate the effects of planning constraints on housing affordability and inter-city migration of high and low skilled households. Work to date has shown that constraining new housing supply leads to substantial house price growth, but full equilibrium adjustments crucially depend on households' mobility. We analyse aggregate and individual-level data and find (1) lower chances of low skilled to become a homeowner in expensive cities and (2) substantial negative effect of construction constraints on migration wage elasticity, which is larger in magnitude for low skilled households. These results could be rationalised with frictions on the mortgage market heterogeneously affecting high and low skilled in expensive cities, but this part of the paper needs to be further developed. All results are yet provisional.

Sustainability and residents' perception of tourist marketplaces: the role of transportation issues in a latent class analysis.

Dr. Daniele Crotti¹, Dr Jurgena Myftiu²

¹University of Insubria - Department of Human Sciences and Innovation for the Territory, Como, Italy, ²University of Bergamo - Department of Economics, Bergamo, Italy

S58-S1 Measuring the Social Impact of Tourism in the European Union, E12, August 27, 2025, 2:00 PM
- 4:00 PM

In the tourism domain, the interplay between visitors and residents growingly interacts with the social and natural environment. In line with the social exchange theory, residents might support local tourism development according to their positive or negative reported perceptions. Driven by institutional pillars, although transportation systems have rapidly become key actors for tourism development, rather scarce attention has been devoted to the role of tourist marketplaces in the understanding of sustainability and transport-related issues at a local level. In this paper we study the extent at what transportation features related to a tourist marketplace might affect the residents' perception about the social, economic and environmental sustainability of the shopping space. Considering the Mercato di Luino, a historical tourist marketplace created in 1543 in the province of Varese (Italy) as a case study, we collected primary data about residents' perception on the sustainability of the tourist marketplace and, after checking the validity of used Likert-scale items, we followed a latent class analysis approach, and we contrasted two models. In the first model, only socio-demographics are considered as predictors of classes, while in the second model also transport-based characteristics were added. In both cases, we identified three latent groups of MdL users having in common unobserved views on sustainability issues. If the segmentation is conducted without including transportation issues, we found that the analysis might likely overestimate the share of citizens perceiving the studied marketplace as a highly sustainable tourist marketplace. Instead, if residents' transport-related choices and their view about mobility issues linked to the marketplace are added, the share of residents with positive evaluation of the marketplace is substantially reduced, and the latent groups of residents displays a segmentation for which citizens' support might be harmed in case of lacking transport policies to smoothen the hindrances of tourist flows. As a result, residents' opinions about transport issues are found to have a key impact on their perception of sustainability. Focusing on tourist marketplaces as traditional places where residents directly interact with tourists and provide them with cultural experiences and products by local manufacturers or farms, this research encompasses residents as being primary stakeholders in tourism planning and development. In the presence of negative perception of marketplace sustainability due to transport externalities, therefore, this study enables policymakers to consider the important role of mobility and act to develop policies to reduce residents' concerns about sustainability.

The relationship between the presence of foreign-owned companies and firm entry – the case of the Hungarian districts

Dr. Balázs Páger¹, Dr. Zoltán Gál¹

¹HUN-REN Centre for Economic and Regional Studies, Budapest, Hungary

S68 The Role of Foreign-Owned Companies in Regional Development: Opportunities and Challenges in a Double-edged Relationship, A5, August 28, 2025, 4:30 PM - 6:30 PM

This study aims to clarify the relationship between the presence of foreign-owned companies and the entry rates of new firms (i.e., firm births) in Hungarian sub-regional districts, situating our findings within the existing literature. Previous studies have explored the significance of foreign-owned companies in the Hungarian economy, including their role in introducing new knowledge and enhancing regional research and development (R&D), their impact on differing growth trends among Hungarian counties, their contribution to entrepreneurial activities at the national level, and their influence on the industrial structure of Hungarian districts.

The literature on the relationship between foreign-owned firms and entrepreneurship presents conflicting results. Some studies have highlighted the positive effects of foreign-owned companies on domestic firm entry, such as increasing demand in local resource markets, raising the technological level of the host country or region, enhancing the productivity of domestic firms, and contributing to overall economic performance. Conversely, other empirical findings suggest a more mixed relationship, indicating that foreign-owned firms can displace local firms in the market or attract scarce local resources, such as qualified workers, away from domestic firms.

Our study's primary assumption is that foreign-owned companies may facilitate the entry of new firms, thereby boosting the local economy in these districts. Our analysis utilizes a panel dataset spanning from 2010 to 2019, comprising data from the Hungarian Central Statistical Office and the Databank of the HUN-REN Centre for Economic and Regional Studies. We use the firm entry rate in districts (number of entering companies related to the number of operating companies), and the change in employment within foreign-owned companies is our model's primary explanatory variable.

Additionally, we include several control variables to describe the socioeconomic conditions of the districts, ensuring a comprehensive analysis.

Initial results suggest a positive relationship between the entry of new firms and the presence of foreign-owned companies; however, this positive effect appears to manifest with a delay of a few years.

Backs against the border: The impact of border closure on firm survival in Finland

Prof. Teemu Makkonen¹

¹University Of Eastern Finland, Joensuu, Finland

G14-O3 Left Behind Areas, Insularity, Inner Areas and Border Regions, B4, August 29, 2025, 9:00 AM - 10:30 AM

The Finnish, as well as the global, business environment has recently had to endure one crisis after another (financial crisis of 2008, EU–Russian sanctions due to the Russian invasion of Crimea, Covid-19 pandemic, etc.), the most recent one being the war of aggression launched by the Russian Federation against Ukraine in 2022. The international community, including Finland, condemned the attack and enforced a series of sanctions against Russia. After a period of serious hybrid influencing carried out by Russia, the Finnish government decided to close the international border crossing stations at the Russian border in December 2023. As a result of the sanctions and border closure, cross-border travel and trade with Russian partners has been strictly limited. The border closure has also led to a seizure in transportation through the Saima channel effectively closing the only viable shipping route from many Finnish inland towns to international markets. The sanctions and the closing of the border has resulted in severe distortion in supply chains of Finnish firms particularly in terms of resources such as forestry and energy imports, in a loss of an important customer group as well as a significant source of foreign tourism income, to accessibility issues to international markets, etc. As such, Finnish firms are undoubtedly affected by the war, but there is an ongoing political debate about the geography of the impacts: are firms closer to the border affected more than the “national average”? Since economists are often more interested in the national rather than local economy, despite some tentative work, the scientific community has yet to provide systematic evidence on the potential regionally varied outcomes of the sanctions and border closure on Finnish firms. Here an attempt is made to formally investigate firm survival in this time of turbulence by utilising regional and sectoral data on firm closure, new firm formation and bankruptcy. A spatial Durbin model is estimated to take into account the geographical distance, contiguity and travel time to the Russian border in order to provide insights whether firms in regions adjacent or close to the border (or firms in certain sectors) are on average affected more than firms in regions further away from the border and closer to international markets.

Social Capital and Voting Behaviour in the United States

Dr. Pedro Fierro¹, Prof. Francisco Rowe², Prof. Andrés Rodríguez-Pose³, Prof. Ellen Helsper³

¹Adolfo Ibanez University, Viña Del Mar, Chile, ²University of Liverpool, Liverpool, United Kingdom, ³London School of Economics and Political Science, London, United Kingdom

S77 The Geography of Political and Life Discontent, G3, August 27, 2025, 11:00 AM - 1:00 PM

Social capital has historically been recognised as a pivotal dimension for gauging the vitality of democratic systems. In electoral terms, it has been perceived as a catalyst for voting behaviours, predominantly through its influence on civic participation and trust. Although social capital is usually viewed as a positive counterforce against populist movements, certain studies have underscored its dual nature, positing that under specific conditions, elevated levels of social capital might foster anti-establishment sentiments. Recognising the foundational studies of social capital, it becomes clear that the concept extends beyond a single dimension. This research adopts the well-established distinction between bonding social capital and bridging social capital, hypothesising that each type has distinct effects on political views. The aim is to explore the complex roles of different social capital forms in either reinforcing or undermining support for populist narratives in particular settings. Drawing on data from META and leveraging the methodologies recently introduced by Chetty et al. (2022a, 2022b), this study understands social capital across three dimensions: social connectedness, which measures interactions among individuals from diverse socioeconomic backgrounds; social cohesion, characterised by clusters of friendships and social networks; and civic engagement, indicated by volunteering rates and the existence of civic organisations within an area. This analysis suggests that social cohesion and civic engagement are indicative of bonding social capital, where interactions among individuals with similar backgrounds strengthen networks within tighter communities. Conversely, social connectedness represents bridging social capital, marked by diversity and interactions between different communities. Building on prior studies, this research hypothesises that the rise of populist narratives can be traced to enduring economic and demographic downturns in areas marked by significant levels of social capital. However, this study posits that the impact and relevance of social capital on populism might vary depending on the specific dimension of social capital being examined. Using Donald Trump's electoral performance in the 2016 presidential election as a case study, the results affirm the hypotheses. Bonding social capital is found to have a positive association with Trump's vote margins—serving as a proxy for populist narratives—while bridging social capital demonstrates a negative correlation. Additionally, an examination of interactions reveals a complex interplay among economic and demographic downturns, social integration, and political leanings, especially amid economic transformations. Through this investigation, the intricate interplay between social capital, territorial disparities, and political unrest is scrutinised.

Internet Quality at the Local Scale in Poland and Its Relation to Socio-Economic Development

Dr. Krzysztof Janc¹

¹University Of Wroclaw, Wroclaw, Poland

G05-O5 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 28, 2025, 4:30 PM - 6:30 PM

As the Internet continues to evolve both technically (in terms of access methods) and practically (in terms of the use and application of network tools), limited or poor-quality access, characterized by low technical parameters, excludes certain groups from fully participating in social and economic life. From a spatial perspective, residents of peripheral areas, particularly rural areas, are often the most excluded, not only due to lack of Internet access but also due to inadequate connection quality that prevents them from fully utilizing the Internet.

This research aims to identify local-level Internet quality and explore its correlation with socio-economic development, using Poland as a case study. The investigation assumes that spatial differentiation in Internet speeds represents one facet of the digital divide. The socio-economic data employed includes various indicators such as community prosperity, entrepreneurship, migration patterns, and investment expenditures from the European Union. Understanding the relationship between Internet speed and local community characteristics is crucial for formulating development strategies that facilitate both digitization and broader developmental processes. The primary data sources for this study include fixed broadband and mobile Internet performance data obtained from Ookla via crowdsourcing, complemented by data from Poland's Central Statistical Office.

The research results confirm that the regularities known from other spatial dimensions (countries, regions) are also evident in the case of Internet quality at the local scale in Poland. Notably, Internet quality is associated with features describing important spheres of local community functioning.

However, these correlations are not sufficiently strong and do not always indicate easily interpretable patterns of spatial differentiation, preventing the formulation of categorical conclusions regarding universal rules affecting Internet quality in local systems. This underscores the relevance of local conditions, which often vary significantly among individual municipalities, aligning with the principles of smart rural development.

Regarding practical issues related to laying the foundations for smart growth, the analyses presented, especially in terms of spatial variation, highlight areas with poorer access to high-speed Internet where appropriate investment decisions should be made. The importance of small, local ISPs, highlighted in the study, supports the argument that it is possible to provide high-quality Internet even in rural and peripheral areas.

This research was funded by the National Science Centre, Poland. Grant number 2020/39/B/HS4/00423.

Accessibility to High Amenities: The Key to Understanding Inner-Metropolitan Gaps and the Decline of Anti-Adaptive Neighborhoods

Dr. Shaul Hartal¹

¹Ben Gurion University Of The Negev, Netanya, Israel

G22-O3 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, B6, August 27, 2025, 2:00 PM - 4:00 PM

The accessibility to lifestyle amenities increasingly influences intra-metropolitan inequalities. The gaps are typically attributed to restricted access to jobs, resources, and infrastructure and to ethnic and social identity issues. However, this research delves into how the availability and accessibility of high amenities shape the socioeconomic landscapes and attractiveness of urban neighborhoods, with a particular focus on Anti- Adaptive Neighborhoods (AANs). AANs are defined by how they are planned and built, in a single plan encompassing both public and private elements prepared by a single planner, built and populated at once, and their spatial design, dedicating them to a single use (usually housing), based on inward-turned structure, large open spaces and separation from the surrounding built area. AANs often suffer from spatial stagnation due to their characteristics, which lead to social and economic decline. This study tie the definition and performance of AANs with the possible restricted development and accessibility to high-amenities. Based on in-depth investigation of amenities distribution, the spatial structure of residential neighborhoods and the long- term development of socioeconomic characteristics, we study: (1) the effect of neighborhood structure on high-amenity accessibility, (2) how spatial configurations influence the development of high-amenities, and (3) the socioeconomic outcomes associated with limited access to these amenities. Utilizing GIS mapping, socio-demographic data integration, and a high-resolution Accessibility Calculator, the research assess high-amenity distribution and engagement across 30 neighborhoods within metropolitan areas in Israel. We will present the preliminary results at the conference.

An Evolutionary Tree Framework for a Fair and Inclusive Twin Transition in Europe

Mr. Aditya Kapoor¹, Dr. Gemma Dolores Molero¹, Dr. Dr. Francisco Enrique Santarremigia¹, Mr. Mehdi Zarehparast Malekzadeh¹, Mr. Ashwani Kumar Malviya¹, Mr. Tom Flynn², Ms. Maria Chiara Leva

¹AITEC Asesores Internacionales, SRL (AITEC), Parque Tecnológico. C/Charles Robert Darwin, 20, 46980 Paterna-Valencia, Spain. <https://www.aitec-intl.com/>, , ²TFC Research and Innovation. 172, Sarto Lawn, Sutto, Dublin 13, Republic of Ireland. <https://www.tfcengage.com/>, , ³Human Factors in Safety and Sustainability Research Centre, Technological University Dublin, ,

S88-S1 Twin Transition and its Unequal Geography, B2, August 27, 2025, 4:30 PM - 6:30 PM

The FITTER-EU project addresses the critical challenge to help ensure that a fair and inclusive twin transition encompassing both green and digital transformation, in Europe is delivered. The project takes a process-oriented approach with the aim to replicate and extend it to multiple contexts/sectors throughout the EU. For benchmarking, the project implements this approach in six use cases - Germany, Hungary, Italy, Ireland, Spain, and Portugal, covering four contexts/sectors - Energy, transport, building, and agri-food/agriculture. This extended abstract introduces an innovative evolutionary tree framework to map the project's developmental stages from data collection to the final policy-relevant outputs, similar to the evolution of a tree through the seasons —Winter (Research inputs and foundation), Spring (Progression and fine-tuning of research towards actionability), and Summer (policy-level decision-making - Influence, Impact, and Guidelines)—each illustrated by distinct figures. The fruit-bearing “Summer” season in the FITTER-EU project becomes possible through the development of a Fitter Digital Platform powered by an intelligent decision-support system for policymakers. Thus, the digital platform is the fruit or the manifestation of all the research-heavy work carried out across the preceding seasons, including data gathering, scenario building, vulnerability mapping, along complex operation insights. It is symbolic of the strength of the roots that support the FITTER-EU evolutionary tree and that ultimately help produce the fruit. The digital platform will be used to identify and mitigate risks of social exclusion among vulnerable groups during the twin transition. Preliminary outcomes include the development of quantifiable composite indicators for four sectors (Energy, transport, buildings, and agriculture) that form the basis of scenario building and the corresponding vulnerability mapping process. Further, these findings inform targeted policy interventions and underpin the development of best practice guides. The innovation of this work lies in its potential to drive anticipatory governance and ensure that transition policies do not inadvertently exacerbate existing inequalities.

Remote learning during the Covid-19 pandemic: evidence from a three-level survey of Italian schools

Prof. Adriana Di Liberto¹, Dr. Andrea Caria¹

¹University Of Cagliari, Cagliari, Italy

S38-S2 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),

E14, August 27, 2025, 2:00 PM - 4:00 PM

We used data collected during the COVID-19 pandemic, from March to June 2021, to examine how Italian upper secondary schools reorganized their activities for remote learning (RL). We conducted a three-level survey, administering questionnaires to students (11th and 13th graders), teachers, and school principals at each institution. The final sample includes 11,154 students, 3,905 teachers, and 105 school principals. The data allow us to describe: a) how schools adjusted to the pandemic to ensure learning effectiveness during RL, b) how teachers and school principals managed the transition from traditional to online teaching, c) the perceptions of students, teachers, and school principals regarding the effectiveness of RL. This analysis highlights Italian schools' challenges in changing teaching styles during RL and identifies inequality patterns at individual and school levels. It also underscores a significant gap between teachers' perceptions of their digital skills and the actual use of ICT in class during RL activities. Our results identify a positive and robust relationship between the use of innovative teaching methodologies in class, the adoption of appropriate organizational innovations at the school level, and specific teachers' training with the student's perceptions of learning and other outcomes related to student success.

Critical raw material supply and regional technological trajectories. Evidence for Chinese prefecture-level cities

Prof. Simona Iammarino¹, Dr. George Yunxiong Li

¹University of Cagliari, Cagliari, Italy, ²London School of Economics (LSE), London, UK

G03-O6 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 29, 2025, 9:00 AM - 10:30 AM

The existing literature has extensively explored the technological evolution of regions, although little attention has been devoted to the underlying tangible material factors. Critical raw materials (CRMs) – such as rare earths and metals – are fundamental inputs to cutting-edge technologies, and the stability of their supply chains plays a crucial role in shaping the innovation environment of local enterprises. This paper uses China's prefecture-level cities as a case study to examine the relationship between the local supply conditions of 15 CRMs and regional patent output. After controlling for endogeneity, we find that the local supply of critical raw materials influences both the quantity of regional patent output and the technological specialization paths of regions. Furthermore, we show that this impact is moderated by the regional industrial base, the resource ownership, and innovation policies. While the Regional Innovation Systems (RIS) literature has traditionally emphasized knowledge flows, human capital, and institutional frameworks, this study broadens this perspective by incorporating the case of CRMs. We demonstrate that material availability can steer technological trajectories within regions, leading to more concentrated innovation paths based on local resource endowments. This highlights that regional innovation is not only a function of knowledge, talent and other intangibles, but also deeply dependent on material resources and their supply conditions.

Municipality Digitalisation and Local Engagement: The Case of Chile

Dr. Pedro Fierro¹, Prof. Ellen Helsper², Prof. Teresa Correa³, Prof. Sergio Toro⁴

¹Adolfo Ibanez University, Viña Del Mar, Chile, ²London School of Economics and Political Science, London, United Kingdom, ³Universidad Diego Portales, Santiago, Chile, ⁴Universidad Mayor, Santiago, Chile

S56-S2 Digitalization and Inequality: Territorial Disparities and Policy Effectiveness, Amph 2, August 29, 2025, 11:00 AM - 1:00 PM

The digitalisation of local governments is often seen as a tool to enhance transparency, improve service efficiency, and increase civic engagement. However, its effects are not uniform, as digital tools can either reduce spatial inequalities or reinforce existing patterns of exclusion. This paper examines the relationship between local government digitalisation and political engagement in Chile, focusing on both attitudinal and behavioural dimensions.

Using a sequential research design, the study first analyses the structural determinants of municipal digitalisation based on the Digital Municipality Index, complemented with official municipal data. It then explores how digitalisation shapes political engagement through survey data from Fundación P!ensa, comprising 9,924 face-to-face interviews conducted in the Valparaíso region between 2018 and 2023.

Findings suggest that municipal digitalisation is strongly associated with income levels, while factors such as workforce professionalisation and rurality have less predictive power. Regional differences also emerge: in southern Chile, population size and municipal income are the primary drivers of digitalisation, whereas in central Chile, workforce qualifications and municipal income play a more significant role.

At the individual level, digitalisation appears to influence both online political efficacy and local engagement. Living in a digitalised municipality is associated with greater awareness and use of municipal websites, suggesting that digital tools can foster engagement. However, municipal wealth exhibits a negative relationship with online political efficacy in multiple measures, indicating that individuals in marginalised areas perceive the Internet as a more potent tool for political empowerment.

The study also examines the impact of the COVID-19 pandemic, which significantly influenced digital engagement. The negative relationship between municipal income and online political efficacy was stronger before the pandemic, while the positive association between digitalisation and local website use intensified post-pandemic. These findings underscore the evolving role of digitalisation in political engagement, particularly in highly centralised and unequal contexts.

Overall, the study highlights how municipal digitalisation interacts with broader structural inequalities, shaping patterns of political inclusion and exclusion. While digital tools can enhance engagement, their effects depend on local conditions, raising important considerations for policymaking in the Global South. Understanding these dynamics is crucial as digitalisation continues to reshape local governance and citizen participation.

Mind the Gap: Gender, Geography, and the Effects of the COVID-19 Pandemic on Publication in Regional Studies Association Journals

Prof. Simona Iammarino¹, Dr. Gainbi Park, Prof. Rachel Franklin, Ms. Sally Hardy, Prof. Jessie Poon

¹University of Cagliari, Italy, Cagliari, Italy, ²London School of Economics (LSE), London, UK

S27-S3 Gender Equality in Regions in Europe and Beyond, D12, August 28, 2025, 4:30 PM - 6:30 PM

The impacts of the COVID-19 pandemic were deep and lasting and the effects on research and researchers have been widely documented. This paper contributes to this literature through an investigation of the gendered and geographic impacts of the pandemic on the five Regional Studies Association (RSA) journals. With the cooperation of Taylor and Francis, the RSA's journal publisher, we generate a database of manuscripts submitted between January 2018 and December 2022. Employing gender-estimating algorithms and geographic locations of lead authors, we explore overall submission patterns over this 5-year period, as well as trends in final editorial decisions by authorship characteristics, gender, and geography. We find evidence that the COVID-19 pandemic temporarily depressed manuscript submissions, with heterogeneous effects depending on journal, continent, and composition of authorship team. We also find strong evidence of persistent gender disparities in submission and acceptance rates that predate the pandemic, and therefore cannot be attributed solely to its effects. These findings reinforce the importance of identifying and effectively tackling persistent inequalities in academic publishing, and highlight that further action may be required in order to ensure equity and inclusivity in academic and research practices.

EU-Andorra Association Agreement: a CGE impact analysis

Mr Davide Rognini¹, Dr Patrizio Lecca¹, Dr Jorge Díaz-Lanchas¹

¹Universidad Pontificia Comillas, Madrid, Spain

G04-O5 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 29, 2025,
11:00 AM - 1:00 PM

This paper explores the potential impact of an Association Agreement (AA) between Andorra and the European Union (EU), through a two-country multi-sector computable general equilibrium (CGE) model. The signing of this AA arises from a dual perspective. On the EU side, recent global trends such as geopolitical tensions, protectionism, and the influence of new economic powers like China have pushed European institutions to shift towards a regionalization strategy, strengthening the links with closer and “like-minded” countries. Andorra’s perspective focuses on compensating for many of the drawbacks that literature attributes to small countries, namely reduced domestic markets and resources and higher trade openness and volatility.

Currently, Andorra’s economy is already closely integrated with the EU, yet it remains outside the European Economic Area (EEA). This paper models the AA through two key aspects: first, a reduction of tariffs on agricultural products (the last category still facing barriers), and second, a liberalization of service sectors through Non-Trade-Barrier reduction. The model draws data from a regional IO table especially designed for this study based on Andorra’s national input-output tables and EU trade data, accounting for 18 economic sectors.

The results indicate that the AA positively addresses many of the drawbacks of a small country, such as Andorra, enhancing competitiveness and reducing inefficiencies and suboptimality problems. However, this may worsen the sectoral and geographical specialization of the country, deepening the relationship with its major trade partner and making it more vulnerable to possible shocks in the EU. On the other hand, the AA highlights the importance of regionalization for the EU as a strategy to foster regional integration in an adverse world conjuncture towards liberalization despite a relatively minor and slightly negative effect for the EU. While the EU’s populist sentiments may remain intact, these agreements may offer a common solution and strategy to tackle deglobalization.

This paper contributes to the academic understanding of free trade agreements in the context of small states, shedding light on the potential economic transformation that may result from deeper integration with the EU, with implications for policy-making and future trade negotiations.

The High Tech Industry in the EU: A regional input-output approach to disentangle the links within technology clusters

Dr. Luis Galiano Bastarrica¹, Dr. Jorge Lopez Alvarez¹

¹European Commission - JRC, Seville, Spain

S57-S1 Cohesion Policy and Industrial Policy: Competition or Complementarity?, Amph 2, August 28,
2025, 4:30 PM - 6:30 PM

Understanding and quantifying the interlinkages within “high tech” industries in EU27 is fundamental in the design and implementation of effective EU regional policies. The context of the Von der Leyen II Commission, characterised by mainstreaming competitiveness in all EU policies, positions “high tech” industries as a key leverage to strengthen the EU’s economic security. What remains a key question is whether increasing investments in those industries, for instance through a reformed post-2027 Cohesion Policy, might increase regional disparities. This research presents a novel application of the JRC’s “CARMEN” model (Computational Analysis of Regional Multipliers of the European Economy). Through its regional input-output architecture, which includes all EU27 NUTS2 territories in 56 industries covering the whole EU economy, the model calculates a decomposition of domestic value added in intraregional, interregional and feedback effects for a cluster of high tech regions and industries. The findings show that investments in high tech tend to remain within those industries and regions; not generating substantial spillover effects to the rest of the EU27 economy, and that such investments risk exacerbating urban-rural and north-south divides in the EU. Such findings hold consistently across different formulations of the high tech cluster, and point to a characterisation of such industries as “deep pockets” where resources tend to stay confined – to a large extent not percolating to the rest of the EU27 economy.

Technological Convergence in Russian Regions: Factors, Dynamics and Spatial Effects

Prof. Svetlana Rastvortseva^{1,2}, Assoc. Prof. Ekaterina Kadochnikova³

¹HSE University, Moscow, Russian Federation, ²Financial University under the Government of the Russian Federation, Moscow, Russian Federation, ³Kazan Federal University, Kazan, Russian Federation

S56-S2 Digitalization and Inequality: Territorial Disparities and Policy Effectiveness, Amph 2, August 29, 2025, 11:00 AM - 1:00 PM

The concept of catch-up development, known as the hypothesis of absolute convergence, suggests that poorer countries can reduce income disparities by adopting the experience of more developed economies. However, technological convergence appears to be more significant, as the diffusion of technologies serves as a key driver of economic growth (Grossman & Helpman, 1991; Aghion & Howitt, 1992). This study aims to identify the conditions and factors of technological convergence in Russian regions to develop policy recommendations accordingly.

The scientific novelty lies in the econometric analysis of factors influencing catch-up technological development, considering spatial interactions. Two hypotheses are proposed: technological convergence and divergence vary depending on the absorptive capacity of regions, as well as their financial conditions and spatial effects. The k-median clustering method was divided all regions into four clusters based on technological potential. The dynamics of technological development were assessed using the conditional β -convergence model (Barro & Sala-i-Martin, 1992) with temporal and spatial lags (Griliches, 1979). A positive correlation between innovation activity and economic development was identified, with leading regions concentrated in the European part of Russia (Moscow, St. Petersburg and Tatarstan), while regions with low technological potential were found in resource-extracting areas of the Asian part of the country.

A comparison of centroid values of technological potential indicators revealed significant disparities in innovation activity and socio-economic conditions, particularly in European regions. The positive spatial correlation of labor productivity confirms the impact of "breakthrough" regions on their neighbors. The absence of σ -convergence in labor productivity and financial conditions from 2010 to 2022 indicates persistent technological inequality, while the identified β -divergence suggests that disparities between regions with high and low levels of technological innovation are being reinforced. This finding aligns with previous studies (Badunenko & Tochkov, 2010; Kadochnikova et al., 2022; Mikhailov et al., 2020).

Driving the Circular Transition in Practice through Public Procurement: An Exploration of Calls for Tender Documents

Dr. Jonathan Morris¹, Lisa Junge², Prof. Namchul Shin³

¹Leibniz Institute For Ecological Urban And Regional Development, Dresden, Germany, ²TU

Dresden, Dresden, Germany, ³PACE University, New York, USA

S01-S3 The Spatial, Regional and Urban Dimensions of Circular Economy, Amphitheater II - SAKIS

KARAGIORGAS, August 27, 2025, 4:30 PM - 6:30 PM

The market shaping potential of public procurement can be harnessed to drive the integration of circular practices and strategies into the supply chains of companies providing goods and services to the public sector. By placing criteria into calls for tender, governments can support new technologies, products and innovations which can help to drive the circular transition. This research is concerned with how circularity is currently integrated into existing calls for tender for public procurement projects. This also concerns cities and regions, since business activity is concentrated into specific geographical areas, and the evaluating of the success of policies will need to be evaluated through the development of screening criteria, indicators and monitoring systems. In order to address the first objective, research explores public tender documents from European countries from the Tenders Electronic Daily (TED) database for the year 2023, applying automated content analysis to synthesise qualitative and quantitative information arising from the documents. Automated content analysis relies on machine learning and text-mining, which is not yet widely applied in the sustainability management literature, making it an innovative methodology to derive insights for the equally new topic at hand. From our test study sample of 269 calls for tender containing the terms “circular economy”, we find 89 tenders which are explicitly focused on the local and regional level. Our testing phase analysis of tender documents (n=20) so far has found a lack of CE integration into PP call for tender documents, with price dominating the award criteria, and vague environmental references that lacked clear operationalization or scale of activity. The continued work will continue to test and refine the framework and model, to provide deeper insights into how PP can be implemented at different spatial scales to support circular economy transitions, and roll out the methodology to a wider range of calls for tender across the European Union.

Electric Mobility in Sweden: Analyzing Consumer Behavior and Regional Spread of BEVs

Dr. Krister Sandberg¹, Dr. Mikael Levin¹, MSc Anette Myhr¹

¹Transport Analysis, Stockholm, Sweden

G05-O4 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 28, 2025, 9:00 AM - 10:30 AM

This study examines the adoption of Battery Electric Vehicles (BEVs) in Sweden, focusing on socio-economic factors and consumer behavior from 2020 to 2024. The study is based on Sweden's official vehicle statistics and official household data. By matching data on households (approximately 4.5 million households) with data on BEVs (approximately 300,000), we are able to analyze which socio-economic factors are decisive for whether a household chooses to acquire an electric vehicle as well as whether they opt to purchase or lease the car.

Factors such as higher income, living in a house or condominium, and households with a predominance of men are positively associated with both buying and leasing. These households are largely located in metropolitan municipalities, though not typically in the central part of the municipality. Both households that buy and those that lease often already own a car. There is also a tendency for the oldest car owner in the household to be somewhat younger.

There is no observable secondary market spread over time from these metropolitan areas to less densely populated regions. This can be largely attributed to the age profile of the BEVs, which are still relatively new. Consequently, these vehicles have not yet permeated into municipalities with an older vehicle fleet.

Despite an impressive growth in sales over time, the rate of new BEV sales slowed in 2023, and sales figures for 2024 have shown a decline compared to 2023. The observed decline in new BEV sales can be explained by a reduction in private leasing. Those who have chosen to privately lease a car are generally younger, have lower incomes, and are more likely to live in multi-family dwellings compared to households that purchase a BEV. We conclude that private leasing customers have been more affected by the ongoing economic downturn, and therefore, they have opted not to acquire a new car during 2023 and 2024. These findings highlight the need for targeted policies to address regional disparities and economic vulnerabilities.

Combating Social Inequality in Europe: Identifying Drivers of Policy (Dys)functionality

Dr James W. Scott¹

¹University of Eastern Finland, Joensuu, Finland

S38-S1 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 27, 2025, 11:00 AM - 1:00 PM

The core assumption informing this paper is that given the EU's territorial and social cohesion crisis, policy design and delivery need to be better informed by the experiences of persistently underperforming places and systematically marginalized social groups. As part of the Horizon project ESSPIN our work has involved the in-depth analysis of various case studies of policy interventions of national and regional governments and their interactions with local institutions in the provision of public services. We have asked the question: why do measures targeted at correcting market failures and socially unacceptable distributions of income and wealth often fail and how might such measures be repurposed in order to enhance effectiveness? The approach taken in our analysis is place-based in the sense of an "inverted" view on policy as reflected in local translation and perceptions of EU-level and national policies. Results of our analysis reveal a number of salient factors that underscore the role of institutional proximity to local citizens, the role of multilevel partnership and flexible but long-term perspectives.

The urbanization of cultural expenditure: exploring determinants and economic impacts of Italian Province spending on culture and arts

Prof. Stefania Tonin¹, Prof. Antonella Ardizzone², Prof. Valeria Morea³

¹Università IUAV di Venezia, Venice, Italy, ²Iulm University, Milan, Italy, ³Erasmus School of History, Culture and Communication, Erasmus University Rotterdam, Rotterdam, the Netherlands
G15-O1 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness, Quality of Life, E1, August 27, 2025, 4:30 PM - 6:30 PM

Public expenditure for culture is a variable used extensively to approximate public action that supports or promotes the cultural and creative industries. Reasons for public spending in the arts and culture range from public and merit goods to option demand as well as to cost disease, but applied research typically looks at the National level. Nonetheless, culture is an urban phenomenon. From a production perspective, studies on the localization of cultural markets and scenes have delineated a picture in which at the urban scale agglomeration and urbanization economies prevail. From a consumption perspective, many scholars have pointed out at the importance of local amenities and opportunities like networking to the so-called creative class. Moreover, many international initiatives recognize the pivotal role of cities for the cultural and creative industries.

This research contributes to this field of inquiry looking at the case of Italy. While this country has a great endowment of cultural heritage, its support to culture adheres the broad trend of budget cuts. In this regard, only a limited number of scientific articles report on research on Italian public expenditure especially at the local scale. We used data on the expenditure on culture for each Italian Province (n=107) for the period 2004-2019. In this study, we employ two dependent variables: one defined as the sum of current account expenditures (i.e., maintenance and salaries of the municipal cultural sector) and capital account expenditures (investments in the municipal cultural sector), and another defined as the ratio of current cultural expenditure to the total expenditure of each province. For the independent variables, we selected a set of socioeconomic indicators that approximate local development, including GDP per capita, social capital, education rate, unemployment, and the extent of green urban areas. We estimated a dynamic panel model, along with other basic models, to analyze the relationships. Our findings indicate that wealthier regions and those with greater economic output tend to allocate more resources to cultural spending. In contrast, regions with higher proportions of very young or elderly residents are associated with lower spending. Additionally, variables representing cultural institutions (such as the presence of museums) and urban management indicators (such as urban waste and population density) significantly influence municipal cultural expenditure. These results provide a nuanced understanding of how various factors interact in shaping public cultural investment, offering valuable insights for policymakers aiming to support or adjust cultural spending at the urban level.

The role of FDI in global value chains and the circular economy

Dr. Balázs György Forman¹

¹John Von Neumann University, Kecskemét, Hungary

S01-S3 The Spatial, Regional and Urban Dimensions of Circular Economy, Amphitheater II - SAKIS

KARAGIORGAS, August 27, 2025, 4:30 PM - 6:30 PM

The role of FDI in global value chains and the circular economy

FDI, as one of the most defining phenomena of today's world economy, has been researched from many aspects in recent decades. Many have examined it from the perspectives of host and sending countries, investing transnational corporations and the local communities involved. But these studies described the role and significance of FDI in the context of an economic system operating on a linear principle. But today, the situation has changed. With the spread of the circular economy practice and the emergence of relevant regulations, TNCs are also forced to rethink the material flows associated with their products. Many questions arise here as well. For example, is a car factory obliged to recycle the passenger cars it produces? At the end of their lifespan? Or only if all their parts are original factory parts? Is it possible to narrow the range and quantity of products that can be recycled after use? Or is the goal really to return as much of the material from consumer durables and cars that have become unusable and obsolete at the end of their lifespan to the material flow of the circular economy as possible?

The situation is not simple even if the entire value chain is within one country.

But what about when the main components of a passenger car are manufactured in 4-5 countries, and all its components in 30-40 countries, as a result of the work of hundreds of suppliers? For example, who should be responsible for taking back used cars, dismantling them, and reusing their components and materials? Can a reverse value chain be created within TNCs? What role can a country, where FDI spends 85-90% of its sales revenue on imported parts, raw materials, and energy sources, and 99% of its sales revenue comes from exports, have in a global circular economy? Will the plants in the parent company's country or in the FDI destination countries be responsible for the buyback?

Spatial Inequalities in the Educational Outcomes of Primary School Pupils in Poland in the Years 2022–2024

Dr. Marzena Walaszek¹

¹Adam Mickiewicz University, Poznań, Poznań, Poland

G11-O2 Public Policy Assessment: Inclusiveness and Poverty Alleviation Across Space; Equality in Opportunities and Territorial Justice, A2, August 29, 2025, 2:00 PM - 4:00 PM

The implementation of education policy in Poland is underpinned by national legislation as well as local strategies formulated in response to specific regional challenges. The quality of education is influenced by a multitude of factors, ranging from dynamic socio-economic processes and rapidly evolving phenomena to the day-to-day functioning of schools. Notably, Poland now faces the imperative to assess the long-term impacts of the education reform initiated in 2016—now approaching its tenth year—which aimed to enhance educational outcomes and equalise opportunities for children and young people. The primary objective of this study is to elucidate the spatial disparities in the educational outcomes of pupils in the final grades of primary schools in Poland for the post-pandemic period (2022–2024). The analysis focuses on three core subjects: Polish, mathematics, and a foreign language (with pupils having the option to choose from English, French, Spanish, German, Russian, or Italian). The temporal scope of the research encompasses the years 2022–2024, with the municipality serving as the fundamental spatial unit of analysis. Two principal methodological approaches are employed. First, the k-means clustering method is utilised to reveal the underlying structure of the educational performance across the studied units. Second, spatial autocorrelation analysis is applied to quantify and identify spatial inequalities, enabling the detection of clusters of areas with either high or low levels of the examined phenomenon. The findings of this research may serve as a robust basis for evaluating the efficacy of education policies at both national and local levels, while also pinpointing compact regions where further enhancements in teaching quality are recommended. Ultimately, these insights aim to contribute to the equalisation of educational opportunities for Polish children and adolescents as they transition to subsequent stages of education.

Do 'size' and 'distance' still matter? Long-term analysis of evolution of location and specialization decisions of economic activities in Spain

Dr. Fernando Rubiera Morollón¹, Guillermo Rodríguez Lopez

¹REGIOlab - University of Oviedo, Oviedo, Spain, ²University of Zaragoza, Zaragoza, Spain

G01-O4 Urban, Regional, Territorial and Local Resilience, B5, August 27, 2025, 4:30 PM - 6:30 PM

One of the key aspects of regional science has been understanding the decisions regarding the location of economic activities. Such decisions determine the specialisation of territories and therefore their economic prosperity and resilience. Distilling the essence of all the classic and most current theories on the location of economic activities, it is concluded that two basic variables are behind all the processes of concentration/dispersion of economic activities: the 'size' -in terms of the generation of large urban agglomerations capable of unleashing external economies associated with the agglomeration- and the 'distance' -fundamentally with respect to large concentrations of population, that is, with respect to the 'size'-. The development of the digital economy has brought back to light the debate on the importance of 'distance'. New technologies reduce the costs associated with distance and should supposedly facilitate the processes of relocation. We have built a database at a local level for Spain from 1950 to 2010 with which we can study the location decisions of the different activities. Spain is an ideal case, as in these 60 years it has experienced profound economic and social change. The quality of infrastructure has also changed completely. Looking back over these decades we can see to what extent 'distance' and 'size' have changed their roles and to what extent classic approaches to location are still relevant or not.

The role of regional innovation actors in social innovations

Mr Florian Grebe¹, Ms Angelika Krehl¹

¹Niederrhein University Of Applied Science, Moenchengladbach, Germany

G03-O6 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 29, 2025, 9:00 AM - 10:30 AM

Many regions face structural change processes as well as socio-economic and societal challenges. Regarding the Regional Innovation System (RIS) framework, these challenges can be mitigated by utilizing regional endogenous potential through innovation and cooperation between regional actors from the quadruple helix. Among other things, social innovations (SI) are suitable for strengthening the future viability of a region. A deep understanding of SI is required to leverage the regional endogenous potential. Apart from the context-providing research questions regarding who the innovation actors are and what resources they provide, we focus on what triggers the collaboration, divided into motivation and impulse to cooperate. We address this question by conducting a collective case study in two cities in the Lower Rhine region of North Rhine-Westphalia (Germany), focusing on nine SI with 43 guided interviews. The interviews were conducted with SI representatives, innovation actors' representatives, and regional networkers, who provided an overview of the SI landscape in the respective city. By conducting thematic analyses, we found that the motivation of innovation actors ranges from strategic micro-interests, strategic macro-interests, and the shaping of social and political space to the intrinsic motivation of decision-makers. Furthermore, the direction of the cooperation impulse varies greatly in terms of the popularity and establishment of the SI and depends on the networks of individuals and companies as well as the regional focus. The findings inform the scientific community and policymakers, and we use them to derive policy recommendations for strengthening regional SI.

Zombie firms and competition

Francesco Androni, Dr. Alberto Marzucchi¹, Dr Andrea Ascani

¹Gran Sasso Science Institute, L'Aquila, Italy

G03-O2 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 27, 2025, 2:00 PM - 4:00 PM

The phenomenon of zombie firms has been increasing through time in the last decades. Prior research has extensively examined the role of zombie firms in credit misallocation and weak insolvency regimes. However, limited attention is paid to how the competitive environment has influenced its surge. The analysis focuses on whether the intensity of competition influences the diffusion of zombie firms, by assessing local competition forces such as firm entry and innovation intensity. We use micro-aggregated data at the region-sector level to analyse the diffusion of zombie firms in Italy for the years from 2014 to 2020, and identify a substantive role of reallocation forces in driving the shares of zombie firms. Competition in the form of entry and, albeit more weakly, innovation intensity reduces the diffusion of zombie firms, ultimately showing that a decrease in competition intensity is part of the phenomenon. This research contributes to understanding the relationship between zombie firms and sluggish economic activity, describing further factors that affect their formation and persistence.

Re-examining the Role of Physical Proximity Among Enterprises: The Importance of Cognitive Proximity in the Greek Aerospace Sector

Ms Chrysi Stathaki¹

¹University Of Thessaly, Volos, Greece

G03-O4 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 28, 2025, 9:00 AM - 10:30 AM

Geographical proximity, referring to the physical location of potential collaborators such as universities, businesses, research centers, and individual researchers, has always been crucial for fostering and enhancing innovation in its various forms. This importance stems from the fact that distance can often introduce linguistic, cultural, institutional, and other differences that may hinder collaborative efforts (Kirat & Lung, 1999; Torre & Rallet, 2005). However, insights from the French School of Proximity Dynamics in the 1990s marked a new scientific perspective by revealing that proximity also includes non-spatial factors that can play an equally important, if not more significant, role in the innovation process. These non-spatial dimensions encompass cognitive, social, institutional, and organizational aspects. By exploring the various dimensions of proximity, researchers discovered a comprehensive support mechanism centered around mutual trust, hierarchies, cognitive abilities, institutional compliance, and other factors. This complex framework aims to enhance communication and coordination among involved parties, ultimately fostering innovation (Boschma, 2005; Mattes, 2012).

In Greece's emerging Aerospace sector, which is defined by its focus on knowledge, technology, and innovation, cognitive proximity among the parties involved is not just a basic requirement—it is essential. This sector addresses critical issues, such as national defense, weather forecasting, navigation, satellite communications, sensors, automation and control systems, and remote sensing, that necessitate both explicit and tacit knowledge sharing, depending on the type and stage of each project. However, it's important to investigate at which level of collaboration -whether in R&D, management innovation, product innovation, process innovation, marketing innovation, or quality control- knowledge dissemination occurs most frequently among partners, both at domestic and international levels.

An extensive investigation of 22 entities within the Greek Aerospace Cluster (Corallia si-cluster) revealed that the significance of geographical proximity (or distance) has become relative. Detailed questionnaires were used to gather insights, and the factors, conditions, and specific characteristics contributing to this shift will be presented as preliminary conclusions at the conference, primarily focusing on the role of cognitive proximity as the key element for establishing collaborative relationships.

Combining digital and green technologies in regions: how to close the gap with respect to the frontier?

Dr Stefano Basilico, Dr. Alberto Marzucchi¹, Prof Sandro Montresor

¹Gran Sasso Science Institute, L'Aquila, Italy

S88-S1 Twin Transition and its Unequal Geography, B2, August 27, 2025, 4:30 PM - 6:30 PM

This paper focuses on the combination of green and digital technologies at the regional level. Using patent data, we put forward an original measurement of the regional speed of green-digital (ie twin) combination: the temporal distance between the time at which a combination is realised for the first time in the frontier region and the time at which this same combination is accomplished in the focal region. We proceed by investigating the drivers and the technological impact related to this speed. We find that the speed of combination is enhanced by dealing with broad and diverse twin technologies. The speed at which the gap is closed, also crucially depends on the interdependencies between green and digital domains, captured by the overlap in their knowledge bases. Counterintuitively, the longer the combination paths, the faster the region combines green and digital technologies. This finding is then rationalised further looking at the policy and network characteristics. Finally, we find that the earlier the combination happens, the greater is likely to be the impact on subsequent inventions, but only for granted patents. Overall, these results are discussed in terms of policy recommendations, given the high attention placed by policymakers on the twin transition.

Land Recycling in Poland – Rational Spatial Management

Dr. Agnieszka Majorek-Gdula¹

¹University of Economics in Katowice, Katowice, Poland

S01-S2 The Spatial, Regional and Urban Dimensions of Circular Economy, Amphitheater II - SAKIS

KARAGIORGAS, August 27, 2025, 2:00 PM - 4:00 PM

Contemporary cities in Poland are developing at an exceptionally dynamic pace, presenting both opportunities and challenges for sustainable spatial planning. Accelerating urbanization and climate change necessitate the rational management of space—an increasingly scarce resource. One of the key issues is uncontrolled urban sprawl, which leads to inefficient land use, environmental degradation, and rising infrastructure costs.

The spontaneous expansion of residential investments largely dictates the spatial development of cities, often without considering long-term consequences.

This paper aims to analyze current land transformation trends in Poland concerning their efficient utilization. A key aspect of the study is the assessment of the extent to which previously developed land (land recycling) is reused compared to the expansion into new areas. The concept of land recycling prioritizes the redevelopment of anthropogenically transformed sites that have lost their original function, rather than the urbanization of previously undeveloped spaces.

The presentation will include case studies from Poland.

Factors influencing childcare environment satisfaction: A multi-level analysis in South Korea

여사Yuhyun Sung¹, Prof. In Kwon Park¹

¹Seoul National University Graduate School of Environmental studies, , South Korea

G07-O2 Spatial Attributes of (de)Population, Ageing, Loneliness and Demographics, D1, August 28,
2025, 4:30 PM - 6:30 PM

Declining birthrates have become an undeniable global megatrend. In South Korea, the total fertility rate stands at 0.8, significantly below the OECD average of 1.6. The prolonged low fertility rate has led to a population decline, exacerbating concerns about social sustainability. This phenomenon stems from various factors, including structural issues such as job insecurity and high housing costs, individual challenges such as difficulties in balancing work and family, and economic burdens associated with childcare. Similar trends can be observed in other countries, where the burden of childcare is recognized as a major contributor to declining birthrates and a key factor influencing fertility decisions (Commission on Fertility and Ageing, 2023).

The COVID-19 pandemic exacerbated inequalities in childcare availability, reinforcing the perception that childcare is a shared societal responsibility rather than an individual burden. While previous policies have focused on expanding childcare services and facilities, spatial aspects of childcare environments remain underexplored. Existing studies tend to emphasize local case studies or housing conditions, lacking broader empirical analyses on the relationship between urban environments and childcare satisfaction.

This study conducts a hierarchical linear model (HLM) analysis based on a survey of 2,900 residents in Seoul with preschool-aged children. Individual-level factors include the child's age, gender, caregiving method, childcare hours, and housing type, while neighborhood-level factors include libraries, parks and playgrounds, road quality, vacancy rates, and street greenery. The study examines how these factors shape childcare environment satisfaction and proposes key components for a 'childcare-friendly environment.'

Expected results are as follows: childcare satisfaction is higher among parents with older children, male children, those providing direct parental care, and those with shorter childcare hours. At the neighborhood level, satisfaction increases with improved childcare infrastructure, better accessibility, reduced road occupation, lower housing vacancy rates, and more street greenery. Through empirical evidence, this study demonstrates the link between urban environment and childcare satisfaction, emphasizing that childcare is a collective societal responsibility. The findings suggest policy recommendations for developing childcare-friendly urban spaces and offer insights for childcare policy and urban planning across different countries.

From State-led Growth to State-induced Decline : The Production of 'Left-behind' Places in South Korea's Post-developmental Context

Ms Gayeon Lee¹, Prof. In Kwon Park

¹Seoul National University, Seoul, South Korea

G14-O1 Left Behind Areas, Insularity, Inner Areas and Border Regions, B4, August 27, 2025, 2:00 PM - 4:00 PM

The rapid advancement of technology and industrial transformation have intensified regional inequalities, creating a handful of 'superstar' cities concentrated with high-tech industries and human capital, while leaving other regions 'left behind.' In South Korea, a striking recent phenomenon is the severe decline of traditional industrial cities like Ulsan and Gumi, which once served as the backbone of Korea's economic growth. These cities now experience regional marginalization as they lose resources to the Seoul Metropolitan Area while failing to compete with foreign cities offering cheaper labor.

South Korea's regional disparities must be understood beyond mere economic differences as products of state-led development strategies. Despite ongoing decentralization policies since the 1990s, local governments outside the Seoul Metropolitan Area face structural limitations due to their low fiscal independence, forcing them to rely heavily on central government funding. This lack of autonomy significantly hampers local governments' ability to address urban shrinkage. Critics argue that local governments avoid acknowledging urban shrinkage because planning for a declining population would result in reduced central government subsidies.

The recent 'Left-behind' places discourse in economic geography offers a fresh perspective by demanding a comprehensive understanding of regional disparities beyond economic metrics, incorporating demographic and social dimensions.

This study aims to contribute to the literature by examining how regions acquire 'left-behindness' within South Korea's developmental state context, analyzing how regional marginalization is reconstituted in the context of decentralization, and how dependency on central government affects regions' self-perception.

This study will focus on two major state-driven shocks in Korea's regional development history: industrialization during the developmental state period and the relaxation of Seoul Metropolitan Area regulations in the 2010s. This historical examination will explain how the central government has contributed to the cultivation of left-behind places by constraining regional autonomy and development potential. This research also contributes to understanding East Asian developmental states' experiences with late deindustrialization and shrinkage.

Bidding for Safety: The Impact of Local Crime on Housing Price Dynamics

Dr Ghizlen Ouasbaa Azzouani

¹Tecnocampus, Mataró Maresme, Spain

G22-O2 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, B6, August 27, 2025, 4:30 PM - 6:30 PM

This paper studies the impact of crime on housing price discounts and final selling prices in Catalonia leveraging a unique geocoded dataset. The data captures the trajectory of properties from their initial listing to the final transaction, alongside spatially and temporally granular crime records. Using a fixed-effects regression model, we estimate the influence of nearby criminal activity on price adjustments and negotiation dynamics. The results reveal significant effects of crime on housing price discounts, with higher crime rates leading to larger price reductions during negotiation stages and lower final selling prices. Furthermore, the magnitude of these effects varies by the type of crime and its proximity.

Leaving for good or coming back? Identifying long-term internal migration patterns of rural young adults in the Netherlands

Ms Tineke Reitsma¹, Prof. Bettina Bock¹, Dr. Femke Cnossen¹, Prof. Tialda Haartsen¹

¹Univeristy Of Groningen, Groningen, The Netherlands

S03-S1 Drivers and Impacts of Migration: New Insights on the Role of Labour Markets, Demographic Change, Human Capital and Networks, G6, August 28, 2025, 9:00 AM - 10:30 AM

To counteract the effects of young adult outmigration on rural areas, several regions implement return initiatives aimed at re-attracting young adult leavers after they have gained education, work experience, or lived elsewhere. Although some leavers return, most migration trajectories after leaving remain unclear, making it difficult for return initiatives to effectively target and time their efforts. In particular, knowledge is limited about the migration trajectories of rural young adult leavers beyond their initial departure and throughout early adulthood, as well as when and where interventions might be most effective in influencing their migration behaviour.

To address this gap, this paper aims at identifying the migration trajectories of young adult leavers and returners (11-35 years old), using the System of Social Statistical Datasets of Statistics Netherlands. After performing sequence and cluster analysis on migration behaviour of rural young adults, our findings reveal five distinct migration patterns: (1) returning to the rural home area and staying, (2) leaving again after returning, (3) moving out once and settling in the new destination, (4) onward migration beyond the first destination, and (5) delayed outmigration at a later age. Variations in migration patterns are largely shaped by the timing of departure from the rural home area and the duration of residence in subsequent destinations.

Next, we analyse how sociodemographic and regional characteristics shape the emergence of specific migration patterns. Following a life course approach we find that the presence and migration history of a partner, level of education, and, in certain patterns, field of study, as well as parenthood, play significant roles in shaping the five migration patterns of rural young adult leavers. These insights offer valuable input for designing more targeted and effective return initiatives that may help to mitigate rural depopulation and keep rural communities vital.

A Culture Based Development Application - Finding The Root of Other - Regarding Preferences

Ms Maryam Alomair¹

¹Swansea University, Swansea, United Kingdom

S05 Founding Principles of Culture Based Development (CBD). A Book-launch Roundtable, G2, August 29, 2025, 9:00 AM - 10:30 AM

Culture Based Development is a research paradigm for cultural bias in economic choice which allows to model the impact of culture on any type of economically relevant topic. In my case, my PhD is focused on the topic of risk and decision making, including the risk concerning human behaviour towards others, or what is known as 'other-regarding preferences'. Through application of the CBD paradigm, I have managed to demonstrate that card driving behaviour is an excellent and culturally informed measure for other-regarding preferences. Namely, behavioural patterns can be carried by migrants from their country of origin to the recipient country. Does this apply for behaviour related to other-regarding-preferences? My CBD-application operationalizes this question through a culturally-augmented model for attentive driving. The results reveal a paradox. Namely, locals' and migrants' behaviour have significant qualitative cultural differences. Yet, when the study focuses only on the behaviour of foreigners, what remains solely significant is the balanced propensity to cultural adaptivity and cultural stickiness in the country of origin (measured through CBD Cultural Entropy). This reinforces an important CBD postulate that Cultural Entropy explains insider and outsider self-identification.

Cultural Capital and Road Security in Saudi Arabia Regions - A Culture Based Development Application

Ms Maryam Alomair¹

¹Swansea University, Swansea, United Kingdom

S04 CBD and Forms of Capital for Local Well-being, G2, August 27, 2025, 11:00 AM - 1:00 PM

Following the example of the TPI MATHER Project and its Culture Based Development approach for tracing the impact from various forms of capital on regional development, I present to your attention an exploration of the cultural capital impact on road security in the regions of Saudi Arabia. The paper uses Google Trends sourced data for the period 2013 till 2022, which is used to demonstrate how linguistic digital footprint can serve as a quantitative measure for local cultural capital and estimate the cultural sensitivity of road safety throughout the country. The road-security and cultural data is also compared as trends with wellbeing data for the same period. This is in a way a continuation of the MATHER Project methodology, but also a novel CBD-specific application, as it is a CBD specific approach to use linguistic digital data as measurement for culture, but this is done in CBD research and never in policy relevant applications as the case of MATHER before. Thus, this is the unique value added of my paper.

The role of luck, uncertainty, risks, asymmetric and imperfect information in regional development

Dr. Balázs György Forman¹

¹John Von Neumann University, Kecskemét, Hungary

S41 Regional Science and Economic Development: Synergies, Insights, and Opportunities, E12, August 29, 2025, 2:00 PM - 4:00 PM

The role of luck, uncertainty, risks, asymmetric and imperfect information in regional development

The role of uncertainty and risks in regional development

Uncertainty is the situation when an economic event occurs

- we do not know with complete certainty the expected result, output,
- we do not know with complete certainty the expected sectoral, general and regional effects,
- we do not fully understand all the external and internal circumstances influencing the output, the results and the effects.

Market competition itself is a factor affecting uncertainty. In the first case, we assume that the implementer of the economic event or a development is alone in the market. In the second case, we assume that two actors compete with each other. In the third case, we assume that there is a large number of players in the market.

Another factor of uncertainty comes from the behavior of competitors in the market. Here we assume that the individual actors are legally independent from each other, well prepared and capable of creating an independent strategy. The segmentation of the spatial and sectoral markets and the identification of the types of behavior of market participants - innovators, early and late followers, dropouts - make it possible to determine the factors that cause uncertainty.

We first assume that the available resources - human, material, natural - are available in unlimited quantities. Second, we assume that one or all of the available resources are limited in quantity.

First, we assume that the distribution of available information is perfect. Then, for the second time, we assume that the distribution of information is asymmetric.

The role of chance: the role of individuals in regional developments, the greys of urban planning and construction

The role of luck: in the discovery of crude oil: the Middle East, Nigeria, the choice of car factories in Central Europe

The role of uncertainty in economic development based on FDI

Risks: natural disasters, external economic shocks,

Asymmetric information: formation of bubble economies in real estate markets, asymmetric economic shocks.

Imperfect information: non-transparent decision-making in regional developments, if there is no partnership, if different actors decide against each other

What Makes a Film ‘Intellectual’? A Quantitative Analysis of European Films Using the UN SDGs Framework

Professor Arianna Martinelli¹, Dr. Piergiorgio Pilo²

¹Scuola Superiore Sant'Anna di Pisa, Pisa, Italy, ²Scuola Superiore Sant'Anna di Pisa, Pisa, Italy

G15-O1 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness,
Quality of Life, E1, August 27, 2025, 4:30 PM - 6:30 PM

The film industry is a key driver of cultural and creative industries (CCIs), contributing to economic vitality and fostering innovation. Beyond its economic role, cinema functions as a socio-political tool, shaping values and exerting soft power. While prior research has examined films' societal impact, little attention has been given to the factors influencing filmmakers' choices of socially relevant themes. This study explores how film characteristics and regional socio-economic contexts shape the intellectual content of European films, particularly film d'essai. Using a dataset of approximately 1,400 European films (2012–2022) sourced from IMDb and Wikipedia, we apply Latent Dirichlet Allocation (LDA) for text analysis to identify dominant narrative themes. These themes are mapped to the UN Sustainable Development Goals (SDGs) using an expanded SDG dictionary. We employ probit and logit models to assess the factors influencing the likelihood of a film being classified as intellectual, incorporating socio-economic indicators such as human capital, GDP, and the presence of creative clusters. The expected results suggest that films produced in regions with higher human and social capital are more likely to address intellectual and socially significant themes, such as sustainability and equality. Additionally, major European film hubs act as incubators for cultural and ideological trends. This research enhances our understanding of cinema's role in shaping contemporary discourse, bridging cultural economics and sustainability studies. By systematically analyzing film content through the SDG framework, this study offers new insights into the intersection of film production, regional context, and social impact.

Digitalisation, platformisation and the transformations of local labour markets

Professor Roberta Capello¹, Dr. Simona Ciappei¹, Professor Camilla Lenzi¹

¹Politecnico di Milano, Milano, Italy

S88-S1 Twin Transition and its Unequal Geography, B2, August 27, 2025, 4:30 PM - 6:30 PM

Rapid technological advancements, primarily in the fields of artificial intelligence and robotics, opening to digitalization and platformisation opportunities, have relaunched the debate regarding their impact on employment, highlighting vast heterogeneity across occupational groups, with the least skilled and least educated workers proved to be the most vulnerable to substitution effects. This paper re-examines this statement by claiming that labour market outcomes vary depending on the digital transformation considered. By distinguishing conceptually and empirically two main ongoing digital transformations, i.e., digitalisation and platformisation, the paper shows their positive, though highly selective, effects for specific occupational groups. Based on an empirical analysis on Italian NUTS3 regions in the period 2018-2023, the paper highlights the role of platforms for the creation of gig jobs, as much as the importance of advanced digitalisation for the creation of creative jobs. Results warn about a wage inequality anxiety, calling for mitigating policies accompanying the diffusion of digitalization and platformization in the upcoming years.

Urban sprawl and productivity in shrinking cities: evidence from Brazil

Dra. Gustavo Castro¹, Dr. Carlos Azzoni¹

¹University Of São Paulo, São Paulo, Brazil

G01-O5 Urban, Regional, Territorial and Local Resilience, B5, August 28, 2025, 9:00 AM - 10:30 AM

Urban shrinkage, characterized by population decline, and urban sprawl, defined as disordered territorial expansion, have become growing concerns in several regions worldwide, raising questions about their economic implications. These phenomena have significant economic implications, as population decline can lead to a shrinking tax base, declining public revenues, and underutilized infrastructure, while urban sprawl may increase infrastructure costs, reduce economic density, and weaken agglomeration economies. One of the key concerns is their impact on labor productivity, as shrinking cities may experience a mismatch between labor supply and demand, reduced firm competitiveness, and declining returns to scale, while urban sprawl can further dilute economic activity over a larger area, weakening productivity gains. This study investigates this paradox between urban shrinkage and sprawl in Brazilian municipalities, using data from the 2010 and 2022 Demographic Censuses to assess their joint effects on labor productivity.

We use a dummy variable for municipalities that experienced population decline between 2010 and 2022. We measure urban sprawl as the growth rate of urban area (in hectares) using satellite imagery data. Historical climatic shocks (drought anomalies) are used as an Instrumental Variable (IV) to urban shrinkage and sprawl.

We find that urban shrinkage significantly increases labor productivity, but this effect is mitigated in municipalities with higher urban sprawl. The interaction term between shrinkage and sprawl is consistently negative across all IV specifications, indicating that spatial expansion resulted in productivity losses in shrinking cities. Robustness checks, including the inclusion of regional, socioeconomic, geographic, and infrastructure controls, confirm the validity of the results. These findings contribute to the literature by highlighting the trade-off between population decline and spatial expansion. While urban sprawl may initially compensate for economic downturns in shrinking areas, its long-term effects on productivity appear to be negative. Policymakers should consider these dynamics when designing strategies for urban resilience and regional development.

Driving the Energy Transition in Airports: Hydrogen-Powered Heavy-Duty Vehicles at Warsaw Airport (EPAINOS Paper)

Ms Alessia Piccolo¹, Mr Andrea Altomonte¹

¹UNIVERSITA' PARTHENOPE , NAPOLI, Italia, ²ATENA, NAPOLI, Italia

S62 A Changing World: Balancing Economic Growth with Sustainable Energy Transitions, E12, August 29, 2025, 11:00 AM - 1:00 PM

This paper focuses on the analysis of the transition to hydrogen-powered heavy-duty vehicles at airports, specifically within the framework of the HORIZON-JYI CLEANH2 HySPARK project at Warsaw Chopin Airport. The initiative, funded by the European Clean Hydrogen Partnership and led by the ORLEN Group, aims to decarbonize airport operations by integrating hydrogen-powered vehicles, such as ground support equipment and transport trucks, along with a refuelling station. Hydrogen offers several advantages over traditional diesel vehicles, including zero emissions, improved air quality, and faster refuelling times. It reduces dependency on fossil fuels and can be more cost-effective in the long run, thanks to lower operating and maintenance costs. Hydrogen fuel cells are especially suited for high-demand airport operations, ensuring efficiency and reliability. The HySPARK project demonstrates how hydrogen technology can contribute to emission reductions, local economic growth, and job creation. Although the initial investment in hydrogen infrastructure is high, the long-term benefits, including reduced emissions and improved operational efficiency, make it a financially viable solution. This paper emphasizes how the project at Warsaw Chopin Airport serves as a model for other airports, supporting global sustainability goals and fostering economic resilience.

Corporate Sustainability Frameworks: Preferences of Public Real Estate Companies in the European Union

Ms Vasiliki - Alexandra Politi¹, Dr Antonis Rovolis¹

¹Panteion University, Department of Economic and Regional Development., Kallithea, Athens, Greece
G22-O1 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, B6, August 27, 2025, 11:00 AM - 1:00 PM

Sustainability requirements are increasingly influencing corporate strategies and decision-making across various industries, driven by investor preferences, regulatory pressures, and market demand. The real estate sector, due to its significant environmental and social impacts on regional development and its integral role in every company's value chain, is at the forefront of efforts toward a more sustainable future. In this context, corporate sustainability frameworks provide a structured methodology that enables companies to measure risks and track progress related to environmental, social, and governance (ESG) issues while, at the same time, several indexes support investors' decisions by providing relevant benchmarks and rankings.

However, there is no shortage of options when it comes to such frameworks. From global to regional, general to sector-specific, and combinations of either, companies have to navigate and choose – often more than one – options that fit their needs.

In light of the recently implemented mandatory European Sustainability Reporting Standards (ESRS), we aim to trace the evolution of major sustainability frameworks and examine the preferences of selected public European real estate companies prior to adopting the ESRS. During this process, we will identify the prevailing frameworks in use and explore the potential influence of factors such as company size, geography, and asset type. Furthermore, we will evaluate our sample's commitment—measured by consecutive years of reporting—and continuity—assessing whether the same framework(s) were maintained over the years. Finally, we will discuss whether the mandatory implementation of the ESRS is expected to act complementary to existing frameworks and facilitate companies with ESG reporting processes or simply add to their reporting requirements.

Innovation ecosystems in Catalonia: exploring location patterns of high-tech firms

Ms Keli Araujo-Rocha¹, Prof. Josep-Maria Arauzo-Carod¹

¹Universitat Rovira I Virgili, Reus, Spain

G03-O5 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 28, 2025, 4:30 PM - 6:30 PM

This paper investigates the determinants of high-technology and non-high-technology firm location choices in Catalonia, Spain, emphasizing the role of spatial spillovers and industry-specific dynamics. The analysis examines firm entries across high-tech manufacturing, knowledge-intensive services, and non-high-tech sectors by employing spatial econometric models and count data techniques in Catalan municipalities between 2010 and 2019. Results highlight the importance of population density, income levels, and proximity to urban hubs for high-tech sectors as main determinants of location decisions, while non-high-tech firms exhibit a preference for less urbanized regions. Spatial spillovers of income and labor market conditions significantly influence high-tech firm entries, underscoring the interconnected nature of regional economies. The findings reveal sector-specific location patterns and contribute to the literature on industrial location, offering practical recommendations for enhancing Catalonia's role as a hub for technological innovation and economic growth and providing actionable insights for policymakers.

A Culture Based Development Application - Finding the Cultural Roots for Female Empowerment and Regional Development

Ms Sameera Almalki¹

¹Swansea University, Swansea, United Kingdom

S05 Founding Principles of Culture Based Development (CBD). A Book-launch Roundtable, G2, August 29, 2025, 9:00 AM - 10:30 AM

Culture Based Development is a research paradigm for cultural bias in economic choice which allows to model the impact of culture on any type of economically relevant topic. In my case, my PhD is focused on the topic of female empowerment and regional development. Through application of the CBD paradigm, I have managed to demonstrate that female empowerment is dependent on culture and is beneficial for regional development. I have actually been able to make specific in-depth observations through the application of CBD. My results not only demonstrate that culture matters, but how and with aspects of it – cultural heritage or living culture. Thus, I have documented examples of exoticism in the Western perception of female empowerment in entrepreneurship and documented the positive cultural heritage impact on female empowerment in entrepreneurship in Saudi Arabia. My further research applications, employing the CBD paradigm, similarly demonstrate previously unknown cultural patterns in Saudi Arabia that lead to female empowerment in positive ways in other spheres, such as the public service sector and public education. Thus, I can comment on the way that the CBD lens has enabled me to reveal the true impact of my country's culture and its regional relevance.

Knowledge networks and makerspaces: proximities and local growth in the Central Europe

Prof Grzegorz Micek, [Dr. Lukas Danko](#)¹, Karolina Kapustka

¹Tomas Bata University In Zlín, Zlín, Czech Republic

S63 Regional Development and Cultural & Creative Industries, E12, August 28, 2025, 9:00 AM - 10:30 AM

The rationale behind this paper is reflected in the investigation of knowledge flow and the role of proximities through makerspaces. These physical spaces create links between firms, educational institutions and applied research, providing fertile ground for accelerating prototyping and DIY movement. The maker movement has risen from a fringe hobby to a prominent (DIY) lifestyle. The maker movement increases access to tools and training, potentially altering the capability of the general public to participate in product development (van Holm, 2017). Hence, these spaces are creating a positive impact on creating a cultural change by encouraging entrepreneurship in the community, support small business growth, and increase workforce retention (Li & Gao, 2021; Mersand, 2021; Gillespie et al., 2021).

Therefore, the paper focuses on the knowledge flows between stakeholders regarding the local growth. These spaces creative ecosystems of innovation generation with strong knowledge interactions. In the paper, the aim is to study spatial scales of knowledge flows in the selected Central European countries, where makerspaces have seen a more significant increase.

Furthermore, the paper aims to shed some light on dynamics of knowledge networks concerning of both direct and indirect effects of makerspaces on local milieu. The research design is based on empirical qualitative analysis of primary data gathered through semi-structured in-depth interviews with stakeholders in makerspaces. The interviews were designed to describe the role of these platforms that facilitate collaboration. The sample includes makerspaces from the Central Europe with knowledge flows concerning global pipelines and local buzz.

The novelty of our empirical research is reflected in identifying spatial scales to distinguies the role of proximity in knowledge transfer through makerspaces. Regarding challenges, the results provide an overview on what are the knowledge flows illustrated by the case studies. The paper presents policy implications to nurture different knowledge flows in and its role in local development. DIY movement provides the potential for cross-curricular connections, collaboration, creativity, innovation, and learning towards prototyping. Furthermore, the research reflect on the knowledge transmission among the central knowledge partners and their respective networks considering different proximities (Boschma, 2005; Balland et al. 2015) to geographical, social, cognitive, insitutional, organisational. Variety of local growth dimensions through makerspaces and main external stakeholders that shape the operations of these knowledge networks is presented in the conceptual framework. Therefore, the paper provides an overview on dimensions of collaborative spaces-driven local development towards competitiveness of creative ecosystems.

Spatial and Historical Patterns of the Formation of French Administrative Division

Dr. Alexey Vasilyev¹

¹Institute of Geography of Russian Academy of Sciences, Moscow, Russian Federation

G01-O8 Urban, Regional, Territorial and Local Resilience, B5, August 29, 2025, 9:00 AM - 10:30 AM

The presentation shows the spatial and historical patterns of the evolution of the administrative division of France. It was revealed that in France there is the established structure of the settlement system, urban areas of influence and administrative and economic relations. Many parts of this structure were formed by a spontaneous distribution of Gallic tribes and well-organized division of Roman Empire and then preserved during Middle Ages and Early Modern Era. This structure became a foundation of French modern administrative division. Despite the reforms there is the stability of many political-territorial units, a lot of departments, regions and their centers trace their history back to the Roman time and even the settlement of Gallic tribes.

Special attention is paid to the development of departments and regions in 1790-2025. Regions were formed in the 1950-1980s and 2015-2016 to support the economic development of the country and stimulate cooperation between the prefects of departments. Most of regions were based of preserved cores and blurred contours of historical and cultural areas. The territory of the most of departments remained stable during all 235 years of their existing. 78 departments that were created during the Great French revolution exist without changing to our time. The main factor of stability of departments is the stable system of organization of power and structure of administrative and economic links. Only 21 new departments were formed in 19th-20th centuries. Local factors such as secession of peripheries or centers, partition of existing departments, annexation or loss of territories influenced to creation of the new units.

Effectiveness of management strategy in the Japanese sewerage industry

Prof. Tomoyasu Tanaka¹

¹Kindai University, Higashi-osaka, Japan

G11-O2 Public Policy Assessment: Inclusiveness and Poverty Alleviation Across Space; Equality in Opportunities and Territorial Justice, A2, August 29, 2025, 2:00 PM - 4:00 PM

In Japan, sewerage services are owned and managed by municipal governments. At present, a lot of sewerage operators have serious problems. Firstly, sewerage operators are confronted with severe financial conditions. Water demand cannot increase due to population decline and widespread use of water-saving equipment. Therefore, revenue from sewage charge has been gradually decreasing. On the other hand, because sewer facilities are aging and natural disasters (e.g. earthquake, flood) frequently occur, operators need to maintain and repair facilities and take measures against disasters. Accordingly, capital cost has been gradually increasing. Secondly, sewerage operators are facing a labor shortage because of downsizing the number of employees in municipal governments. It is particularly difficult for some small operators to continue to provide sewerage services.

In order to solve these problems, in 2014, the Japanese government requested each operator to formulate a management strategy, which is a medium- to long-term operational and financial plan and to strengthen its management base through improved income and expenditure. As a result, each operator is required to prepare and publish management strategy and is expected to operate its sewerage services efficiently and sustainably in accordance with that strategy.

Under these circumstances, in this paper, we examine the effectiveness of management strategy. We estimate cost function using annual data on sewerage operators during FY 2010 – FY 2019. We investigate whether the preparation and publication of management strategy has contributed to cost savings and efficiency gains. The aim of this study is to assess the effectiveness of policies to create sustainable sewerage systems.

TPI MATHER Project relevance to Cultural Capital, Education and Wellbeing in Saudi Arabian Regions

Ms Sameera Almalki¹

¹Swansea University, Swansea, United Kingdom

S04 CBD and Forms of Capital for Local Well-being, G2, August 27, 2025, 11:00 AM - 1:00 PM

Following the example of the TPI MATHER Project and its Culture Based Development approach for tracing the impact from various forms of capital on regional development, I present my work that showcases an exploration of the cultural capital impact on female integration in the educational sector across the regions of Saudi Arabia and the wellbeing impact of this integration. The paper compiles a unique dataset, composed of (i) my own hand-picked plethora of cultural heritage and living culture indicators in Saudi Arabia, which I have gathered following the CBD methodology as well as (ii) the unique regional data obtained from the Government Regional Dataset, that I have been granted special access too. This unique compilation of data allows me to compare the levels of female integration across regions and sectors in Saudi Arabia and explain them through the local cultural capital, as per CBD and the MATHER methodology for policy makers. This is in a way a continuation of the MATHER Project methodology applications, with a direct application in a different geography. This demonstrates the transferability of the CBD approach for policy making across geographic locations.

Long Distance Commuting and Labor Market Adjustment in Extractive Host Economies

Mr Wladimir Cerda¹, Manuel Pérez

¹Universidad De Oviedo, Oviedo, Spain

G23-O2 Labor Markets, Unemployment, Gig Economy, Digital 'Nomads', Amphitheater II - SAKIS

KARAGIORGAS, August 28, 2025, 4:30 PM - 6:30 PM

The recent functional and spatial fragmentation of extractive industries presents significant challenges to local economies with a strong mining specialization. Increasing long distance commuter flows (LDC) and the rise of outsourcing as strategies for labor mobility and flexibility in Chile may affect the equilibrium of host labor markets. This paper quantifies the impact of LDCs, heavily concentrated in outsourced employment, on wage dynamics and labor demand in these markets.

First, we develop a general equilibrium model that accommodates the coexistence of contracted and outsourced employment, distinguishing between native and commuting workers using nested CES functions. The model is calibrated using annual aggregate wage and employment data from the Chilean regional labor markets between 2010 and 2022.

To address the potential endogeneity bias arising from the endogenous location of long distance commuters, we employ an instrumental variable that combines the historical productive specialization of regional markets with an exogenous commodity price shock, which has driven mining activity and increased the supply of commuters.

Our findings indicate that native and commuter workers are perfect substitutes in production, which implies that native wage dynamics depends solely on relative changes in the supply of outsourced labor. Consequently, we demonstrate that wage declines induced by increases in LDCs are concentrated in outsourced employment.

Second, based on algebraic derivations from the model, we obtain our own and cross-labor-demand elasticities, enabling us to quantify how relative labor demand shifts in favor of outsourcing within host economies.

Finally, we simulate a counterfactual scenario in which the mobility of long-distance commuters is restricted, mitigating both wage declines and the rise in outsourced labor demand in those regional labor markets with a strong productive specialization in extractive activities.

Changes in dynamic agglomeration effects over time

Annekatrien Niebuhr^{2,3}, Dr. Jan Cornelius Peters¹, Duncan Roth²

¹Thünen Institute, Braunschweig, Germany, ²Institute for Employment Research, Nuremberg, Germany, ³Kiel University, Kiel, Germany

S26 New Insights Into Agglomeration (Dis)Economies: Effects and Underlying Mechanisms, B6, August 28, 2025, 9:00 AM - 10:30 AM

Using administrative data on individual employment histories of workers in Germany covering almost the past 50 years, i.e. the period 1975-2023, this study investigates changes in dynamic agglomeration effects over time. First results suggest that the extent of dynamic agglomeration effects varies over the decades considered and that these changes are partly related to the jobs in which workers of different cohorts accumulate their work experience in differently dense locations.

Some structural changes are likely to have contributed to an increase in dynamic agglomeration advantages, such as the growing importance of knowledge-intensive services and jobs with non-routine tasks in high-density regions over time. Other changes, such as a relative decline in knowledge-intensive production and a declining share of very large establishments in high-density regions, may have counteracted an increase in dynamic agglomeration effects, however.

Computationally Efficient Estimation of Large Three-Dimensional Spatial Econometric Models with Fixed Effects

Prof. dr. Paul Elhorst, Dr. Petros Milionis, Dr. Ioanna Tziolas

¹University of Groningen, Groningen, The Netherlands

G16-O3 Statistical And Econometric Methods of Urban and Regional Analysis, F5, August 29, 2025,
9:00 AM - 10:30 AM

We develop computationally efficient methods to estimate large three-dimensional spatial panel data models with multiple fixed effects using quasi-maximum likelihood (QML). We consider the spatial autoregressive (SAR) model with four common fixed effects specifications, including the most extensive with origin-time, destination-time, and pair fixed effects. In addition, we consider three extensions of the SAR model, either with multiple spatial lags in the regressand, spatial lags in the regressors, or a spatial lag in the error term.

To avoid biased parameter estimates due to incidental parameter problems, the estimation approach is based on the orthogonal transformation to demean the regressand and the regressors for the fixed effects. Furthermore, in order to use computationally efficient algorithms already developed for such models at one point in time, a lemma is developed which expresses the log-likelihood function of the model based on the orthogonal transformation into its counterpart based on the standard within transformation.

The algorithms already available cover shortcuts that reduce the number of parameters to be estimated and simplify matrix operations, such as the computation of determinants, inverses, and traces in the case of large spatial weight matrices, as well as algorithms to speed up the computation of direct and indirect effects of the regressors.

We illustrate the computational feasibility of our proposed methods by estimating several variants of the gravity model of trade with spatial lags, using a data set on regional trade flows among EU NUTS-II regions from 2000 to 2010. In all cases, we find empirical evidence in favor of local spatial dependence between trade flows affecting the estimated direct and indirect effects of common trade policy variables.

Green Transition and Smart Specialization: Leveraging Attica's Technological Capabilities for Climate Change Adaptation

Prof. Phoebe Koundouri³, Dr. Konstantinos Dellis², Dr. Anna Triantafyllidou¹, Mrs Maria Chourdaki¹

¹SDU, Athena Research Center, Athens, Greece, ²RESEES, Athens University of Economics and Business, Athens, Greece, ³Athens University of Economics and Business, , Greece

G01-O6 Urban, Regional, Territorial and Local Resilience, B4, August 28, 2025, 4:30 PM - 6:30 PM

Adapting to climate change and building regional resilience is one of the greatest challenges facing modern societies. Fostering green innovation and benefiting from cutting-edge environmental technologies is pivotal in this aspect. Nonetheless, different regions face unique difficulties and vulnerabilities, therefore requiring adaptation measures and tools tailored to local needs. Regional innovation strategies are most efficient when they harness local competitive advantages and skills, as epitomized by the EU Smart Specialization Strategy (S3). This paper examines how regional technological competence and knowledge can diversify the innovation portfolio of the Attica region in Greece, focusing on technologies associated with climate adaptation. This will, in turn, provide a roadmap for moving towards new technological domains which are (i) within the region's reach based on embedded capacities and (ii) aligned with the region's priorities to build environmental and socioeconomic resilience.

The main objective of the research is to map the technological advantages of Attica in relation to the climate change adaptation priorities identified in Attica's regional plan (RCAP - PESPKA). By analyzing patent data at the regional level from the OECD REGPAT database, we calculate the Revealed Technological Advantage (RTA) for the Attica region. We leverage the IPC/CPC classification system to earmark patent classes associated with climate adaptation technologies and calculate the relatedness with the areas of Attica's technological specialization by analyzing co-occurrence patterns across technological fields. We then use the two sets of information to shape the knowledge space, in the form of a network, identifying the links and distances between current technological capabilities and technologies aligned with transformational adaptation. Finally, we prioritize technological diversification based on the combination of two criteria: (i) relation to Attica's adaptation priorities and (ii) technological relatedness to current technological specialization. Our results assist in shaping the innovation agenda to meet resilience targets and shape the policy agenda through a parsimonious approach aiming at technological advances concomitant with local capabilities.

Regional economic diversification relies on enhancing economic complexity using technological relatedness, and serves as a key driver of regional development. In order to bridge the innovation gap in the green transition, the paper suggests concrete policy approaches, such as targeted funding for green startups, strengthening regional and national innovation systems, and the promotion of public-private partnerships to accelerate innovation. By utilizing regional patent data and analyzing technological classifications, the study provides useful tools for the formulation of integrated regional development and sustainability strategies.

Cultural Planning and Local Revitalization: Examining Biella's Transition through a Cultural District Lens

Ms Mara Carando¹

¹Università Per Stranieri Di Perugia, Perugia , Italy

S37 Towards Local Development Through a Sustainable Valorization of Cultural Heritage, B4, August 29, 2025, 2:00 PM - 4:00 PM

Biella is a mid-sized city in northern Italy, historically rooted in a now-declining textile-industrial economy and located within a rural landscape of significant environmental value. In the last ten years, the municipal administration has pursued a renewed local development strategy centred on culture, articulated through participatory and inclusive planning processes. In light of the growing institutional and academic recognition of culture as a catalyst for sustainable development and given the conceptual robustness of the cultural district model as a framework for fostering territorial regeneration, this study investigates the Biella case through a theory-informed analytical lens. Employing a qualitative methodology that combines literature review, case study reconstruction, and critical policy analysis, the research aims to assess the alignment between Biella's cultural strategy and established models of culture-led development. The first section surveys key contributions to the theory of cultural districts and the evolving discourse on culture-led development. The second section provides an in-depth examination of Biella's trajectory, highlighting the strategic phases, institutional actors, and initiatives underpinning the city's transformation. The final section develops a critical evaluation of the case, identifying both points of convergence with, and deviations from, theoretical expectations. The study ultimately seeks to distil planning insights that may inform future initiatives in similar contexts, emphasizing flexibility, place-sensitivity, and participatory governance as core principles for sustainable cultural development.

Are Cities Resilient to Future Heatwaves and Cascading Disasters? A Spatio-Temporal Assessment of Climate Change's Urban Impacts

Mr Wensen Luo¹, Dr. Qian Shi¹, Dr. Chao Xiao¹

¹Tongji University, Shanghai, China

G08-O5 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, A1, August 29,
2025, 11:00 AM - 1:00 PM

As global warming accelerates, heatwaves are becoming increasingly frequent worldwide, placing immense pressure on infrastructure systems and triggering cascading disruptions. While buildings with the heating, ventilation and air conditioning (HVAC) systems help mitigate occupants' heat exposure, widespread power outages exacerbate the risks. Research has been conducted on building performance during power outages in heatwaves. However, limited attention has been given to the impacts of future, hotter weather conditions and the spatial variability introduced by urban heat island (UHI) effects.

This study examines urban-scale building performances during heatwave-induced power outages from a spatio-temporal perspective. Temporally, future weather conditions for 2050 and 2080 were derived by morphing typical meteorological year (TMY) files using the CMCC-CM2-SR5 model (CMIP6) under the Shared Socioeconomic Pathways (SSP) framework. Spatially, these future weather files were downscaled using the urban weather generator (UWG) model, incorporating UHI effects through urban morphology analysis. The downscaled weather data were then applied in EnergyPlus to simulate building performance across urban patches—small regions delineated by road networks.

Applying this spatio-temporal morphing approach to Phoenix, U.S., we found that annual average temperatures could rise by 10% in 2050 and 19% in 2080, significantly affecting building performance. The indoor overheating degree (IOD) was projected to increase by an average of 52% in 2050 and 102% in 2080. Moreover, substantial spatial variations were observed within the city, with a maximum IOD difference of 199% between urban patches. These findings highlighted that relying solely on historical TMY files could lead to a significant underestimation of climate change impacts, both temporally and spatially. Based on these insights, more effective and targeted urban heat adaptation and mitigation strategies are essential. These may include implementing building retrofitting and urban renewal programs, as well as developing emergency infrastructure to enhance resilience against extreme heat events.

Dreams Divided: Educational Aspirations and Left-behind Places in Italy

Mr Crhistian Joel Gonzalez Cuatianquis¹

¹Gran Sasso Science Institute, L'aquila, Italy

S18-S1 University Impacts on the Local and Regional Economy, A5, August 27, 2025, 4:30 PM - 6:30 PM

Aspirations, shaped by individual experiences and social interactions, are crucial in influencing educational outcomes and perpetuating socioeconomic inequalities. Despite extensive research on the link between socioeconomic conditions and aspirations, the Italian context remains underexplored. Italy's low share of tertiary-educated 25-34-year-olds (25% compared to the OECD average of 50% in 2021) and stark territorial disparities—particularly in left-behind areas—offer a unique opportunity to investigate these dynamics.

This study explores whether local socioeconomic conditions and trends influence the educational aspirations of young Italians, with a specific focus on disadvantaged and left-behind territories. Using a quantitative approach, the analysis combines individual-level data from INVALSI—10th Grade Mathematics and Italian exam results and accompanying student questionnaires—with complementary socioeconomic and demographic indicators from ISTAT, Eurostat, and the OECD. Statistical techniques such as multilevel modelling and regression analysis are employed to control for students' socioeconomic backgrounds and abilities while identifying their geographic locations. These methods enable examining how spatial and contextual factors shape aspirations, particularly in areas marked by economic stagnation and limited opportunities.

The findings highlight how local socioeconomic conditions in left-behind places act as barriers or enablers of educational aspirations, potentially reinforcing development traps and territorial inequalities. This research provides valuable insights for policymakers seeking to address Italy's territorial disparities, reduce educational gaps, and promote inclusive development strategies, especially in regions most at risk of being left further behind.

How the distribution of mining windfall mechanisms shapes the spatial economy of extractive countries?

Mr Mauricio Oyarzo¹, Mr Dusan Paredes², Mr Sebastián Cuellar²

¹Universidad de Concepción, Chillán, Chile, ²Universidad Católica del Norte, Antofagasta, Chile

G19-O3 Urban, Regional and Local Policy Evaluation, G3, August 28, 2025, 9:00 AM - 10:30 AM

The mining industry plays a crucial role in extractive economies by providing essential resources for economic development. However, mining activities often generate concerns about their environmental impacts and social implications for local communities. In order to ensure the long-term stability of mining, it is essential to strike a balance between supporting the sustainable development of mining activities and fostering a positive impact on the local quality of life. We assess the extent to which mining windfalls generate welfare gains by optimizing the current compensation mechanism scheme to distribute windfalls among municipalities through a quantitative spatial economic model that incorporates environmental consequences due to mining activity. By integrating environmental externalities and additional revenues into a calibrated spatial economic model, our results will provide a novel explanation for studying the poor performance of mining windfall compensation for negative externalities and potential welfare gains if an optimal design were implemented.

The TPI MATHER Project - A Circular Economy Perspective for Wales

Ms Yashi Jain¹

¹Swansea University, Swansea, United Kingdom

S04 CBD and Forms of Capital for Local Well-being, G2, August 27, 2025, 11:00 AM - 1:00 PM

Following the example of the TPI MATHER Project and its Culture Based Development approach for tracing the impact of various forms of capital on regional development, I present my exploration of how the ecological capital has been tapped across the Public Service Boards across Wales. In doing so, I am using the three main indicators offered by the MATHER Tool to policymakers, quantifying the quantity, impactfulness and ratio (between productivity impact and rate of exploitation) of the ecological capitals in Welsh PSBs. I take the analysis beyond the standard MATHER Project reports by comparing these three MATHER Tool indicators to well-being data. The relevance of my findings for the Welsh Government and my insights on the matter from my internship for the Welsh Government unit on the topic of ecology and circular economy topics further complete my contribution.

Market Potential and the Firm-Exit Productivity nexus

Dr. Sabine D'Costa¹, Dr Adelheid Holl

¹University of Westminster, London, United Kingdom

G01-O7 Urban, Regional, Territorial and Local Resilience, B5, August 28, 2025, 4:30 PM - 6:30 PM

In periods of economic turmoil, the rate of firm exit (death) is accelerated, with important social implications such as job loss and an uneven impact across space. Though the most productive firms are normally more likely to survive, there is mixed evidence whether this is true during periods of economic crisis. Moreover, although firms in dense urban environments tend to be more productive, we know little about the geographical dimension of the productivity-exit relationship. This project conducts econometric research at the firm and micro-geographic level to study what affects firm exit in Spain between 2011 and 2022. We analyse whether being located in an area with strong access to markets reinforces the positive productivity-survival relationship. We also assess whether high market access areas provided firms with better environments to remain productive and survive, or on the contrary if their very competitive environments might have accelerated the death of firms during the Covid-19 pandemic. Finally, we expect to establish what types of locations are more likely to experience stronger productivity growth through firm exit and reallocation of production during a crisis.

Our results so far show that firms that are closer to the productivity frontier are more likely to survive, while firms in locations with greater access to markets are less likely to survive. The protective effect of productivity is also diminished for firms that are in locations with greater market access, particularly in services industries. This does not change during the pandemic. However, the overall probability of firms exiting is higher during the Covid pandemic, though this varies by sector. In the Covid period, the protective effect of being near the productivity frontier is also diminished.

Estimating the impact of working from home on urban equilibrium: neighborhood scale effects using mobile data - (EPAINOS Paper)

Ms Inessa Tregubova¹

¹Hebrew University Of Jerusalem, Ramat Gan, Israel

YSS3, G3, August 28, 2025, 11:00 AM - 1:00 PM

The COVID-19 pandemic has fundamentally reshaped urban dynamics, primarily through the accelerated adoption of remote and hybrid work models. These shifts challenge long-standing urban equilibrium frameworks, such as the Alonso-Muth-Mills model, which has traditionally guided understanding of residential choices in urban economics. Previously, proximity to the central business district (CBD) served as a primary factor influencing residential desirability and housing prices. However, as remote work increases, proximity to the CBD has become less relevant, while other factors of the residential choice model like housing affordability and access to local amenities have gained high importance in the residential decision-making process.

Given that, the research primarily develops a theoretical model that explains the consequences of remote work on urban equilibrium, including the emergence of so-called ‘donut effect’. Overall, these modeled shifts explain why central areas may experience reduced residential demand, while suburban neighborhoods with attractive amenities see population growth.

The empirical testing of the model is done on the Tel Aviv metropolitan area in Israel, a region characterized by monocentric structure. The analysis mainly relies on a dataset of mobile GPS-signals collected between January 2019 and September 2023 which after removing noise represents approximately 5% of the area’s population.

The high spatial granularity and accuracy of these data allow for precise estimation of remote work patterns at the neighborhood level. Specifically, we identify individuals' home and work locations and measure their time spent at home during their individual working hours, applying Bayesian conditional probability.

To establish the existence of new urban equilibrium, we integrate neighborhood-level insights on remote work and new commuting frequency, and examine its impact on key component of urban equilibrium which is housing prices. To do this, we build spatial panel regression. This approach allows us to account for spatial dependencies and temporal variations, ensuring a robust analysis of the factors influencing urban equilibrium.

The findings of this research have direct policy implications. Municipalities are currently working to undertake appropriate actions to enrich the resilience of cities, and our empirical findings are likely to help prioritize these actions.

Cohesion or illusion? Losing funds and European sentiment

Dr Marco Di Cataldo¹, Mr Lorenzo Rossi¹

¹Ca' Foscari University Of Venice, Venice, Italy

S29-S2 Counterfactual Methods for Regional Policy Evaluation, E1, August 29, 2025, 2:00 PM - 4:00 PM

Does losing access to European funding lower European sentiment? After the 2004 enlargement, ten countries joined the European Union, reshaping the map of cohesion policy beneficiaries. As EU citizens saw funding shift towards the new member states, they may have perceived it as a loss, potentially leading to a decline in support for the EU. Using a Synthetic Difference-in-Differences methodology, we exploit changes in the European Regional Development Fund (ERDF) convergence objective across different programming periods, to study how losing the convergence objective status impact on European sentiment. The preliminary results suggest that losing funds implies a reduction in support towards the EU, especially considering the 2000-2006 Programming Period. Using the full sample and an event study estimation strategy, we show that European sentiment is decreasing after losing convergence status, and this decrease looks greater as time goes, but more investigation is required to ensure the robustness of these findings. The relevance of this paper would be to understand if the EU enlargement itself, through the reshaping of Cohesion Policy beneficiaries, may have been one of the factors behind rising Euroscepticism. To our knowledge, this paper is the first to investigate how losing EU funding impacts public sentiment toward the EU.

EU funds in places with corrupt local institutions

Prof. Marco Di Cataldo¹, Dr Elena Renzullo, Prof Andres Rodriguez-Pose

¹Ca' Foscari University of Venice, Venezia, Italy

G20-O4 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 29,
2025, 11:00 AM - 1:00 PM

This study presents the first analysis of how the quality of local institutions affects the distribution of EU resources to private beneficiaries, public entities, and local governments. We use high-quality Italian administrative data on instances of city council dismissals due to collusion between local politicians and organised crime to assess whether the local level of corruption affects the amount of EU funds managed by local authorities. We apply a staggered difference-in-differences model in combination with event studies to uncover the impact of local corruption on the distribution of EU funds. The results show that corrupt local governments that are colluding with criminal groups are allocated fewer resources for their own use in comparison with their non-corrupt (or less corrupt) counterparts, particularly for projects dedicated to local transports and other essential public services. Corrupt local governments appear to avoid pursuing larger EU projects, which are subject to stricter regulations by Italian laws designed to fight organised crime. This distortive behaviour seems to depress local economic development.

Evaluation of road safety policies and counterfactual approach

Prof. Laurent Carnis¹

¹Université Gustave Eiffel, Salon De Provence, France

S29-S1 Counterfactual Methods for Regional Policy Evaluation, E1, August 28, 2025, 4:30 PM - 6:30 PM

see the extended abstract

Assessing the Impact of Road Traffic on Air Pollution in Paris: An Econometric Analysis and Policy Scenarios

Mr Victor Chapuis¹

¹Gustave Eiffel University, Paris, France

G05-O1 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 27, 2025, 11:00 AM - 1:00 PM

This paper examines the relationship between road traffic and the concentration of air pollutants in Paris over the period 2018 to 2024, with a specific focus on nitrogen dioxide (NO₂) and particulate matter (PM₁₀). We leverage high-quality data including air pollution measurements from atmospheric monitoring stations, and incorporate hourly traffic data, including flow and occupancy rates.

Our econometric approach employs a panel data framework using the Generalized Method of Moments (GMM) to account for the dynamic nature of air pollution. Following Nishitateno et al. (2024), we build on their system GMM-based approach to develop our own methodology for identifying the causal impact of road traffic on air pollution.

A key aspect of our study is the impact of exogenous shocks on road traffic and their effects on pollution levels. We leverage exogenous shocks such as the Black Friday sales period and major strikes (e.g., December 2019–January 2020) to capture variations in traffic flows that allow us to isolate the causal impact of road traffic on pollution. This analysis provides insights into the broader consequences of consumer mobility patterns on urban air quality.

In the second stage of our research, we conduct policy scenario analyses focusing on modal shift strategies. We evaluate the potential environmental and social benefits of reducing freight vehicle dependency on internal combustion engines, focusing on light-duty vehicles (LDVs) and heavy-duty vehicles (HDVs). This assessment includes a comprehensive cost-benefit analysis incorporating factors such as noise pollution, congestion reduction, and air quality improvements. To quantify the health impacts of air pollution reductions, we assess the economic burden of pollution-related chronic diseases, particularly respiratory, cardiovascular, and metabolic disorders. We then estimate the potential economic gains from reducing these health burdens through urban transport policies aimed at mitigating pollution.

The findings emphasize the urgent need for targeted interventions to reduce traffic-induced pollution and improve public health outcomes in metropolitan areas.

The role of Demand Responsive Transport Systems in reducing transport-related social exclusion

Dr. József Pál Lieszkovszky¹

¹Corvinus University of Budapest, Budapest, Hungary

G10-O2 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,

August 27, 2025, 2:00 PM - 4:00 PM

The presentation will examine the role of Demand Responsive Transport Systems in reducing transport-related social exclusion.

Since the creation of Demand Responsive Transport (DRT), the idea behind these schemes has been to find more efficient ways to match public transport supply to actual demand in areas/neighborhoods where transport demand density has always been low. The starting point is that fixed-route public transport can be an effective alternative to private motorized modes in densely populated areas: the higher the population or population density of an area, the more concentrated the travel demand. However, in less densely populated areas, be they rural, or suburban, the economies of scale of this mode cannot be realized, so public transport services will only be viable with higher subsidies.

Transport-related exclusion can be defined as the lack of access to any means of transport to get to the place where the person is engaged in the social activities that are important to them and in which they would like to participate. In other words, from another perspective, the person cannot travel to and from places others can reach without difficulty. The first and most important factor determining the degree of need is access to a car, modified by other factors such as financial situation, possession of a driving license, car ownership, gender, age, physical condition, household type, access to work, language skills, and minority status. In addition, there is often an overlap between these factors. This social exclusion form is called transport poverty or transport-related social exclusion.

The research aims to develop a work based on the existing literature and field research to describe the impact of DRT systems on transport-related social exclusion. The study was carried out in Budapest, where 2-3 DRT lines were selected - they can be found in the inner outskirts of the city -, and interviews, questionnaires, and participant observation were conducted among the traveling public.

In addition to the above, it is essential to note that few researchers have yet addressed these issues in such a comparative way, as DRT systems have been approached mainly from the engineering sciences, while transport-related social exclusion has been contacted from the geography and social sciences. It is vital to address these issues together, as transport exclusion and poverty are affecting an increasing proportion of society today, and a solution is needed.

Rhetoric versus Reality? A Comparative Study of Public/Non-Public Employee's Perceptions of Discrimination

Prof. Lihi Lahat², Dr. Chen Sharony¹, Prof. Jessica Sowa³

¹Jerusalem Multidisciplinary College, , Israel, ²Sapir Academic College, Sderot, Israel, ³University of Delaware, , U.S.A.

G10-O1 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 27, 2025, 11:00 AM - 1:00 PM

How workers are treated in the workplace remains a critical concern, with governments often expected to set standards for equitable treatment. While equity in public administration has gained prominence in literature and practice, comparative research on discrimination between public and non-public sectors across countries remains limited. This study investigates perceptions of discrimination among public and non-public sector employees across European countries, addressing this research gap through three key questions: (1) Are there differences in how public and non-public sector employees perceive discrimination? (2) What factors influence perceptions of various types of discrimination? (3) How do these factors vary across different countries?

Using data from the 2018 European Social Survey (N = 49,519), we conducted multilevel logistic regressions to account for individuals nested within countries. Our findings reveal that while sectoral differences in discrimination perceptions were not significant, country-level factors, administrative culture, and socio-demographic variables played substantial roles. This study contributes to the limited body of comparative research on sectoral differences in discrimination perceptions and provides a cross-national perspective on how administrative cultures influence these perceptions. The findings have important implications for both the theoretical understanding of workplace discrimination across sectors and for Human Resource Management practitioners working to create more equitable workplaces.

An Economic Analysis of Heatwave Climate Resilience Technologies in South Korea

Mr Donguk Bae¹, Mr. Yunchchol Shin¹, Mr. Hwikwon Ahn¹, Prof. Donghwan Ahn¹, Prof. Kwansoo Kim¹, **Mr Soojeong Kang¹**

¹Seou National University, Kwankak-gu, South Korea

G08-O2 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, Amphitheater I -
SAKIS KARAGIORGAS, August 27, 2025, 2:00 PM - 4:00 PM

Climate resilience is essential to reduce heatwave damages, and to this end, the Korean government has been installing various heatwave response technologies such as rooftop and wall greening, cool roofs, cooling fogs, and pergolas. As heatwave adaptation technologies are a way to building climate resilience capacity to heatwave, it is important to evaluate the effectiveness of each technology by assessing its cost-effectiveness. However, there are relatively few studies that comprehensively evaluate the economic benefits and costs of each technology

Given this research gap, this paper estimates the degree of labor productivity losses due to heatwave using the panel dataset which contains weather variables such as daily temperature and relative humidity, wage, number of workers by industry, and the number of installations of heat mitigation technologies in each region. The economic benefits of heatwave response technologies are then measured by implementing a 2-step regression analysis: (i) the impact of heatwave response technologies on the Heatwave Resilience Index (HWRI) is estimated and (ii) the impact of HWRI on heatwave damages is estimated. In the estimation, we measure the sum of labor productivity losses and heat illness medical expenditures as the heatwave damages. Based on the estimated benefits and collected costs of the technologies, a BCR analysis is conducted to evaluate the economic benefits of heatwave response technologies.

The estimation results show that the loss of labor productivity in South Korea due to heatwave from 2016 to 2024 is about KRW 265.1 billion (USD 184 million), and it is 0.18% of total wage payments. In 2024, the BCR for cooling fogs technology is recovered to be 0.81, 1.68 for cool roofs technology, 2.63 for rooftop/wall greening technology, and 0.87 for pergolas technology, indicating that rooftop/wall greening technology reduced heatwave damages in the most effective way.

The contribution of this paper can be summarized as follows: (i) the originality of the panel dataset we constructed and (ii) a 2-step estimation strategy capable of incorporating both climate resilience index and adoption technologies when it comes to estimating the benefits of each technology in reducing damage costs related to heatwave. Our analysis is expected to provide a useful information to policy makers for cost-effective introduction of heatwave response technologies.

Is gender important for Corporate Social Responsibility? Exploring the case of B-Corps in the U.S.

Dr. Giulia Iannone¹

¹Gran Sasso Science Institute, L'Aquila, Italy

S27-S2 Gender Equality in Regions in Europe and Beyond, D12, August 29, 2025, 9:00 AM - 10:30 AM

This study investigates the influence of female participation in the workforce on the establishment and performance of socially responsible enterprises known as Benefit Corporations (B-Corps). In addition to gender diversity, the research examines several other critical factors shaping the spatial distribution of B-Corps, such as local political environments, socioeconomic contexts, and regional industrial composition. While previous research has predominantly focused on firm-level drivers that encourage the adoption of Corporate Social Responsibility (CSR) practices, there remains a significant gap in understanding how local and regional conditions impact both the presence and the operational effectiveness of B-Corps. To address this gap, the current study explores the determinants that affect where B-Corps are established and examines the local factors that drive their social and environmental performance outcomes. The analysis draws on an extensive dataset that aggregates B-Corp information alongside county-level characteristics from 2013 to 2022. The findings reveal that counties with a more liberal political orientation, higher levels of educational attainment, and greater income inequality are statistically more likely to host B-Corps. Moreover, enhanced workforce diversity – as measured by the proportion of women in the labor force and the presence of foreign-born residents – is positively associated with improved performance in employee welfare and environmental stewardship. These results underscore the pivotal role that socioeconomic and political contexts play in shaping environments conducive to CSR-oriented business practices, highlighting the potential for inclusive workforce policies to foster broader social and environmental benefits.

Literally ‘left behind’? Perceived accessibility and perceptions of institutional bias in rural areas

Dr. Felix Pot¹, Prof. Sierdjan Koster¹

¹University of Groningen, Groningen, The Netherlands

S32 Subjective Well-Being and Geographies of Discontent in Rural Europe: Quantitative Insights from Survey and Spatial Data, Amph 2, August 27, 2025, 4:30 PM - 6:30 PM

Peripheral rural regions in Europe face the decline of access to essential services and employment, exacerbated by urbanization and centralization trends. This trend is often linked to a sense of institutional neglect, reinforcing perceptions of being ‘left behind’. At the same time, larger distances to opportunities do not always lead to less satisfaction with access. This prompts the question of whether the relationship between accessibility and perceptions of institutional bias in rural areas is primarily driven by the actual challenges in accessing desired opportunities.

This study investigates the extent to which satisfaction with access to opportunities moderates the link between accessibility and perceptions of institutional bias in rural areas. Using a self-administered survey conducted in the Netherlands (2020, N=3,378), it examines how both spatial indicators of accessibility and perceived accessibility relate to feelings of neglect.

Findings indicate that perceptions of being left behind are more strongly correlated with the actual availability of opportunities than with subjective assessments of accessibility. While functional accessibility plays a role, most rural residents are satisfied with accessibility. Rather, symbolic and emotional responses to facility closures contribute to regional discontent. However, when access is perceived as insufficient, it does also become a driver of institutional distrust.

How Many Significant LISA?

Giuseppe Arbia¹, Mr Vincenzo Nardelli¹, Niccolò Salvini¹

¹Università Cattolica Del Sacro Cuore, Roma Rm, Italy

G16-O4 Statistical And Econometric Methods of Urban and Regional Analysis, F5, August 29, 2025,
2:00 PM - 4:00 PM

In spatial data analysis, global measures such as Moran's I, Geary's C, and APLE coefficients provide insights into general spatial patterns but fail to capture local variations. Local Indicators of Spatial Association (LISA) address this limitation by identifying clusters and spatial outliers, offering valuable applications in public health, urban planning, and environmental monitoring, to name a few. However, multiple hypothesis testing in LISA dramatically increases the risk of Type I errors, especially in large datasets. Standard corrections, like Bonferroni and Benjamini-Hochberg, are based on the assumption of independence of observations and prove overly conservative in spatial contexts due to spatial autocorrelation. This paper proposes an adjustment that incorporates the notion of effective sample size, thus improving statistical inference while balancing false discovery control and statistical power in LISA-based analyses.

Regional Dynamics in Agricultural Farm Survival: A Longitudinal Study of France and Pays de la Loire

Dr. Nejla Ben Arfa¹, Dr Giffona JUSTINIA HANITRAVELO¹

¹Esa Angers, Angers, France

G01-O6 Urban, Regional, Territorial and Local Resilience, B4, August 28, 2025, 4:30 PM - 6:30 PM

In 2020, metropolitan France had only 389,800 remaining agricultural farms, approximately 270,000 fewer than in 2000. This decline has disproportionately affected farms specializing in dairy and/or beef production compared to those focused on plant production. This study investigates the factors influencing the cessation of agricultural farms in metropolitan France, with a particular emphasis on the Pays de la Loire region—an area known for its agricultural diversity but also facing unique challenges. Understanding the determinants of farm survival requires a robust analytical framework based on original, high-quality longitudinal data.

To achieve this, we utilize unique datasets obtained through secure access to individual farm records from the French agricultural censuses of 2000, 2010, and 2020, complemented by data from the agricultural social security system (MSA). The integration of these data sources enables precise tracking of both farm cessations and farmer mobility over time. Unlike traditional cross-sectional analyses, this longitudinal approach provides a more accurate assessment of the factors influencing farm survival and structural changes in the agricultural sector. By leveraging this innovative, data-driven methodology, we aim to identify key economic, structural, and policy-related factors contributing to farm resilience, offering valuable insights for researchers and policymakers.

For this analysis, we employ the Cox regression model, which is particularly well-suited for examining time-to-event data while accounting for covariates that may influence the risk of farm cessation. The model's semi-parametric nature allows for the estimation of hazard ratios, quantifying the relative risk associated with specific variables. Factors such as farm size, legal status, and modernization efforts are assessed for their impact on survival probabilities.

Farms in the Pays de la Loire region face a significantly higher risk of cessation compared to those in other regions. This elevated risk may result from region-specific challenges, including market saturation, environmental constraints, and policy frameworks that may disadvantage certain types of farming operations. Within the region, farm survival rates vary by department, with farms in Maine-et-Loire exhibiting a slightly lower risk, while those in Mayenne, Sarthe, and Vendée show minor variations in risk.

These findings highlight the need for region-specific interventions to enhance farm sustainability. Policymakers should consider implementing financial aid programs for at-risk farms, establishing regional advisory services focused on resilience strategies, and promoting market diversification initiatives to reduce dependency on volatile agricultural sectors.

Entrepreneurial ecosystem in rural Galicia. Dynamics and opportunities.

Dr. Marta Somoza Medina¹

¹Universidad San Jorge, Ourense, Spain

G03-O4 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 28, 2025, 9:00 AM - 10:30 AM

Industrial development is influenced, in general terms, by cycles of expansion and contraction of the economy that lead to the increase or decrease of the demand and manufacturing of certain products and the hiring or firing of workers. It is also affected by the emerge of technological advances as the automation of the montage chain or the use of artificial intelligent; together with the availability of financial credits and global market dynamics like outsourcing, offshoring or other services remotely provided.

In spite of all those external fluctuations that generate constrictions to the manufacture activity, it is noted that local enterprises dotted in medium populated areas present a tendency to maintain its activity in crisis times due to its ability to adapt to adverse circumstances. The reasons for this situation are attached to its particular conditions like manufactured goods related to basic necessities, family business structure, low amount of investment, and certain independence from massive demand of metropolitan areas.

This is the approach that describes the situation of small firms in rural Galician territory, in the west periphery of Europe, where extensive areas present population scattered on small villages, with densities around 300 to 30 inhabitants per km². This is a region that during the first half of the twentieth century, has experimented a scarcely industrial development, mainly focused on fish-canning manufacturing (Carmona, 1985) and build construction, on account of a national strategy directed to the increase of the agricultural production of forage pastures, milk and veal (Lois, 2018). After decades of depopulation of inner rural areas, the beginning of the present century shows recovering economical dynamics that have been carried out by sectors where traditional crafts have been blended with new techniques allowing small companies to surpass difficulties.

Data for 2023 reveal that industrial production in Galicia stands out of manufacture food, wood, furniture and paper and textil. The distribution of this industrial activity, according to the Galician Statistic Institut, is bigger in low and medium populated, accumulating almost the 79% of the employees (Source GSI, 2023). It is also significant that although the amount of locals has slightly increased, although industrial estates have attracted few of the new establishments.

Therefore, the ongoing research point out that the dynamics of industrial activities in rural peripheral areas follow particular patterns based on the continuity of inherited familiar business structures that are able to manage opportunity factors to face economic downturns.

At the roots of the geography of political and life discontent

Professor Camilla Lenzi¹, Mr Giovanni Perucca¹

¹Politecnico di Milano - DABC, Milano, Italy

S77 The Geography of Political and Life Discontent, G3, August 27, 2025, 11:00 AM - 1:00 PM

The recent upsurge of populist movements, typically associated with nationalist and authoritarian views, has been the object of a rich stream of literature, aimed at understanding the determinants of this phenomenon.

In their influential study, Dijkstra et al. (2020) associated the geography of (political) discontent to the individual dissatisfaction with one's own life and, more specifically, with the opportunities provided in the community of residence. In this perspective, populist support is interpreted as the revenge of places (and people) that don't matter.

Despite the rich evidence on the overlapping of political and life dissatisfaction, this is not the rule. Some studies, for instance, suggested a more complex interplay between the perception of one's own life and the personal political behavior (Lenzi and Perucca, 2021). Recent empirical evidence showed that individuals and communities satisfied with their life may support populist parties, so as dissatisfied people may oppose populism (Lenzi and Perucca, 2023).

A clear identification of the joint geography of political and life dissatisfaction is still missing. Even more importantly, the understanding of the common (and different) determinants of these two sentiments is far from being achieved.

The present paper aims at providing an overview of the geography of political and life discontent in European regions over the last two decades. Moreover, it identifies the economic, social, institutional and cultural factors under which political and life dissatisfaction do not simultaneously occur, leading to deviations from the mainstream interpretation of populist voting.

References:

Dijkstra, L., Poelman, H., & Rodríguez-Pose, A. (2020). The geography of EU discontent. *Regional Studies*, 54(6), 737-753.

Lenzi, C., & Perucca, G. (2021). People or places that don't matter? Individual and contextual determinants of the geography of discontent. *Economic Geography*, 97(5), 415-445.

Lenzi, C., & Perucca, G. (2023). The geography of life and political discontent in UK regions. Paper presented at the 64th SIE Conference.

Exploring the Contributions of Radical Ecology and Heterodox Economics in Building an Alternative Political Economy of Sustainability

Dr. Arturo Hermann¹, Mr Edoardo Pizzoli²

¹Italian National Institute Of Statistics (istat), Rm - Roma, Italy, ²University of Luxembourg, ,

S65 Accounting Sustainability in the Mediterranean Region, A5, August 29, 2025, 9:00 AM - 10:30 AM

As we know, also by looking at the slow progress of the UN Agenda 2030 for sustainable development, attaining the objectives of “strong sustainability” is a process anything but easy. Also for this reason, there is among radical ecologists and heterodox economists an ample consensus on the shortcomings of the neoclassical economics’ uncritical appraisal of the “optimality” of market mechanisms and the related notion of homo oeconomicus. However, there is little agreement on what alternative economic theories/policies are better suited for realising an equitable and sustainable economy.

In our work we aim to cast some light on these tangled aspects by focusing attention on some central issue of the complex transition towards an equitable and sustainable economy. For instance, what should be the role of public and private action? Should private markets exist and in what terms? And what should be the role of public sector and policy action in promoting these goals? How democracy and participation — for instance through a process of democratic planning — can be fostered in policy action, and at the same time contribute to realise these objectives?

In the analysis of these issues, a better collaboration between radical ecology and heterodox economics can help clarify important aspects. In this light, we will address, in particular, the contributions of deep ecology, ecosocialism, bioeconomy, degrowth and steady state theories, on the side of radical ecology; and the insights of Evolutionary and Institutional Economics and post Keynesian and Modern Monetary Theories, on the side of heterodox economics.

In this way we try to highlight a number of largely unexplored synergies between radical ecology and heterodox economics - both between themselves and within their various strands - that can help clarify important aspects of these complex issues, with particular attention to their contributions to devise an alternative political economy of sustainability.

Renewable energy on rural landscapes. An overview in south germany

Dr. Marta Somoza Medina¹

¹Universidad San Jorge, Ourense, Spain

S49 Towards more Resilient and Inclusive Urban Energy Futures, D1, August 27, 2025, 11:00 AM - 1:00 PM

The aim of the research is to analyse the complexity that rural territories should achieve in order to provide food, energy, entertainment and quality of life. The concentration of population in cities, the almost exhaustion of natural resources and the imminent change in climatic conditions make it necessary to redefine the way of life on a territorial scale. In the European context, where communities strengthen competitive models to maintain and improve the quality of life of their citizens, southern Germany reinforce the enhancement of its most valuable assets: the diversity of landscapes, the wealth of resources and the goodness of weather conditions, taking into account the preservation of natural and productive areas and the structure of settlements originated in traditional rural economies. The research focuses on the production of renewable energy from wind, sun, water and biomass, mainly in the Bavarian region.

Stakeholder Perspectives on Implementing a Just Transition in Romania's Coal-Intensive Areas

Dr. Alina Popescu¹, Dr. Irina E. Ion¹, Dr. Cătălin Nechifor¹, Dr. Daniela-Luminița Constantin¹

¹Bucharest University of Economic Studies, Bucharest, Romania

S38-S3 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 27, 2025, 4:30 PM - 6:30 PM

This study examines the implementation of just transition policies in Romania's coal-intensive regions through a stakeholder lens. Grounded in theories of climate, energy, and environmental justice, the concept of just transition is framed around three core principles—distributive, procedural, and restorative justice—to address the socioeconomic impacts of decarbonisation. Originally promoted by trade unions and later integrated into international climate policies, these principles have guided the development of public policies aimed at protecting workers and communities amid the shift to a low-carbon economy.

A qualitative research methodology was used, with primary data collected from interviews and a focus group conducted between June and November 2024. Ten experts representing local and central authorities, civil society and employer organizations from the Jiu Valley region of Hunedoara county participated in this study. The research, guided by an interview framework from the ESSPIN project, sought to capture diverse perspectives on the operational challenges and opportunities of the Just Transition Programme (JTP).

The findings indicate that while the strategic vision of a just transition is well articulated in policy documents—supported by frameworks such as the European Green Deal and the Just Transition Mechanism - its practical implementation is fragmented. Multilevel governance issues, bureaucratic inefficiencies, and a lack of local administrative capacity impede the effective transposition of EU and national measures to the local level. The study highlights a marked divergence in stakeholder views: business representatives acknowledge potential economic benefits but point to financing barriers and stringent co-financing requirements, while trade unions and miners' representatives express deep concerns about job security, inadequate social protections, and insufficient training opportunities.

Furthermore, the research underscores the critical role of transparent communication and meaningful public consultation. The perceived opacity of decision-making processes and ineffective monitoring mechanisms have fuelled scepticism among local communities, thus undermining trust in the transition process.

In conclusion, the study reveals a significant gap between the ambitious goals of just transition policies and their implementation on the ground. Addressing these challenges requires greater flexibility in policy implementation, streamlined access to financial resources, and enhanced stakeholder engagement at all governance levels. Without these adjustments, the just transition risks remaining a largely technocratic process, potentially exacerbating social inequalities and eroding public trust in institutions managing the energy transition.

Paths of Integration: Internal Migration as a Mediator Between Immigration and Extremism

Dr. Roberto Dellisanti¹, Mr Giovanni Perucca¹

¹Politecnico di Milano - DABC, Milano, Italy

S14 Migrant Integration Challenges and Policies, F1, August 28, 2025, 4:30 PM - 6:30 PM

In recent years, the growing support for far-right parties worldwide has highlighted how individuals increasingly respond to globalisation, migration flows, and technological insecurity with nationalist and exclusionary voting preferences. While voting behaviour is inherently individual, it is deeply influenced by context-specific conditions.

This paper explores the relationship between migration flows and voting patterns. Specifically, it investigates the role of historical internal migration in shaping contemporary voting behaviour, using Italy as a case study. Italy's significant internal migration from the South to the North during the Economic Boom provides a unique historical context for examining whether communities shaped by past integration experiences exhibit lower support for far-right, anti-immigration rhetoric.

This research tests whether interpersonal contact under favourable conditions can reduce prejudice and foster intergroup cooperation. It hypothesises that communities with a history of internal migration have developed greater openness and adaptability, triggering a lower support for exclusionary political ideologies.

By combining historical and contemporary data, this study aims to deepen our understanding of how past migration experiences influence current societal attitudes. It sheds light on the conditions that mitigate the appeal of extremist political ideologies, offering insights into fostering inclusivity in diverse communities.

What Drives or Hinders Digital Agriculture? Regional Insights from Livestock and Vegetable Farms in Western France

Dr. Mohamed Ghali¹, Dr. Neila Ben Arfa¹, Dr. Giffona Justinia Hanitravelo¹, Dr. Soazig Di Bianco¹, Dr. Abdul Rahman Saili²

¹LARESS, Economic and sociology research unit, ESA Angers, Angers, France, ²Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA (UiTM), , Sarawak, Malaysia, Malaysia

G12-O2 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 27, 2025, 2:00 PM - 4:00 PM

Digital technologies are increasingly recognized as essential for enhancing productivity, sustainability, and competitiveness in agriculture. However, their adoption remains limited and uneven across regions, with the reasons behind adoption or non-adoption still not fully understood, particularly in certain production systems.

This study focuses on cattle breeding, pig farming, and vegetable farming systems, which have received relatively little attention, with a specific emphasis on the Grand-Ouest of France (Brittany, Pays de la Loire, and Normandy). This region, a major hub for livestock and vegetable production, presents a unique context where both large-scale and small family-run farms coexist, leading to varied adoption patterns of digital technologies. The objective is to analyze the factors influencing the adoption of digital technologies, distinguishing between farmers' motivations and the structural determinants shaping their decisions, while considering regional specificities. A mixed-methods approach was employed, combining a multinomial regression model applied to data from the 2020 French agricultural census with qualitative analysis from 49 semi-structured interviews conducted in the Grand-Ouest.

The results highlight three main motivations: improving productivity and management, reducing labor intensity, and enhancing environmental sustainability. These motivations are influenced by structural and demographic factors, such as farm size, legal status, and the farmer's educational level. Larger farms, particularly in the Grand-Ouest, are better equipped to adopt digital tools, often facilitated by strong cooperative networks and access to training programs.

However, significant barriers persist. High costs, limited internet access in rural areas, and tool complexity hinder adoption, especially for smaller farms and those engaged in short supply chains or organic farming—common in the Grand-Ouest. This regional disparity underscores the need for targeted public policies to reduce financial barriers, improve digital infrastructure, and strengthen local training and cooperative networks.

By highlighting these regional dynamics, this study contributes to a more nuanced understanding of digital technology adoption in agriculture and provides actionable insights for policymakers and stakeholders seeking to promote sustainable and inclusive agricultural innovation in France.

How can low-income countries integrate into the innovation-led global economy?

Prof. Raphael Bar-El¹, Dr. Liran Maymoni¹

¹Ben Gurion University, Rehovot, Israel

G03-O5 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 28, 2025, 4:30 PM - 6:30 PM

Low-income countries face a persistent challenge: innovation activities tend to concentrate in more developed regions. Existing research offers limited solutions, often emphasizing local advantages or frugal innovation to mitigate widening regional gaps. This study challenges the conventional approach of competing with developed nations for innovative activities and instead explores an "integrative" strategy that recognizes innovation as a multifaceted process encompassing diverse activities.

We build on Capello and Lenzi (2013), who adopted Schumpeter's distinction between innovation and commercialization, and Bar-El (2023), who identified distinct drivers of knowledge creation and practical implementation. We analyze the dependence of these two innovation types in high-income and low-income countries using regression analysis based on the 2024 Global Innovation Index (GII). Additionally, K-means clustering identifies three primary groups within both income categories.

Our findings first highlight a malfunctioning ecosystem for knowledge creation in low-income countries: policies supporting knowledge creation are relatively inefficient compared to those fostering knowledge implementation. Second, knowledge creation in these countries is predominantly driven by global corporations, resulting in a dual-economy model with limited local economic impact. Third, in low-income as well as in high-income countries, knowledge implementation does not necessarily rely on domestic knowledge creation; instead, these two innovation types function independently. In low-income countries, knowledge implementation is primarily influenced by the availability of skilled labor, high-quality logistics, and the effective adaptation of imported knowledge.

Based on key influencing factors, we classify low-income countries into three clusters: (1) those with significant knowledge implementation and some degree of knowledge creation, (2) those with knowledge creation (mainly by corporations) and less knowledge implementation, and (3) those with minimal activity in both innovation types—comprising the majority of low-income nations.

This analysis yields critical policy implications. Innovation policies in low-income countries should prioritize knowledge implementation by facilitating technology adoption, improving logistics, and enhancing workforce skills. Depending on economic and social structures, this approach can strengthen technological advancements in traditional industries, agriculture, and small to medium enterprises. While knowledge creation should not be neglected, it should align with national economic objectives rather than serve as a standalone goal.

Understanding the Heterogeneous Effects of Built Environment Changes on Travel Behaviours: Insights from Residential Relocations - (EPAINOS Paper)

Dr. Conor O'Driscoll¹

¹University Of Groningen, Groningen, The Netherlands

YSS2, G2, August 28, 2025, 11:00 AM - 1:00 PM

Classical theories in urban economics and regional science posit that individuals achieve a spatial equilibrium by balancing commuting costs with land rents, resulting in stable residential and travel behaviours. However, this equilibrium is frequently disrupted by life-course events, offering valuable opportunities to study behavioural adaptation. This paper investigates how residential relocations causally affect commute mode switching, shedding light on the relative influence of local spatial structures versus internal life dynamics. I use individual-level panel data, incorporating detailed information on relocations, commuting, and highly granular neighbourhood characteristics. A pre-treatment event study regression design is used to isolate the causal effect of moving on commute mode choice. Results show a marked increase in the probability of switching commute mode in the year of relocation. Heterogeneity analyses further reveal that responses vary by motivation for moving and spatial context, suggesting differentiated behavioural flexibility across groups and space. Overall, the findings demonstrate that commuting behaviours are not entirely sticky and that relocation presents a critical window for behavioural change, offering new insights for transport policy, spatial planning, and theories of travel behaviour adaptation.

Regional development (policy) and the revival of industrial policy

Dr. Alexander Lembcke¹

¹OECD, , France

S57-S1 Cohesion Policy and Industrial Policy: Competition or Complementarity?, Amph 2, August 28,
2025, 4:30 PM - 6:30 PM

How will the revival of industrial policy affect regional development and interact with regional development policies? This presentation will draw on recent OECD work on barriers to firm growth, promotion of high-growth enterprises, innovation (and innovation diffusion) and growth in general to reflect on how industrial policy can be harnessed for regional development.

Financial fragility and unemployment in the Italian regions

Dr. Francesco Frangiamore¹

¹University Of Palermo, Palermo, Italy

G23-O2 Labor Markets, Unemployment, Gig Economy, Digital 'Nomads', Amphitheater II - SAKIS
KARAGIORGAS, August 28, 2025, 4:30 PM - 6:30 PM

This paper studies the dynamic effects of financial fragility shocks on unemployment at the regional level for Italy, and analyses the correlation between some regional characteristics and the regional responses to such shocks. I construct a new quarterly dataset for the 20 Italian regions, ranging from 1997-Q1 to 2023-Q3, including the bad loans rates, unemployment rates and bank interest rates. The results show that sudden increases in financial fragility have important negative dynamic effects on regional employment, and the least developed regions are the hardest hit. Moreover, the regional heterogeneous effects on unemployment are positively associated with regional credit risk, unemployment rate levels and the regional share of temporary workers, and negatively correlated with regional economic and financial development levels, regional competitiveness, labour market efficiency and education levels.

A capabilities approach to social entrepreneurial ecosystems

Dr. Irene Daskalopoulou¹, Dr. Athanasia Karakitsiou²

¹University Of The Peloponnese, Tripoli, Greece, ²International Hellenic University, Serres, Greece
S74 Entrepreneurship, Innovation and Sustainable Development, Amph 3, August 29, 2025, 11:00 AM -
1:00 PM

We propose a novel approach to social entrepreneurial ecosystems as resulting from individuals' global values and aggregate contextual functionings. Our conceptual model combines Sen's capabilities theory and the entrepreneurial ecosystem strand of research in order to discern between market-oriented and social entrepreneurial outcomes. We suggest that entrepreneurial outcomes derive from within entrepreneurial ecosystems and reflect the social values that individuals embrace, i.e. self-transcend and open to change values in the case of social entrepreneurial outcomes versus self-enhance and conservation values in the case of market oriented outcomes. Values and outcomes are subject to context-specific conversion factors, that is, ecosystem specific economic, resource-bases and institutional capabilities. As such, social entrepreneurship is a functioning of an entrepreneurial ecosystem characterized by a high propensity to create social wealth and solve social problems. We test the proposed model using European Social Survey data for Germany.

Peculiar drifts of urbanization in Albania: investigating the population and land-use change nexus along the Tirana-Durres axis

Dr. Ifigeneia Kokkali¹, Dr. Apostolos Lagarias¹

¹University of Thessaly, Volos, Greece

S54 Reactivating the Debate on Contemporary Albanian Migrations: an Updated State-of-the-art,
Amph 3, August 28, 2025, 9:00 AM - 10:30 AM

Internal migration movements in Albania during the last thirty years have been a major factor of extensive urbanization, while bringing in a drastic reduction or even full-scale depopulation in many Albanian regions. Existing research highlights the important role of dominant socio-political regimes in shaping the spatio-temporal processes, formulating the ground of what can be perceived as a rather unique and “peculiar” case, outstandingly different from both west-European and east-European urbanization models.

The proposed paper seeks to contribute to research dealing with post-1990 urbanization in Albania, aspiring to assess the role of complex migration flows (out-migration, in-migration, return migration) in the transformation of the urban hierarchy. The nexus population-change/land-use is on focus, in particular with regard to urbanization and sub-urbanization of greater Tirana, as well as the axis Tirana-Durres. We investigate the urban development of Albania post-1990, with particular focus on the post-2006 period, in an attempt to comprehend the extent and locational characteristics of urbanization, while assessing its impact into space.

Methodologically, we rely upon a) the study of census data on demographic/ population change in Albania in the last thirty years (2001, 2011, 2021), at region, district and -where available- village/commune level, b) extensive land use analysis, as derived by high-resolution satellite-driven data and their processing using geospatial methods.

Results cast light into the complexity of the process, helping us identify the distinct character of the recent urbanization wave, and also extract a set of generalizable conclusions regarding urbanization processes in the Balkan region in the context of advanced globalization and neoliberal capitalism.

A Systematic Review of Wellbeing Measurements: Do We Account for Human and Environmental Relations When Defining Wellbeing?

Mr Raffaele Ventura¹, Ms Mira Manini Tiwari¹

¹European University Institute, Florence, Italy

S82 Well-Being Patterns and Disparities Across European Countries and Regions, F5, August 28, 2025,
4:30 PM - 6:30 PM

With this paper, we propose a systematic review that investigates and synthesises the literature on wellbeing measurements, identifying the normative biases that shape global standards and influence policy design, with a focus on the environmental dimension of wellbeing. Despite the increasing proliferation of composite wellbeing measures, significant gaps remain, particularly in environmental, gender, and community dimensions. Many existing indices are shaped by political and economic assumptions, with their construction largely dominated by Western Europe and North America. As a result, these indices often reflect societal models that prioritize economic growth and material prosperity, sometimes at the expense of sustainability and social equity. A critical consequence of these biases is the marginalization of environmental considerations in wellbeing assessments. The failure to integrate the human-environment relationship into wellbeing frameworks can distort cost-benefit analyses, potentially discouraging policies that support sustainable development. When wellbeing is measured through indicators that overlook environmental and social dimensions, decision-makers may be less inclined to adopt policies that balance economic growth with long-term sustainability. The systematic review is conducted through an interdisciplinary assessment of the literature. We undertake a systematic review of the literature, critically analyzing the conceptualization and measurement of wellbeing. Such systematic analysis allows us to identify the key shortcomings in the methodological approaches used to construct composite indicators and the theoretical debates underpinning them. In particular, it explores the extent to which environmental dimensions are incorporated or excluded in the dominant conceptualizations and methodologies of wellbeing measurements. Furthermore, complementary to the systematic review, we develop a dataset that maps existing indices. Combining the dataset, its analysis and the results from the systematic review, we expose the conceptual limitations of measurements of wellbeing and argue for more localized, participatory, and qualitative approaches to wellbeing measurement.

Space-Time Conflicts and Complementarities in Sustainable Urban and Regional Tourism Development: A Stakeholder Approach

Prof. Jaewon Lim¹, Dr. Karima Kourtiti, Prof. Peter Nijkamp

¹University of Nevada Las Vegas, Las Vegas, United States

G15-O3 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness,
Quality of Life, B6, August 29, 2025, 9:00 AM - 10:30 AM

Many popular tourism destinations across the world suffer from over-tourism. An overdose of tourism activities may degrade the quality of the destinations' tourism resources, negatively impact the quality of life or historic ambiance, or even cause severe tension between tourists and residents. One of the currently popular tourism demand control measures is de-marketing. In practice, it is often implemented through "re-oriented" and "de-concentrated" de-tourification. Spatial complementarity of tourist services across broadly defined regions that offer a wide variety of attractive tourism products is a key to "de-concentrated" de-tourification. In principle, urban mass tourism destinations may then partner with their neighboring rural (less crowded) communities to re-orient and better control the excessive demand. The adjacent rural areas, offering inter alia green- and eco-tourism, also benefit from the changing demand from nearby urban destinations.

However, two major challenges for such collaboration among neighboring partners should be addressed. First, tourism is a multi-stakeholder industry and conflicts of interest among the stakeholders are common, but not always easy to solve. Second, governance challenges and hurdles may make it even more difficult to develop inter-areal collaborative strategies. For a successful re-orientation and de-concentration collaboration, accessibility to green- and eco-tourism activities through urban tourism destination gateways is essential. Effective liaisons between often disconnected stakeholders are prerequisites for the shared interest and vision for co-growth into sustainable and resilient tourism resource development. This paper investigates the potential conflict of interest among geographically disconnected stakeholders and viable strategies linking those stakeholders. An evidence-based study on the space-time tourism dynamics for the Las Vegas metropolitan area will be presented in the present paper. This study seeks to design a model framework for reconciling diverse space-time conflicts in the wider Las Vegas area. The specified empirical models will test if and how the collaboration among the various stakeholders in the region around the Las Vegas metro can enhance the resilience of the tourism industry and grow together with mutual positive externalities. Also, comparative studies between the Las Vegas metro (with its surrounding neighbors that offer green- and eco-tourism) and other urban tourism destinations of the U.S. lacking such spatial complementarity will highlight the growing importance of space-time conflicts and complementarities in sustainable urban and regional tourism development. The findings of this study provide policy implications for sustainable and resilient tourism development for a set of broadly defined regions linking urban and rural tourism destinations.

Sex- and Gender-Disaggregated Data: A Review of Data Availability and Data Pathways in the EU

Mr Raffaele Ventura¹, Ms Mira Manini Tiwari¹, Dr. Gaby Umbach¹, Ms Carmen Ramirez Folch¹, Dr. Jaromír Harmáček², Dr. Bogna Kietlińska³, Dr. Laura Rahm¹

¹European University Institute, Florence, Italy, ²Palacký University Olomouc, Olomuc, Czech Republic, ³University of Warsaw, Warsaw, Poland

S27-S1 Gender Equality in Regions in Europe and Beyond, D12, August 27, 2025, 4:30 PM - 6:30 PM

This research investigates the demand for, availability of, and pathways to sex- and gender-disaggregated data (S/GDD) for social policy with a focus on EU and national levels. It begins with charting the more institutionalised roots of S/GDD in terms of global charters, agreements, and goals at the United Nations (UN) level. This is followed by a descriptive analysis of the availability of S/GDD in the Sustainable Development Goals (SDGs). This is followed by a descriptive analysis of the availability of S/GDD in the SDGs. Our research then mirrors this at the EU level, outlining how S/GDD is positioned and addressed in official mandates, and how the EU's statistical system and national statistical offices have implemented the mandate of collecting S/GDD to improve gender equality. Progress measurement at the EU level concerning gender equality is addressed by an analysis of the EU Social Progress Index and Regional Competitiveness Index, illustrating the contextualisation of global ambitions to inform regional social policy. The research's second part focuses on global, EU, and national data pathways, beginning with an outline of key concepts and actors involved in data pathways in the EU. A combination of survey and interview data was collected, from June 2024 to February 2025, and analyzed to address the research questions. The two surveys explore the S/GDD pathways, usage, and challenges at the regional and member-state levels. The first survey investigates the data collection processes and the availability and accessibility of S/GDD at the EU national statistical offices (NSOs) and Eurostat. The second survey collects data from S/GDD users at the EU level. Finally, a national case study, comprising interviews with researchers and statistical actors in Poland, is investigated in-depth to gather context-specific insights, offering a more qualitative understanding of the S/GDD pathways and challenges. Both the results of the surveys and the case study illustrate the complexities of data pathways and explain the significant variability in S/GDD experiences across different EU member states.

The impact of Next-Generation Broadband: Marriage rates and Assortative mating

Dr. Miriam Marcen¹, Dr. Marina Morales¹

¹Universidad de Zaragoza, Zaragoza, Spain

G10-O3 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 29, 2025, 9:00 AM - 10:30 AM

This work examines the effect of next-generation broadband on marriage rates among opposite- and same-sex couples in Spain. Given that the decision to sustain a relationship and enter into marriage is influenced by a broad spectrum of opportunities, high-speed broadband access can play a pivotal role in reducing search frictions, enhancing communication, and influencing cultural norms, thereby exerting a positive impact on marriage rates for both homosexual and heterosexual individuals. However, it is not clear whether the magnitude of the impact is the same for both groups. To explore this issue, we exploit plausible exogenous geographic and temporal variations in next-generation broadband coverage. We merge microdata on all Spanish marriages from 2013 to 2022 with the annual proportion of households with access to next-generation broadband via Fiber-to-the-Home (FTTH) at the municipal level. Our findings indicate that an increase in local FTTH coverage is associated with a higher crude marriage rate, controlling for municipality and time fixed effects. The response of same-sex marriages is twice as large as that of heterosexual marriages, relative to their respective average marriage rates. Empirical evidence does not support improved positive assortative mating as an explanation for the differing response observed among same-sex couples. High-speed internet access reinforces positive assortative mating by education and occupation for opposite-sex couples. Supplementary analysis, using data on public funding, shows that government support for expanding FTTH through the Next Generation Broadband Expansion Programme translates into an increase in the crude marriage rate, highlighting the appeal of areas with high-speed internet in addressing depopulation.

The political economy and geopolitics of sustainable development indices

Ms Mira Manini Tiwari¹, Prof. Dr. Gaby Umbach¹

¹European University Institute, Florence, Italy

S02 Localizing Sustainable Development Goals: Actions, Assessments, and Interlinkages at the Regional Level, G6, August 27, 2025, 4:30 PM - 6:30 PM

As editors of the forthcoming Elgar Companion to Data and Indicators for the Sustainable Development Goals, we undertook the creation of an original dataset of global sustainable development (SD) indices to examine the political economy and geo-politics of sustainable development measurement and reporting. This was grounded in two principles: the need for innovation in measurement to re-evaluate and adapt existing global goals and SDG practices to local realities, and the consequent need to assess and operationalise the quality of SDG data for distinct contexts.

Unlike prior comparisons of SD measures, the dataset focuses not only on what the indices measure (a granular comparison of the indicators, areas, and roots in global frameworks), but also how they are developed. This ‘how’ analysis includes the political economy and geopolitics dimensions of the production as well as the funding of the indices. These analyses, hitherto unseen in SD data research, enable the examination of the actors and contexts that form the basis of global SD measurement and reporting. Finally, the dataset compares the data quality features of each index, investigating factors including the accessibility, usability, comprehensibility, relevance, and timeliness of the index in order to shed light on the scope for engagement with the data by civil society and governments at the regional, national, and local levels.

The indices of the final dataset meet the criteria of being cross-border (regional or global), multi-area (not a single goal), and multi-annual (not a one-off). This served to identify those indices that possess agenda-setting power in shaping how other actors and contexts understand and enact sustainable development. The dataset also reveals the unique approaches of regional, sub-regional or special conditional indices, and indices of inter-governmental organisations. The former reflect an interest in how geographical, social, and economic factors intersect to impact sustainable development performance. The latter highlight the recognition of cross-border actors’ bearing on national sustainable development

The presentation will detail the dataset findings: the implicit definitions of sustainable development and the indicators employed; the measurement of SDG spillovers and synergies; measures of absolute, comparative, and relative progress across time and contexts; the role of research, custodian, and inter-governmental actors in index production; the extent and nature of non-traditional data usage and its implications; the levels of data disaggregation; the data accessibility; the Northern European and high-income dominance in index funding and creation; and the implications of this for localised SDG measurement and governance in practice.

Whose wellbeing? A novel dataset on the political economy of composite wellbeing indices.

Ms Mira Manini Tiwari¹, Mr Raffaele Ventura¹

¹European University Institute, Florence, Italy

S82 Well-Being Patterns and Disparities Across European Countries and Regions, F5, August 28, 2025,
4:30 PM - 6:30 PM

Despite calls to localise wellbeing understandings, and for reprisals of historic, territorial approaches to wellbeing, preliminary evidence suggests that indices – which, through data's governing power, define and shape action towards wellbeing – nonetheless reflect temporally, geographically, and conceptually narrow understandings.

However, meaningful policy and civil society changes require concrete evidence and analysis, firstly of these differences, secondly of their subjectivities and provenance, and thirdly of the potential to engage with, apply, or improve indices. The novel dataset presented here addresses all three of these. The paper provides descriptive statistics for each strand, followed by discussions of their respective relevance and applications.

First, it analyses the definitions and contents of composite wellbeing indices. In particular, it examines parameters of long-term socio-environmental relations and equity; references to local concepts and practices; and indicators designed with community input. Furthermore, it details data disaggregation, capturing whose wellbeing is being measured and how.

Second, to contextualise the indices' differences and gaps, the dataset investigates the political economy and geopolitics of index funding and production. This approach, demonstrated in prior datasets on governance and sustainable development, offers a valuable and hitherto under-applied understanding of how core policy concepts are operationalised, by revealing the economic status, actors, and geographies of the entities financing and producing indices that shape global discourse and local policies.

These analyses are pertinent both for nations outside and inside the normative 'centre'. For example, subjective wellbeing surveys in the European Union, through the examples in the questions, prescribe how wellbeing should manifest: cultural and recreational spaces, defined as libraries, museums, or concert halls, may not reflect those desired by contemporary, marginalised or diverse youth in Europe's cities, and indicators of wellbeing may not meet the structural needs of women and men, biologically and in societal roles.

Finally, potential local, community-grounded measures of wellbeing derive their actionable meaning from the usability of the indices by the communities they intend to support. The dataset therefore examines the data quality, tailored to civil society and local government applications, and the accessibility in terms of FAIR data principles.

The dataset invites civil society and local governance actors to access and build on a delineation of the interdependencies, or lack thereof, between communities, places, and wellbeing measures. By mapping where definition, funding, production and access to wellbeing data (mis)align with their respective contexts, it elucidates the normative framework, and consequently where territorial approaches can intervene.

Transformative capacities in non-core regions: a conceptual framework and steps towards operationalisation

Sabine Marr¹, Prof. Artem Korzhenevych¹, Dr. Markus Egermann¹, Alexandra von Brunn², Dr. René John², Leonie Liemich³, Prof. Raj Kollmorgen³, Dr. Franziska Görmar⁴, Prof. Thilo Lang⁴, Dr. Katrin Martens⁵, Prof. Markus Hanisch⁵

¹Leibniz Institute of Ecological Urban and Regional Development, Dresden, Germany, ²ISInova, Berlin, Germany, ³HSZG, Zittau, Germany, ⁴IfL, Leipzig, Germany, ⁵HU Berlin, Berlin, Germany

S87-S1 Territorial Transitions: Exploring the Scene of Participatory Actions and Common, F5, August 27, 2025, 4:30 PM - 6:30 PM

The improvement of "transformative capacities" (Wolfram, 2016; Sousa, 2023) to initiate, accelerate and stabilise change towards sustainability in cities and regions while safeguarding liberal democracies remains a key challenge in the 21st century. These capacities, as a general framework (Wolfram, 2016), include multiple governance modes, transformative leadership and empowered communities of practice as key agency components. They also include the processes that contribute to capacity building, namely creating system awareness, sustainability foresight, experimentation, innovation embedding and social learning. However, while the framework emphasises the importance of a spatial perspective regarding its components and underpins that perspective for urban contexts, both i) a systematic integration of spatial aspects deriving from other research fields and ii) application of the capacities framework for non-core regions, are lacking.

Typically not considered as arenas within which future development perspectives arise, the non-core regions (defined as areas outside of agglomerations typically associated with a range of negative connotations (Leick and Lang 2018)) are usually conceptualised as powerless (Lang 2015), and the agency and transformative power of actors in non-core regions is usually overlooked (Leick and Lang 2018). However, such regions can also be seen as playgrounds for alternative futures and development models because typical (urban/ metropolitan) models of development and transformation cannot be simply transferred to non-core contexts.

This paper examines how spatial perspectives from sustainability transitions, economic geography, research on (rural) social enterprises, and sociological studies of regional change enhance the transformative capacity framework and explores how this enhanced framework can serve to study transformative capacities in non-core regions.

The theoretical framework is informed by a theory-driven literature review and a literature synthesis. We specify its operationalisation and application for non-core regions by formulating guiding questions for field work. First empirical results from 4 non-core regions in Germany are then presented.

Non-core regions often face challenges like demographic decline, financial resource scarcity and institutional limitations but offer opportunities for experimentation and innovation, with rural social enterprises and other hybrid organisations playing a vital role in promoting co-creation and addressing sustainability challenges. This work contributes to the ongoing dialogue between economic geography, regional studies, and sustainability transition research, offering insights for empirical studies on sustainability transitions in non-core regions.

Challenges and opportunities in developing circular economy in islands : case study of La Réunion.

Prof. Philippe Jean-Pierre¹, Prof Sebastien Bourdin², Dr Philippe Holstein³

¹Université de la Réunion, Saint-denis, France, ²EM Normandie, Caen, France, ³RUIZIA, , France

S01-S1 The Spatial, Regional and Urban Dimensions of Circular Economy, Amphitheater II - SAKIS
KARAGIORGAS, August 27, 2025, 11:00 AM - 1:00 PM

The circular economy (CE) concept is increasingly recognized as a crucial framework for addressing environmental challenges and fostering sustainable development. It offers a systematic approach to reducing waste, conserving resources, and promoting economic resilience by transforming traditional production and consumption patterns. However, its implementation and significance within island economies have been largely overlooked in existing literature, despite these regions' unique vulnerabilities and ecological constraints. Islands face specific challenges, such as dependency on imports, geographic isolation, and limited natural resources, making the traditional linear economy model unsustainable in the long run. Islands' geographic and economic isolation amplifies their susceptibility to global market fluctuations and ecological crises, underscoring the urgency of adopting more resilient and sustainable economic models.

Despite its potential benefits, the practical application of CE in island contexts remains under-researched. Until now, studies have primarily focused on waste management in islands, while CE encompasses a broader range of aspects. This research gap is particularly pressing given that, due to the environmental, societal, economic, and logistical constraints of island territories, the 10Rs of the circular economy are not merely ecological options but essential strategies for survival.

Furthermore, implementing CE in island economies requires careful consideration of local contexts, including cultural, social, and economic factors that can influence the success of CE initiatives.

Moreover, the success of CE often depends on strong governance frameworks, active stakeholder participation, and effective public policies that support the transition to circular models. From this point of view, the CE can enhance the sustainability and resilience of island economies. However, there is a lack of understanding regarding how these principles can be effectively applied in specific island contexts.

Our study aims to address this literature gap by examining how a small island economy, especially facing disproportionate risks, can progress towards a circular economy, given physical challenges (such as limited size, isolation, and resource scarcity) and socially-constructed obstacles (such as the path-dependency of regional economy systems, the challenges of multi-level governance, the allocation of structural funds and publics, and the influence of political cycles and strategies).

To reach that goal we focus on La Réunion, a French and European Outermost region, which provides an ideal case-study to answer how La Réunion, an isolated and insular territory, can not only adapt to waste management challenges and the ecological crisis but also serve as an innovative model for other similarly isolated regions.

The impact of China's investment in overseas container ports and its spillover effect on global trade network

Dr. Xieer Dai¹, Mrs. Ziling Li¹

¹Shenzhen University, Shenzhen, China

S08 Regional Impacts of Global Value Chains Reorganization, E14, August 29, 2025, 2:00 PM - 4:00 PM

This paper investigates the impact of Chinese investment on target container ports throughput using port connectivity data of 392 ports in 69 countries from 2006 to 2023. Through trade network integration, Chinese investors' terminal operations and management expertise can improve terminal efficiency, facilitating higher trade volumes. Additionally, Chinese enterprises that own and operate vessel fleets can integrate overseas ports into their international shipping networks, bringing cargo flows and shipping demand more efficiently to the local area.

Significant investments have been made in European ports due to China's Belt and Road Initiative(BRI), with the port of Piraeus in Greece being a prime example. Since being fully run by a Chinese state-owned enterprise (COSCO) in 2016, Piraeus has become one of the fastest-growing ports in the world. The expansion of ports like Piraeus has been largely attributed to changes in liner firms' direct ship calls and network arrangements, along with the enhancement of terminal facilities brought about by BRI investments.

Using spatial difference-in-difference(SPDID), we find that Chinese investment in overseas container terminals can positively impact their shipping capacity (using Liner Shipping Bilateral Connectivity Index data sourced from UNCTAD) and increase the host countries' international trade volume. The spatial spillover effect significantly improves regional shipping capacity besides the targeted ports. We use propensity score matching (PSM) as a preprocessing step to address potential selection bias since the selection of targeted ports is not random. Port feature variables obtained from the World Port Index (Pub 150) are used to match the control group and treatment group.

Furthermore, trade network integration increases the regional centrality of targeted ports and lowers maritime container transportation costs. China's port investments amplify the regional impacts of GVC reorganization by redefining trade geographies and reshaping comparative advantages.

EU Cohesion Funds and Slovak Enterprises: Insights from Programming Period 2014-2020

Prof. Tomáš Výrost¹, Mrs Eva Výrostová²

¹Slovak Academy of Sciences, Bratislava, Slovakia, ²Masaryk University, Brno, Czech Republic

G20-O3 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G5, August 28,
2025, 4:30 PM - 6:30 PM

The main objective of the European Union (EU) Cohesion policy (CP) is to strengthen economic, social, and territorial cohesion by reducing regional disparities. Brexit, the new challenges facing the EU, and the socio-economic consequences of the COVID-19 pandemic created pressures, particularly on the effectiveness and efficiency of its resources.

By far, most studies find a conditional impact of CP on growth and convergence, where the effectiveness of CP depends on various factors, such as quality of institutional set-up, decentralized administrative structure, other supportive policies on national and regional levels, sound macroeconomic policies, industrial structure, territorial capital and regional characteristics, human capital, and others.

Newer studies in the field point out that an analysis should also be conducted at the micro level. The microeconomic analysis may be conducted from two different perspectives. On one hand, the national or supranational financing and management bodies may be interested in the effectiveness of the use of provided funds, reaching project goals, and their alignment, transmission channels, and contribution with respect to the overall CP objectives. From the individual company's perspective, a direct (beneficiary) or indirect involvement in CP projects (as a subcontractor or supplier) may present a substantial source of income and revenue that would be unavailable. As the provision of EU funding bypasses the usual market allocation mechanism that, in classical and neoclassical theories, ensures efficient use of scarce resources, it may be viewed as a source of unfair advantage and potential misallocation. To consider such effects, we evaluate the consequences of EU Cohesion policy funds in Slovakia from the perspective of corporate efficiency, performance, and financial standing of companies directly or indirectly involved in EU Cohesion policy-funded projects.

In our paper, we present an analysis of the Cohesion policy and its effects during the 2014-2020 programming period in Slovakia. Our analysis is augmented by using granular microeconomic data on Slovak enterprises engaged in EU Cohesion policy-funded projects by utilizing a unique dataset on financials and ownership structures spanning all Slovak legal entities in the given period.

The role of skill supply for local industrial dynamics: Evidence from Italian provinces

Dr. Michela Borghesi¹, Prof. Alberto Marzucchi², Prof. Ugo Rizzo¹, Dr. Kateryna Tkach²

¹University of Ferrara, Ferrara, Italy, ²Gran Sasso Science Institute, L'Aquila, Italy

S88-S3 Twin Transition and its Unequal Geography, B2, August 28, 2025, 4:30 PM - 6:30 PM

The digital and green transition, also referred to as “twin transition”, is at the core of current EU policy frameworks and academic discussions. Although there is a steadily growing stream of research on effects of this intertwined transformation, evidence on its implications for local economies is still emerging. While previous studies have focused primarily on the demand-side effects of this transition, the supply-side impact, particularly at more granular geographical levels, has received relatively less attention. This paper aims to contribute to this stream of research by examining the role of digital and green skill supply for industrial dynamics in Italy. Using the data from the mandatory reports submitted by Italian universities and firm entry and exit rates at the provincial level, we investigate the impact of digital and green skill supply for local industrial dynamics. Our dataset covers 106 Italian provinces (NUTS 3 level) from 2018 to 2023. Our findings reveal that the supply of digital and green skills from top graduate programs is a positive and significant factor for firms’ entry rate. Interestingly, green skills remain significant even when controlling for the intangible assets available across provinces, whereas digital skills’ effect seems to vanish for the entry rate. Moreover, we find that digital skill supply is negatively associated with the firm exit rate, while for green skills no significant relationship was identified. These results highlight the distinct characteristics of digital and green domains of the twin transition as well as their role for the local industrial dynamics.

The Role of the Green Labour Market in the Development of Disadvantaged Areas

Dr. Katalin Liptak¹

¹University Of Miskolc, Associate Professor, Miskolc, Hungary

S39 Leveraging Green Financial Resources in the Fight to Overcome Regional Disparities, E1, August 27, 2025, 11:00 AM - 1:00 PM

Sustainability and environmental protection are key issues today, and most economies are paying particular attention to these issues. For rural areas, a new approach to labour market processes is an excellent opportunity to move towards sustainability. While environmental sustainability, renewable resources and their growing role are often discussed, the sustainable labour market is less so. Labour market sustainability can be approached from several angles. Much of the literature focuses on direct job creation and only superficially on indirect job creation. Defining green jobs is not an easy task, as the literature is not yet consistent. Green jobs are jobs that reduce the environmental impact of businesses and economic sectors to an ultimately sustainable level. This definition refers to work in agriculture, industry, services and public administration that contributes to preserving or restoring the quality of the environment while meeting the criteria of decent work, decent wages, safe conditions, workers' rights, social dialogue and social protection. In the presentation I will describe the labour market situation in disadvantaged areas in Hungary and the opportunities for break-outs that can be improved by strengthening the role of non-profit organisations. Among active policy instruments, new job creation is the best solution, but also the costliest. In Hungary, the green labour market in rural areas is still in its infancy and there are many opportunities for its development.

An Impact Evaluation of the Effects of Income Support Benefits on Aggregate Labour Supply: A SCM Approach

Prof. Javier Martín-Román², Prof. Ángel Martín-Román¹

¹University of Valladolid, Valladolid, Spain, ²Universidad Nacional de Educación a Distancia, Madrid, Spain

G23-O1 Labor Markets, Unemployment, Gig Economy, Digital 'Nomads', Amphitheater II - SAKIS
KARAGIORGAS, August 28, 2025, 9:00 AM - 10:30 AM

This paper evaluates the impact of income support benefits on aggregate labor supply, focusing on the Agrarian Unemployment Benefit (AUB) implemented in Andalucía, Spain. Using a quasi-experimental design, the Synthetic Control Method (SCM), we compare the labor force participation rate of Andalucía with a synthetic counterpart. The results indicate that the AUB increased the participation rate by approximately 2 percentage points during the initial years after implementation. However, this rise did not surpass the number of AUB recipients, suggesting partial offsetting effects. The analysis identifies both encouraging and discouraging labor supply responses, highlighting the role of monitoring mechanisms and the macroeconomic environment. This research contributes to the literature by providing a macroeconomic perspective on income support policies, exploring theoretical channels of labor supply decisions, and applying SCM as an innovative tool in this context. The findings have implications for the design of similar policies in regions with structural unemployment.

Social Housing Allocation and Economic Segregation in the Netherlands 2007-2022.

Dr. Diego Buitrago-Mora¹, Dr. Clémentine Cottineau-Mugadza

¹Tudelft, Amsterdam, The Netherlands

S50 Social Housing and Socio-Spatial Segregation: New Challenges in Urban Planning, D1, August 28,
2025, 9:00 AM - 10:30 AM

The Netherlands has long been recognized for its effective social rental housing system, which provides affordable housing for low-income households. With over a third of its housing stock dedicated to social housing, the country has maintained relatively low income segregation and high sociospatial mobility. However, reforms since the late 1980s have shifted decision-making from national authorities to local municipalities, narrowing the mission of housing associations. The introduction of the 90% rule in 2010 exemplifies this shift, requiring that at least 90% of newly available social housing units be allocated to households below the DAEB income limit.

This study examines how the 90% rule has affected local economic segregation between 2007 and 2022. By restricting social housing primarily to low-income households, the policy may have contributed to increased spatial concentration of poverty. While the regulation aimed to address competition concerns between subsidized housing corporations and private landlords, its unintended consequences on local income segregation remain underexplored.

Using administrative georeferenced data from Statistics Netherlands (CBS), we analyze shifts in the share of low-income households at the 500m grid level. A shift-share decomposition separates the policy effect from broader economic and demographic trends. We measure local economic segregation using Moran's I, capturing spatial clustering of income levels within a given buffer. Finally, a two-stage least squares (2SLS) approach assesses the causal link between policy changes and segregation patterns.

Our findings contribute to understanding how housing policy shapes spatial income distribution. By evaluating whether stricter allocation rules intensified segregation, we offer insights for designing policies that balance targeted allocation with income integration, ensuring social housing remains an effective tool for social equity.

Circular Economy and the Fashion Industry: insight from the Prato. A case study of circular industrial district.

Prof. Silvia Grandi¹, Ms Angela Salzo

¹University of Bologna, Bologna, Italy

S01-S3 The Spatial, Regional and Urban Dimensions of Circular Economy, Amphitheater II - SAKIS

KARAGIORGAS, August 27, 2025, 4:30 PM - 6:30 PM

The concept of the Circular Economy has gained increasing attention in both academia and policy agendas. However, its application to the textile and fashion industry remains underdeveloped despite tackled by severa EU very recent policies. This paper seeks to address this gap by examining the case of Prato's renowned textile industrial district, which was iconically analyzed by Giacomo Becattini in his seminal works. From this perspective, the study presents Prato as an archetype of a circular textile industrial district, exploring its evolution and the complex challenges it faces in adapting to the European Union's new legal requirements. These challenges can be compared to the transformative effects of globalization and increased trade liberalization on European regions in the early 2000s, particularly in reshaping Prato's socio-economic system. Notably, Prato's circular model is deeply rooted in its historical tradition of wool fiber recovery, a practice that dates back over a century and can be traced as far as its 12th-century Wool Guild. The case of Prato offers valuable insights into the challenges and resilience patterns shaping the circular transition of the fashion industry.

HEIs and the dynamization of peripheral regions: exploring the economic demand-side effects

Prof. JOSE FILHO¹, Prof. José Firmino Sousa Filho², Prof. Gervásio Santos³, PhD Marta Rossi⁴

¹State University of Santa Cruz, Ilhéus, Brazil, ²Federal University of Bahia, Salvador, Brasil, ³Federal University of Bahia, Salvador, Brasil, ⁴Center of Data and Knowledge Integration for Health , Salvador, Brasil

G24-O3 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 29, 2025, 11:00 AM - 1:00 PM

Universities contribute to the regional economic dynamics by acting as centers of employment generation, influencing local demand for goods and services, and redistributing income through institutional expenditures. In Brazil, public universities function as structural components of regional economies, contributing to the reduction of spatial inequalities, particularly in areas with lower levels of industrialization. This study examines the economic impact of Universidade Estadual de Santa Cruz (UESC) in Bahia, focusing on the institution's demand-side effects and role in the regional and national economy.

The analysis is based on financial data from UESC for 2018, including detailed information on budgetary expenditures, payroll, and institutional purchases. The study employs an inter-regional input-output analysis, integrating UESC's financial transactions with a 53-region, 68-sector input-output matrix. This approach quantifies the direct, indirect, and induced economic impacts of the university's activities and identifies how institutional expenditures influence different economic sectors at regional and national levels. Additionally, data from the Household Budget Survey (POF-2018) estimates the distribution of salaries and scholarships across consumption categories, linking university-generated income to sectoral demand.

The results indicate that 72% of UESC's budget is allocated to public education, with the remainder distributed across administrative services, security, construction, trade, and utilities. Salary expenditure represents a major component of the university's financial flows, influencing consumption patterns and generating economic spillovers. The employment and production multipliers derived from the input-output model demonstrate that UESC's impact extends beyond the Ilhéus-Itabuna region, reaching other areas of Bahia and states such as Minas Gerais, São Paulo, and Rio de Janeiro. The induced effects of institutional expenditures contribute to regional integration by fostering linkages between different economic sectors and geographic areas.

The study contributes to the literature on higher education and regional development by providing a detailed analysis of a public university's demand-side economic effects in a developing economy. The methodological framework used in this study offers a replicable model for evaluating economic impacts driven by universities in other contexts. The findings also inform policy discussions on regional inequality, demonstrating how investments in public universities can affect economic dynamics beyond their immediate geographic location. The results highlight the role of universities as economic agents that contribute to sectoral growth, employment generation, and interregional economic integration.

People-Powered or State-Controlled? Examining the Reality of Public Engagement in Just Transition Governance in Three Coal-Dependent Regions

Ms Foteini Pliatsika¹, Dr Despoina Kanteler¹, Ms Konstantinia Nikolaidou¹, Dr Spyros Niavis², Dr Eleftherios Topaloglou¹

¹University Of Western Macedonia, Kozani, Greece, ²University of Thessaly, Volos, Greece

S40-S1 Just Transition Governance: The Challenges of Justice, Place-based strategies and monitoring mechanisms, F12, August 27, 2025, 11:00 AM - 1:00 PM

The Just Transition (JT) framework, which aims to support regions transitioning away from coal-dependent economies, emphasizes the role of public engagement in a just energy transition governance and recognizes it as a key policy approach especially in regions dependent on coal. However, public engagement strategies have been implemented in varying degrees across the various European regions undergoing energy transition. This research examines the governance models and public engagement dynamics in such three coal-dependent regions: Western Macedonia (Greece), Silesia (Poland), and Stara Zagora (Bulgaria). These regions, with their distinct political, social, and economic contexts, offer insight into the role of public engagement in the Just Transition process as well as the level of engagement that the public has had so far. While Silesia stands out with its participatory governance model, both Western Macedonia and Stara Zagora reflect a top-down approach marked by limited public involvement, state control, and challenges such as political instability and corruption. This contrast underscores the varying degrees of public participation and the resulting impact on the success and acceptance of energy transition policies in these regions.

Declining resilience of shopping centres and its consequences - the example of Warsaw

Prof. Małgorzata Twardzik¹

¹Warsaw School Of Economics, Warszawa, Poland

S28 Declining Resilience of Shopping Centres Effects in the European Urban Space, D12, August 29, 2025, 2:00 PM - 4:00 PM

Shopping centers appeared in Poland in the mid -1990s as foreign investments of the largest retail operators in Europe. The key discussions focus on shopping centres as attractive places for shopping, spending free time, and as new tourist and recreational spaces in cities. Importantly, the pace of retail and consumptions spaces development in Poland has been the most dynamic in Europe. Their rapid development is linked to the post-communism vacuum in the supply of such spaces. In Warsaw and other key cities, this gap has largely been filled by planned retail spaces, in particular shopping centres, while the organic growth of such spaces, was minimal, with only a limited number of high streets in Warsaw. The newly built shopping centers are becoming competitors for older facilities, which are increasingly struggling with the problem of lack of tenants. One in four shopping centres in Poland is over 20 years old, while those that are over 15 years old, are already considered obsolete. The process of decline of shopping centres in Poland has already begun and could be further accelerated by the dynamic development of digital tools and their applications in trade, e.g., e-commerce, causing negative economic, functional and spatial effects. There is a concern that due to the shifts in consumer purchase behaviour, high inflation leading to smaller disposable income the economic viability of shopping centres, may be in question. There is a need to study the scale of this phenomenon in Poland and to look for opportunities to reverse the negative trend. This has been evident in recent years, as the market resilience of shopping centers in Poland has been systematically declining, leading to a loss of economic viability and, ultimately, bankruptcy. The resilience of a shopping centre is typically associated with its ability to adapt (react and adjust) to economic, social and environmental shocks. As such, this research seeks to examine recent changes in Warsaw's retail landscape and shifts in consumer trends to evaluate their current economic performance and resilience. Aims of the paper:

- Examining the evolutionary of the retail spaces in Warsaw.
- Investigating factors and pressures driving the current trends and economic performance of these spaces.

Research questions:

- What changes are taking place in retail spaces in Warsaw?
- What factors and pressures are driving current trends in retail spaces in Polish and other Western agglomerations?

Smart specialisation, a paradigm shift in the EU Outermost Regions?

Dr Philippe Holstein³, Prof Sebastien Bourdin², Prof. Philippe Jean-Pierre¹

¹Université de la Réunion, Saint-denis, France, ²EM Normandie, Caen, France, ³Ruizia, , France

G20-O1 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 27,
2025, 4:30 PM - 6:30 PM

A growing body of literature has recently focused on the design and implementation of smart specialisation strategies (S3s) in peripheral regions. Whether considered from a geographic, economic, or political perspective, peripherality has traditionally been depicted as an obstacle to regional research and innovation systems' performance and the emergence of a knowledge-based economy. Despite such constraints, numerous studies have questioned geographic determinism and shown the possibility for dynamic research and innovation systems to thrive in peripheral regions.

The literature review on 22 publications reveals a marked geographic concentration of existing publications on continental peripheries, as well as on sparsely populated areas. Island regions, and more particularly the 9 EU Outermost Regions (ORs) -Azores, Canary, French Guiana, Guadeloupe, Reunion, Madeira, Martinique, Mayotte, Saint Martin – remain so far ignored. This gap appears all the more surprising, for these regions can be seen as extreme peripheries, combining physical remoteness and accessibility issues, with a small size and adverse socio-economic characteristics.

Our paper aims to fill this gap. Nonetheless, this ambition goes beyond the simple desire to cover a geographical area that has not been studied yet. More precisely, the contribution of our work is to assess the implementation of S3s in contexts that go beyond the usual justifications for continental regions experiencing sectoral transformation. Our article focuses more on other areas of justification as, in the ORs, S3s have been designed to meet the territorial challenges of major transitions (climate, energy) and to strengthen their resilience. Our work will also echo the ambitions of the European Commission which called in its 2008 Communication for a “paradigm shift” through the advent of knowledge-based economies in the ORs.

The aim of this article is therefore to question the implementation of S3s in ORs, and to analyze whether or not these strategies have led to a real paradigm shift in their development process, i-e : have they managed to turn the challenges and vulnerabilities associated with insularity into opportunities to design knowledge-intensive solutions serving the resilience of remote areas?

In order to meet this objective, our work will mobilize a case study approach on 7 ORs and will highlight :

- the factors influencing the adoption, implementation and results of (S3) in the ORs,
- the convergence and divergence among the different ORs, notably in terms of governance models;
- the existence of an “island specificity” impacting S3s and the contribution of island regions to decipher more global trends.

The evolution of well-being in European Regions: a multidimensional index approach.

Ms Foteini-Antonia Papadioti¹, Professor Vassilis Tselios¹

¹Panteion University, Athens, Ελλάδα

S82 Well-Being Patterns and Disparities Across European Countries and Regions, F5, August 28, 2025,
4:30 PM - 6:30 PM

Well-being has become a key priority for the European Union, as reflected in its goals and policies. At a theoretical level, well-being is also an important issue within welfare economics, economic geography and regional science. This study aims to shed light on the evolution of well-being in Europe at national and sub-national (regional) level. A detailed investigation of this subject can offer to the European governments and policymakers the best way to solve the problems of contemporary societies and to enhance well-being in modern Europe.

Using regional European data for five programming periods, from 1989 to 2020 (1st: 1989-1993, 2nd: 1994-1999, 3rd: 2000-2006, 4th: 2007-2013 and 5th: 2014-2020), a multidimensional index is proposed that captures the well-being in the European regions. More specifically, this study also aims to shed light on the evolution of regional well-being.

This subject meets the needs of contemporary European societies for higher standards of living of the European citizens. However, some European regions have higher well-being levels than others. This gap is very interesting to be studied. We hope that this study will give insights on how the European Union could face the problems of socioeconomic division and inequality and how a balanced human development among territories could be achieved. Well-being measures can raise broader awareness of policy objectives by highlighting how policy might improve social and economic outcomes and improve policy coherence by emphasizing complementarities of different forms of public action.

Social Capital and Academic Mobility in Italy

Ms Ilenia Bertacche¹

¹Università Di Corsica Pasquale Paoli, Corte, France

S18-S2 University Impacts on the Local and Regional Economy, G5, August 29, 2025, 9:00 AM - 10:30 AM

The mobility of highly skilled individuals plays a crucial role in shaping research productivity, institutional quality, and regional economic development. While previous studies have examined the impact of mobility on research performance, particularly among researchers, less attention has been given to the role of social capital in influencing these movements. This study aims to fill this gap by analyzing the determinants of researcher mobility across Italian provinces, with a particular focus on the influence of social capital.

Academic mobility has been studied from various perspectives, emphasizing economic, institutional, and social factors. Some researchers have explored the link between mobility and research productivity. Abramo et al. (2022) find that academic movement affects researchers' output, though the impact varies by discipline and researcher demographics. Similarly, Wu et al. (2024) highlight the role of career advancement but suggest that promotions, rather than mobility itself, serve as the primary driver of productivity gains among researchers.

A distinct body of literature investigates the factors determining mobility. One key finding is that professional relocation is often driven by career opportunities. Barbieri et al. (2010), in their study of compulsory school teachers, found that mobility is frequently linked to career progression, with older teachers tending to return to their birthplaces, while younger ones move in search of better professional prospects. Expanding on this, D'Ingiullo et al. (2023) examine the role of social capital in shaping mobility trends, concluding that while lower-educated individuals are more constrained by social networks, highly educated professionals are primarily motivated by higher salaries and career advancement opportunities.

To our knowledge, no existing studies have investigated the determinants of researcher mobility at the university level. To address this gap, this study analyzes researchers' movements across all universities in Italy over the period 2000–2024. The study aims to explore the role of individual factors (gender, age, and academic role), university factors (research quality, reputation, and size), and environmental factors (amenities, social capital, and local institutional quality). Furthermore, we compare behavioral differences in pull and push factors across research fields.

Additionally, this paper contributes to the literature on academic mobility by emphasizing the role of social capital in high-skilled migration and exploring how it may help mitigate regional disparities. It also considers emerging trends, such as post-financial crisis and post-pandemic relocation preferences, which have reshaped mobility dynamics in the academic sector.

The dynamics of fish farm value chain in Brazil: An Institutional economics analysis

Dr. Vinicius Ribeiro¹

¹Federal Institute Of Education, Science And Technology Of Tocantins (IFTO), Palmas, Brazil,

²Federal University of Tocantins (UFT), Palmas, Brazil

G13-O3 Social Capital, Territorial Capital, Institutions and The Commons, G4, August 29, 2025, 9:00 AM - 10:30 AM

During the last 25 years, research based on Global Value Chain (GVC) approach has experienced significant interest by academics, generating studies published in a wide range of multidisciplinary journals that initially were primarily concerned with key dimensions of governance and upgrading. However, in the last decade, research has started to discuss in a more systematic way the institutional dimension in the GVC's analysis.

In this context, this research aims to discuss the institutional environment of tilapia production in Brazil, based on the analysis of a region with high potential to lead the globalization of the domestic chain. The institutional environment indexes were estimated using fuzzy modeling from three perspectives (Economic, Social, and Local). The data was collected in a region with a high capacity to lead value chain internationalization.

The results indicate that spatial specialization may be a factor leading to a higher offer of credit to production units. However, access to this credit for units located in the production zone may be more difficult due to the requirements of the environmental and operational laws in that area. In this context, we argue that the main bottlenecks of the chain (credit and legal compliance) may create a harmful feedback effect, especially for small farmers. Additionally, we point out the necessity of more efficient communication in terms of the socioeconomic and environmental benefits of the chain. Finally, we highlight the importance of strengthening the institutional framework and social capital for small producers as crucial factors to overcome bottlenecks and ensure sustainability in the Brazilian tilapia value chain.

In this study, the firms surveyed were not integrated into global chains, despite the significant potential and interest in exports by this productive sector in Brazil. This is an important aspect of this article, considering that in general, the researches in GVC fields emphasize firms already inserted in different levels of participation in international markets. Finally, it is relevant to discuss an agenda that also integrates research that maps the conditions and processes of insertion of firms in GVCs, under different viewpoints and historical perspectives (e.g.: ex-ante and ex-post). Comparisons between these scenarios and their eventual changes after participation in global chains can be significantly relevant for research on GVC analysis, policy makers, and firms.

Green finance at regional level - Comparison between the V4's

Dr. Dorottya Edina Kozma¹

¹University Of Pannonia, Veszprém, Hungary

S39 Leveraging Green Financial Resources in the Fight to Overcome Regional Disparities, E1, August 27, 2025, 11:00 AM - 1:00 PM

Green finance is part of a sustainable development strategy that helps to close the regional gaps but its application varies widely from one place to the next. It involves financial investments and instruments for environmentally sustainable projects. This includes instruments like green bonds, sustainability-linked loans, and impact investing to support climate resilience, energy efficiency and resource conservation. Green finance is a tool to shift the financial sector towards low-carbon and sustainable development by integrating environmental, social and governance (ESG) issues into financial decision making. To address regional inequality and global environmental issues, governments, financial intermediaries, and private investors are key to scaling green finance. In the paper, the author aims to present the emergence and advance of green finance in Europe, especially in the V4 in a comparative analysis. It presents the green finance characteristics, similarities and differences between the four countries.

Green finance in the Visegrad Four countries (Czech Republic, Hungary, Poland, and Slovakia) is gradually becoming a reality as they move towards sustainable economic development. Even though traditionally they have depended on fossil fuels, particularly coal, they are increasingly turning to green finance products to support the shift towards a low-carbon economy. The region's governments and financial institutions are issuing green bonds, sustainable investments, and climate-related financial policy. Poland, for example, was the first in the world to issue a sovereign green bond in 2016, setting a precedent for the region. Slovakia and the Czech Republic have also started to include environmental issues in financial legislation, and Hungary has initiated green mortgage bonds and sustainability-linked lending programs.

However, there are obstacles to overcome, including loopholes in regulations, underemployment of the private sector, and a greater public awareness need. EU funding spurs green projects, but what each nation needs to do is fill in these gaps with long-term sustainability efforts. As Visegrad Four continue to align with the EU's Green Deal objectives, green finance can be expected to increase even further. Financial incentives will have to be reinforced, transparency increased, and cross-border cooperation encouraged to accelerate the green transition in the region.

Political system and green growth: Evaluating the impact of green finance for Sub-Saharan countries

Dr. Laeeq Razzak Janjua, Dr. Dorottya Edina Kozma¹

¹University Of Pannonia, Veszprém, Hungary, ²WSB University , Dąbrowa Górnicza, Poland

S39 Leveraging Green Financial Resources in the Fight to Overcome Regional Disparities, E1, August 27, 2025, 11:00 AM - 1:00 PM

Political system determines the growth and sustainability dimensions for the state. The aim of writing this research is to examine the convergence of green finance, political frameworks, and sustainable growth in the Sub-Saharan African region, employing data from 2000 to 2024. This research examines the influence of different political system indices such as Electoral Democracy Index, Liberal Democracy Index, Participatory Democracy Index, Deliberative Democracy Index, and Egalitarian Democracy Index on the advancement of green finance and its contribution to fostering green growth using panel data analysis. In light of the urgent environmental issues in Sub-Saharan Africa, green money has become an essential instrument for sustainable development. The study examines the impact of various democratic frameworks, as indicated by the aforementioned indices, on the efficacy of green financing projects and their capacity to promote ecologically sustainable economic growth. The research integrates political system indicators with green finance data to elucidate the policy processes and governance frameworks that optimally facilitate green growth in the region. The findings of this study enhance the comprehension of the overarching political and economic frameworks influencing green financing, providing significant recommendations for policymakers seeking to harmonize democratic governance with sustainable development objectives in Sub-Saharan Africa.

A Possible Diverse Economic Geography of Talent? Counterflow of Students' Migration in Italy

Dr. Fabiano Compagnucci¹, Prof. Martina Dal Molin², Prof. Giulia Urso³

¹GSSI - Gran Sasso Science Institute, L'Aquila, Italy, ²Faculty of Economics and Business Administration, Vilnius University, Vilnius, Lithuania, ³GSSI - Gran Sasso Science Institute, L'Aquila, Italy

G24-O4 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 29, 2025, 2:00 PM - 4:00 PM

This study aims at investigating the counter-flows of students in Italy at the province level (NUTS 3) over the period 2010-2023. Students mobility has always attracted great attention of regional economists, since, according to the neoclassical model, migration flows are considered an adjustment mechanism for balancing economic and social disparities among territories (Dotti et al., 2014). Extant studies demonstrated that several factors affect the student choice process of a university, such as its overall quality and that of life in the destination provinces (Bratti and Verzillo, 2019; Ciriaci, 2014; Dotti et al., 2013). They farther show that students generally migrate from peripheral areas to selected urban and metropolitan areas, where universities are typically located (Ballarino et al., 2022; Charles, 2016). However, a new stream of research is investigating the counterflow of students, who, on the contrary, move from central to more peripheral areas (Fonseca, 2023, Dal Molin et al, 2025). These “counter-flows” of students, although smaller in scale, may represent a crucial driver for the renewal of peripheral universities as well as for the local development of inner areas (Fonseca, 2023). Based on these premises, the quantitative analysis proposed investigates the association between the increase of students choosing a peripheral universities (students living and studying in these areas; students moving from a peripheral province to a university belonging to a different peripheral province; students moving from metropolitan to peripheral areas) with data regarding the characteristics of these universities as well as their socioeconomic milieu. Results provides useful information for targeted place-based policies.

Effect of Tourists' Inflows on the Economic Performance of the Accommodation Sector in Italy

Dr. Khalid W. A. Shomali¹

¹University of Venice, Venice, Italy

S09 Opportunities, Risks and Challenges of the Digital Transformation in Tourism: ICT and LocalDevelopment, E12, August 29, 2025, 9:00 AM - 10:30 AM

This paper estimates the effect of tourists' inflows on the economic performance of the accommodation sector in Italy between the years 2015-2023 on a provincial level (NUTS3). The economic performance is measured by indicators such as revenues, profits, EBITDA, labor costs (per dependent) and number of employees. Our main explanatory variable is the share of tourists in the provinces, where we distinguish between tourists from developed countries and developing countries. Data on tourism are drawn from ISTAT and data on the economic indicators are drawn from AIDA database. The empirical strategy is based on the comparison between the OLS and instrumental variable (IV) approach, as we test for potential endogeneity. The instrument we create is based on the shift-share methodology, typically employed in the immigration studies. The results show a positive and significant correlation between tourism and the revenues, profits, EBITDA as well as labor costs of the hospitality sector. The major novelty of this study is the application of the shift-share instrument methodology to tackle potential endogeneity of the inflows of tourists when considering economic outcomes.

The Productivity Effects of Employee Job Changes on Regional Industrial Structures

Dr. Carolin Ioramashvili¹, Prof Maria Savona¹

¹University of Sussex, Brighton, United Kingdom

S10 The Knowledge and Technological Relatedness of UK National and Regional Economies, G5,

August 29, 2025, 2:00 PM - 4:00 PM

The UK suffers from weak productivity growth overall as well as wide disparities in productivity between regions. Related variety arguments and growth-complexity evidence suggest that the underpinnings of regional productivity growth processes can be revealed by observing the patterns of incremental changes made to a region's existing capabilities, yet little is known about the contribution of labour market dynamism and regional labour mobility to the evolution of regional economies. This paper studies knowledge diffusion through the lense of labour mobility. Movement of employees between regions has the potential to result in knowledge diffusion between regions, especially of non-codifiable, tacit knowledge. We estimate the effect of labour mobility between regions on changes in industrial structures and productivity gaps between regions.

Assessing the Impact of High-speed Rail on Population Growth: the Case of Spain - (EPAINOS Paper)

Mr Daniel Ruiz Palomo¹

¹Universitat Autònoma De Barcelona (uab), l'Hospitalet de Llobregat, Spain

YSS1, G1, August 28, 2025, 11:00 AM - 1:00 PM

Over the past three decades, Spain has built the second largest high-speed rail network in the world, massively reducing travel times across the country. Did the construction of the high-speed rail network contribute to the concentration of population in the main metropolitan areas, or did it contribute to the relocation of residents to outlying regions This paper proposes an empirical methodology to answer this question. To address the endogeneity between growth and route allocation, the paper uses an inconsequential unit approach based on a hypothetical minimum construction cost network. Preliminary results suggest that more exposed regions experienced greater population growth.

Logistics in Transition: The Rise and the Consequences of a Multi-Actor Model in the Pomezia Case Study, Italy

Dr. Fabiano Compagnucci¹, Dr. Alena Myshko¹, Dr Arsène Perrot¹

¹GSSI - Gran Sasso Science Institute, L'Aquila, Italy

G01-O9 Urban, Regional, Territorial and Local Resilience, B5, August 29, 2025, 11:00 AM - 1:00 PM

This work focuses on the recent transitions and structural changes that occurred in the logistics sector in the last two decades and on the effects of these changes at the local level. Starting from an institutional approach, the paper discusses its transformation from a highly fragmented sector characterised by a substantial number of SMEs specialising in basic services to a consolidated and vertically integrated one. While logistics has developed alongside industrial activities for a long time, its transition towards an independent economic sector was affected by various factors, which perform as both barriers and facilitators, such as industrial decline, geopolitical shifts, climate change and sustainability challenges and others.

The increasing entry of multinational companies in national markets (more than in the past) and the expansion of outsourcing and subcontracting have changed the number of intermediate actors and suppliers involved as well as the rules of the competition. The effects of such transformations will be discussed and assessed through the Pomezia-Santa Palomba case study, the only area in central Italy which has increased its specialisation in logistics in the last decade. Situated along the Scandinavian - Mediterranean corridor, the concentration and further development of logistics activities in this area is rooted in the territory's industrial history with diversified manufacturing, and the vicinity to the metropolitan area of Rome. By adopting a mixed methods approach relying on a quantitative analysis based on the ASIA and ORBIS Orbis-Bureau Van Dijk databases (for employees and firms) and qualitative data (from interviews, observations and visual materials), we will describe, from the one hand, how a new actors system has risen and, from the other hand, how the socioeconomic and environmental local dimensions have responded to these changes.

Healthcare Digitalization in Europe: A Cross-Country Analysis of Access Disparities

Dr. Dawid Majcherek¹, Prof Arkadiusz Kowalski, Prof Małgorzata Lewandowska, Prof Desislava Dikova, Prof Scott Hegerty

¹SGH Warsaw School Of Economics, Warsaw, Poland

S56-S1 Digitalization and Inequality: Territorial Disparities and Policy Effectiveness, F1, August 29, 2025, 9:00 AM - 10:30 AM

The digitalization of healthcare presents a significant opportunity to reduce inequalities in access to medical services across the European Union. The rapid adoption of digital health technologies during the COVID-19 pandemic demonstrated their potential to mitigate challenges in healthcare delivery. Building on this momentum, we compiled a dataset for the 27 EU countries using the European Health Interview Survey (EHIS), the Digital Economy and Society Index (DESI), and other Eurostat sources. Applying k-means cluster analysis, we categorized EU countries based on two key dimensions: digitalization levels and disparities in healthcare access. Our findings reveal five distinct clusters, with two clusters experiencing high, two facing moderate, and one showing low levels of unmet medical needs. Notably, only the Nordic countries, Spain, and Cyprus demonstrate high digital readiness. Meanwhile, Western European nations with strong healthcare systems fall into a cluster characterized by moderate levels of both digitalization and unmet need. The majority of EU countries still require substantial investment in digital infrastructure to expand the adoption of digital healthcare solutions among patients and professionals. To enhance equitable healthcare access, policymakers must prioritize initiatives that foster digital health innovations as an essential component of modern healthcare systems.

Dark Waters. The effect of mine openings on water quality in Sub-Saharan Africa

Dr. Ugo Rizzo¹, Mr Giacomo Lupi¹

¹University Of Ferrara, Ferrara, Italy

G14-O2 Left Behind Areas, Insularity, Inner Areas and Border Regions, B4, August 28, 2025, 9:00 AM - 10:30 AM

This study investigates the impact of mine openings in the Sub-Saharan Africa, following the mining boom experience since the Nighties, on the social conditions of local communities near extraction sites. Using satellite imagery and a difference-in-differences approach, we analyse how mineral extraction affects water quality, mainly proxied by turbidity. This research contributes to the existing literature on the environmental consequences of mining, offering new insights into the socio-economic outcomes associated with technological development in a region with immense mineral wealth but lagging improvements in living standards.

Moreover, we hypothesize that changes in water turbidity can serve as an indicator of broader environmental degradation caused by mining activities, providing a valuable tool for environmental monitoring.

What encourages the adoption of autonomous public transport in local areas? - A case study from Japan -

Dr. Tomohide Azami¹, Mrs. Mizuki Sakurai², Prof. Ayako Taniguchi¹, Prof. Kuniaki Sasaki²

¹University of Tsukuba, Tsukuba, Japan, ²Waseda University, Tokyo, Japan

G05-O4 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August
28, 2025, 9:00 AM - 10:30 AM

In developed countries experiencing a decline in population, there is often a shortage of labor, particularly in public transport. This has resulted in significant disparities in activity participation among those residing in local areas. Concurrently, the development of autonomous vehicles is becoming a reality, and it is anticipated that this will address the labor shortage.

A review of the literature on the implementation of autonomous public transport in local areas identified three factors as crucial to its success: social acceptance, the business model, and the designated infrastructure. This study focuses on the first two factors. The first factor, social acceptance, was investigated through a survey on attitudes towards autonomous bus in Hitachi City, Japan, where a level 2 autonomous bus service has been introduced. The survey posed questions to respondents regarding the necessity of human assistance in the event of various problems, such as mechanical failure and human-related issues, for which respondents expressed a desire for immediate human assistance. However, the results of the survey indicated that the respondents' perception of the risks associated with autonomous buses may be mitigated by the provision of more detailed information about these risks.

Another topic of this study is the review of the business model of the autonomous taxi for a demand-responsive transport (DRT). To this end, we surveyed several DRT services in the local area of Japan and analyzed the profitable conditions of autonomous taxis, including various costs such as vehicle cost, fleet ownership, and maintenance cost, in addition to revenue from users. Our results, based on the latest vehicle cost, indicate that there are some cases in which the autonomous DRT will be profitable, including subsidies. The condition is found to depend on the number of users, thus the operation rate. It is anticipated that profitability will be attainable soon, owing to the projected increase in demand for DRT in the local area, concomitant with the ageing demographic of the community.

In conclusion, it is evident that the enhancement of social acceptance can be achieved through effective communication strategies and the promotion of social acceptance, which has the potential to enhance the profitability of autonomous public transport. Consequently, the introduction of autonomous public transport has the potential to facilitate social participation among individuals experiencing challenges in accessing transportation.

The international trade of tilapia: A pilot study of tilapia market in Europe

Dr. Vinicius Ribeiro¹, Dr. Manoel Xavier Pedroza Filho², Hainnan Souza Rocha³

¹Federal Institute Of Education, Science And Technology Of Tocantins (IFTO), Palmas, Brazil,

²Embrapa Fisheries and Aquaculture, Palmas, Brazil, ³Federal University of Tocantins, Palmas, Brazil
G04-O3 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 28, 2025,

9:00 AM - 10:30 AM

World tilapia production has grown significantly over the last decade. In 2024, world production will have exceeded 7 million tons for the first time, which represents an increase of 49% over the last twelve years. This expansion has been driven by strong global demand and advancements in aquaculture technology. In this context, this pilot study aims to investigate the characteristics of tilapia demand in the European market.

The research was principally based on qualitative data gathered through interviews and visits to retailers, wholesalers, and importers in six European countries. Primary sources were complemented with quantitative data collected from official databases as EUMOFA, FAO/Globefish, and FranceAgrimer. Data collection on the field also included the participation in the two largest seafoods fairs in Europe, i.e. CONXEMAR (Vigo/Spain), Seafood Global (Barcelona/Spain).

The results indicate that tilapia is still little known by European consumers, and demand is principally concentrated on ethnic groups. Currently, the European market for tilapia is based principally on the demand of ethnic groups, especially Latins, Arabs, Asians, and Africans. Despite being familiar with part of the population, consumption of tilapia among Europeans is low. The absence of offers in the supermarkets and negative perceptions of consumers concerning the quality of tilapia from China are some of the reasons for the low consumption by the general population.

Since the consumption of tilapia in Europe is directly linked to these ethnic groups, the demand in some countries is concentrated in regions with large populations of immigrants (e.g. Paris region, Lisbon, and Madrid). Price is one of the main determinants of the purchase decision of tilapia consumers in Europe. Since quality is not the main decision factor for consumers, tilapia faces strong competition with other white fish such as pangasius and pollock, whose prices are lower.

Finally, in retail, the tilapia is sold principally in ethnic stores (e.g. Asian shops), and in some countries like France and Spain (two major consumers of tilapia in Europe) it is rare to find it in the supermarkets. The offer in restaurants is scarce and some volumes are sold to food service channels as catering.

The Role of Local Food Systems in fostering sustainable transition in European rural areas

Mr Nassim Chahid^{1,2}, Dr Tristan Berchoux^{1,3}, Dr Paolo Prosperi^{1,2}

¹CIHEAM-IAMM, Montpellier F-34093, France, Montpellier, France, ²MoISA, Univ Montpellier, CIHEAM-IAMM, CIRAD, INRAE, Institut Agro, IRD, Montpellier, France, Montpellier, France,

³TETIS, Univ Montpellier, AgroParisTech, CIRAD, CNRS, INRAE, Montpellier France, Montpellier, France

S55-S2 Taking into Account Diversity to Shape just Rural Futures: Novel Indicators for Resilient and Inclusive Development, Amph 2, August 27, 2025, 2:00 PM - 4:00 PM

This study addresses the critical need for sustainable food system transitions in rural areas of the EU by developing an analytical framework that assesses food system dynamics at the local level. Recognising the diversity of local food systems and the diverse contributions of farm size and supply chains, the study adopts a multidisciplinary and systemic approach. The framework integrates key elements at different scales, including agricultural production systems, food supply chains and consumption, food environments and spatial organization. Indicators are selected on the base of literature reviews and data availability at European and French levels, allowing for the identification of distinct types of food systems, from small-scale systems to agro-industrial and alternative/niche systems.

The framework highlights the importance of understanding the drivers of food system transitions and managing feedback loops and trade-offs to ensure effective and sustainable policy interventions. This comprehensive approach combines quantitative analysis, such as cluster analysis to develop food system typologies, with qualitative information from stakeholder interviews and expert validation using a Delphi approach.

The study aims to develop a clearer view of the diversity of local food systems in EU regions, enabling the development of decentralised and effective policy measures to improve access to food, promote healthier consumption patterns and enhance food security, particularly for vulnerable populations. By proposing a new analytical framework based on theoretical and empirical approaches, this research contributes to informed and evidence-based decision-making for sustainable food system transitions in European rural areas. The results will support EU policies and programmes to address rural challenges by identifying key policy levers adapted to specific types of food systems and transition pathways.

Shopping centres in the era of omnichannel

Prof. Małgorzata Twardzik¹, Phd Anita Szuszkiewicz¹

¹Warsaw School Of Economics, Warszawa, Poland

S28 Declining Resilience of Shopping Centres Effects in the European Urban Space, D12, August 29,
2025, 2:00 PM - 4:00 PM

In today's fast-paced world, consumers are no longer confined to a single shopping channel. The rise of digital technology and changing consumer preferences have given birth to a new era in retail: omnichannel shopping. The last decade has seen many key changes in retail trends and the mindset towards physical shopping. And although the share of e-commerce in retail sales has stabilised at just over 8%, shopping centres that used to be a dominant retail market format encountered competition from retail parks, which forced them to redefine their use.

The retail sector has endured a period of sustained pressure, firstly through the growth of e-commerce and the rise of omnichannel retailing. Although the sector demonstrated great resilience in adapting to new conditions, it is simultaneously facing cyclical headwinds of high inflation, interest rates and service charges. Other significant challenges include the need to boost customer loyalty in an increasingly competitive environment and mounting ESG pressure.

More than 10 years ago, in 2010, retail growth centred around the expansion of e-commerce as out-of-town shopping centres and discount chains were booming and pop-up stores emerged on the market as a brand new format. Meanwhile, top trends in 2024 are that retail is more than 'shops' - it involves creating community destinations, health and wellbeing zones. At the same time, consumers' attachment to physical shopping is shifting retailers' focus towards new solutions to deliver a positive shopping experience to attract customers.

Shopping centres should offer more than just points of sale. A diverse and broad tenant-mix and an appropriate food and entertainment offering and choice of other services are key to positioning centres as community destinations. In the era of omnichannel, consumers have a myriad ways to shop, customer loyalty is an increasing challenge for shopping centres.

Placemaking should be a core part of shopping centre management. In addition to a financial aspect, building an appropriate marketing strategy and communication with customers is one of key priorities. Shopping centres that create positive retail and leisure experiences and offer relaxation, entertainment, education and interaction zones will gain repeat customers.

The empirics of the tourism-economic growth nexus: How does tourism specialization affect regional growth paths?

Dr. David Boto¹, Dr. Roberto Balado¹, Dr. Jose Baños¹, Dr. Matías Mayor¹

¹Universidad de Oviedo, Oviedo, Spain

G15-O3 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness,
Quality of Life, B6, August 29, 2025, 9:00 AM - 10:30 AM

This paper examines the link between tourism specialization and regional growth rates. Based on macroeconomic growth theory, we use a Bartik instrument to correct for the plausible endogeneity of tourism intensity on GDPpc growth rates. Utilizing data for Spanish provinces in the 2002-2018 period, we find that tourism positively affects regional economic growth. Relevant heterogeneity is nonetheless found depending on the degree of tourism development and specialization in the international segment. We also show that tourism specialization increases employment rates and both the private and public capital stock per capita but negatively affects human capital per worker.

The Impact of Zoning Easing on Property Prices: The Case of São Paulo's Operações Urbanas

Mr Gabriel Batista¹

¹Universidade de São Paulo (USP), São Paulo, Brazil

G22-O6 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, G2, August 29, 2025, 2:00 PM - 4:00 PM

Zoning laws are one of the most common policies in urban planning. In São Paulo, significant restrictions apply to most regions, particularly regarding building height and floor area. However, the municipality developed the Operações Urbanas (Urban Operations – OUs), which aim to (i) ease these restrictions in certain areas by selling building permits beyond the limits in exchange for (ii) investments in local improvements and infrastructure. The literature suggests that (i) could decrease property prices due to an increase in supply, while (ii) could raise them by enhancing local amenities. The net effect, however, could go in either direction.

Using a database of transacted properties provided by the municipality of São Paulo, this study employs a hedonic price model—with spatial correlation extensions—to measure the overall impact of OUs on property prices in affected regions. Results show mixed effects: properties in wealthier, more expensive areas experience a price boost, indicating that local improvements played a more significant role, while those in less developed regions see either no significant change or a decline, suggesting that the increase in local supply had a greater impact.

Rural Realities: Exploring Life Satisfaction Across Diverse Rural Environments

Dr Jonathan Hopkins¹, Dr. Gundi Knies², Ms Luise Koeppen¹

¹James Hutton Institute, Dundee, Scotland, ²Thünen-Institute of Rural Studies, Braunschweig, Germany

S32 Subjective Well-Being and Geographies of Discontent in Rural Europe: Quantitative Insights from Survey and Spatial Data, Amph 2, August 27, 2025, 4:30 PM - 6:30 PM

This empirical research investigates the relationship between life satisfaction and residence in different types of rural areas taking advantage of the extensive potential for small-scale geographical data linkages afforded by a nationally representative household panel survey for the United Kingdom (Understanding Society: The UK Household Longitudinal Study). Specifically, we explore whether individuals residing in various rural contexts report differing levels of life satisfaction, controlling for a wide range of individual, household and neighbourhood-level information. To achieve this, we employ a comprehensive set of geographic and socio-economic variables, including the detailed Office for National Statistics Rural-Urban Classification 2011 and Eurostat's new Degree of Urbanisation Level 2. In addition to these mainly population count-based measures of rurality we employ socio-demographic classifications of areas: deprivation scores and CACI's Acorn typology. By examining these factors, we aim to identify potential patterns and disparities in life satisfaction; highlight the environmental and place-based characteristics of rural areas which are most influential on life satisfaction; and inform the construction of a new European typology of rural areas (developed in the Horizon Europe project GRANULAR [<https://www.ruralgranular.eu/>]). Our findings contribute to a better understanding of how rural living, in its various forms, impacts overall life satisfaction, with implications for policy and rural development.

Subjective Wellbeing in Rural and Urban Contexts: Is there a rural wellbeing advantage in Europe - A Systematic Review

Dr. Gundi Knies¹

¹Thuenen-institute Of Rural Studies, Braunschweig, Germany

S32 Subjective Well-Being and Geographies of Discontent in Rural Europe: Quantitative Insights from Survey and Spatial Data, Amph 2, August 27, 2025, 4:30 PM - 6:30 PM

Subjective wellbeing (SWB) has become a central concern in social science research, reflecting both individual experiences and broader societal inequalities. While much of the empirical literature has focused on individual and household determinants of SWB, an emerging body of research highlights the influence of social and environmental factors, such as neighbourhood deprivation, green spaces, and air quality. Notably, recent studies have examined how SWB varies between rural and urban areas, revealing a counterintuitive "urban happiness paradox": despite greater economic opportunities and services, urban populations seem to report lower happiness levels than their rural counterparts. This paradox raises fundamental questions about the socio-ecological factors shaping wellbeing across different living environments.

This systematic literature review synthesizes empirical research on rural-urban differences in SWB, with a particular focus on Europe. To be included in the systematic review each article had to meet all of the following inclusion criteria: Quantitative empirical analysis, focused on the general population (or specific subpopulations: age groups, males or females, countries or regions), published in English or German, full-texts available. Out of 7,940 initially identified papers, 443 studies passed the initial title and abstract screening process and after narrowing down the sample to studies since 2000 and Europe, 96 studies fulfilled the final eligibility criteria (i.e., they were published after 1999, focus on a global individual subjective wellbeing measure in a general population in rural (and urban) Europe). We address key questions: (1) How is SWB measured, and do findings differ based on measurement approach? (2) How are rural and urban areas defined, and does this influence results? (3) Is there a consistent rural wellbeing advantage, and how does it vary across different types of rural areas? (4) Which geospatial characteristics are most strongly associated with SWB in rural settings?

In addition to identifying a lack of findings on rural wellbeing in individual Eastern European countries such as Bulgaria and Romania, our findings highlight sizeable heterogeneity in how rurality and SWB are operationalized across studies, with implications for understanding spatial wellbeing disparities.

Green(ing) Foreign Direct Investment, Public Policy and Sustainable Regional Development

Prof. Riccardo Crescenzi¹, Juan Alvarez-Vilanova¹, Dr Marco Di Cataldo²

¹London School of Economics, London, United Kingdom, ²Universita' Ca' Foscari, Venice, Italy

S38-S4 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),

E14, August 28, 2025, 9:00 AM - 10:30 AM

As the world transitions to net-zero emissions, goods and services are increasingly incorporating green attributes. Achieving this shift requires new and diverse technologies and processes to deliver sustainable products from conception to end use (and beyond). Securing the capital, skills, and knowledge for this green transition is one of the greatest challenges of our time, particularly in less dynamic countries and regions. Foreign Direct Investment (FDI) can play a pivotal role in catalysing the green transition in host economies, yet the existing literature still lacks a clear understanding of 'green' FDI and how it responds to public policy.

This paper offers preliminary insights into these questions by using state-of-the-art Large Language Model (LLM) methods to identify green FDI beyond traditional sector-based definitions, providing a more nuanced view of the green transformation taking place across various industries and geographies in Europe. These emerging trends and patterns are then linked to the role of public policies by examining how national and regional authorities attract green FDI through an innovative survey.

By combining data on green FDI flows with information on the presence and timing of green FDI priority initiatives from 170 Investment Promotion Agencies (IPAs) across Europe, we investigate the effectiveness of targeted and selective policy efforts in bringing green capital, skills, and knowledge to regions, thereby supporting the green transition on the ground.

Empirical Evaluation of Technologies Enhancing Heatwave Resilience: Adaptive and Vulnerability Reduction Capacities for Ex-Ante and Ex-Post Damage Mitigation

Ms Soojeong Kang, Mr HwuiKwon Ahn¹, Mr Yewon Choi, Mr DongHwui Kim, Prof. Donghwan Ahn, Prof. Kwansoo Kim

¹Seoul National University, Seoul, South Korea

G01-O6 Urban, Regional, Territorial and Local Resilience, B4, August 28, 2025, 4:30 PM - 6:30 PM

One of the major impacts of climate change is the increasing frequency and intensity of extreme weather events. Among these, heatwaves have become particularly severe, leading to rising economic losses, infrastructure malfunctions, and even human casualties. Although policies to enhance climate resilience have been widely recognized as essential adaptive strategies, there remains a lack of empirical evaluation of effectiveness in resilience terms. This study aims to develop an empirical model capable of estimating the policy effects on heatwave-induced damage costs, thereby offering critical information to policymakers in selecting region- and time-specific interventions. We constructed a panel dataset by integrating regional heatwave disaster records, economic loss data, and climate adaptive technologies across municipalities in South Korea. Using a structural equation modeling approach, we estimate how vulnerability reduction and adaptive capacities affect ex-ante and ex-post damages. Preliminary results indicate that regions with stronger vulnerability reduction capacities tend to experience significantly lower damage, underscoring the effectiveness of resilience-oriented policies. Furthermore, proactive adaptation measures yield greater economic benefits and are more effective at reducing damage uncertainty compared to reactive post-disaster responses. By quantifying the reduced losses attributed to climate resilience, this study provides empirical evidence to support the optimal targeting of disaster risk management strategies. Our approach contributes to the climate adaptive literature by presenting a novel empirical model that incorporates both observable ex-post and latent ex-ante damage components. The findings highlight the importance of data-driven resilience strategies and offer practical implications for decision-makers addressing extreme heat events.

Addressing Rural Aging in Korea: Sustainable Approaches to Agricultural Management from the Perspective of Agricultural Mechanization

Mr Seonghyeon Park¹

¹Seoul National University, Seoul, South Korea

G12-O3 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 28, 2025, 9:00 AM - 10:30 AM

South Korea's agricultural sector is facing a dual crisis: intensified external competition resulting from Free Trade Agreements (FTAs) and internal structural challenges such as rural depopulation, aging, and the feminization of agriculture. These issues have led to severe labor shortages and declining agricultural productivity. In response, the Korean government has promoted farm mechanization as a strategic solution, with local governments implementing specific policies such as agricultural machinery rental programs.

This study empirically investigates the effectiveness of farm mechanization and its associated policies as a sustainable response strategy. Using data from nine provinces between 2010 and 2023, we analyze the impact of farm mechanization on total agricultural output. The analysis employs a Generalized Least Squares (GLS) regression model, controlling for key production inputs and demographic variables.

The results show a statistically significant positive relationship between farm mechanization and agricultural productivity, indicating that mechanization contributes to enhanced output. Interaction analysis further reveals that farm mechanization positively affects productivity among the elderly farming population, while it tends to negatively impact productivity among female farmers.

These findings empirically support the role of farm mechanization as a key strategy for sustainable rural development in South Korea and offer important implications for future policy design and improvement.

Fiscal Imbalances in Colombia: A Long-Term Perspective

Dr. Jaime Bonet¹, Dr. Javier Pérez, Dr. Diana Ricciulli

¹Banco De La República, Cartagena, Colombia

G21-O2 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 27, 2025,
4:30 PM - 6:30 PM

This paper examines the persistence of horizontal and vertical fiscal imbalances in Colombian municipalities during the period 1920–2020. Using a unique dataset constructed from diverse historical records, we develop long-run, consistent, high-frequency series of municipal revenues and expenditures. We first document the evolution of regional fiscal imbalances—both horizontal, across municipalities, and vertical, within the fiscal hierarchy—and study their persistence using sigma- and beta-convergence estimates as well as rank-rank correlations. Colombian municipalities experienced an important divergence in revenues and expenditures starting in the 1940s, driven primarily by the growth in direct forms of taxation. Although the deepening of decentralization in the early 1990s contributed to correcting vertical fiscal imbalances, horizontal inequalities persist. In a second section, we delve into the factors that explain why certain municipalities achieved higher levels of tax revenue and public expenditure relative to their initial conditions. By correlating various historical municipal characteristics with the growth in per capita taxes and expenditures over a century, our findings highlight the critical role of initial conditions in shaping fiscal trajectories. This study contributes to the literature on fiscal federalism and regional development by providing new insights into the long-term determinants of fiscal performance in a developing country context. Moreover, studying fiscal convergence is key to understanding the persistence of spatial inequality, since tax revenues represent a good proxy for wealth in the absence of historical measures of wealth at the local level.

Japanese Firms' FDI into Poland: An Firm-Level Data Analysis

Dr. Kiyoshi Matsubara¹

¹Nihon University, Tokyo, Japan

G04-O1 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 27, 2025,
11:00 AM - 1:00 PM

In this study, firm-level data of Japanese companies operating in foreign countries in years 2010, 15, 19 to 22 are examined. This study focuses on behaviors of Japanese firms that had performed FDI into Poland, which has been the gateway of FDI in Central and Eastern European countries. The dataset used in this study consists of following characteristics of affiliates of Japanese firms in Poland and other countries: establishment year, capital, ownership ratios (Japanese and local), number of employees, and revenue. The dataset also has information of Japanese parent companies as well. The tentative results are as follows. (1) Machinery industries (general, electrical, and transportation) and wholesale industries of those products have many affiliates in Poland. Besides these industries, some related industries such as rubber products, fabricated metal, and warehouse/logistics also have many affiliates. (2) On average, establishment years of affiliates in manufacturing and wholesale industries are older than those in service industries. Especially, many of wholesale affiliates were established in either the 1990s or the 2000s, a bit earlier than manufacturing affiliates. (3) On average, values of capital of affiliates in manufacturing industries are larger than those in wholesale and service industries. Also, within-sector variations are large for all three sectors. (4) On average, the ownership ratios of Japanese parent companies are highest in manufacturing industries. On the other hand, for most industries, the ownership ratios of local parent companies are zero, which implies that joint ventures of Japanese and local companies are not common in Poland. (5) There are large within-sector variations in both number of employees and revenue, although the numbers are not available in many industries in the dataset. The next step of this study is to examine the data of (Japanese) parent companies and to investigate how the characteristics of the parent companies affect those of their affiliates in Poland (in what other countries they have affiliates, for instance). Also, comparing the characteristics of affiliates in Poland with those in Asian countries where many Japanese firms have performed FDI may give a useful insight to this study, especially from the point of view of U.S.-China trade war intensifying since 2018.

Adaptive governance models for the management of climate change scenarios. Case Study Sumapaz, Colombia

Ms Liliana Florez¹

¹Universidad Jorge Tadeo Lozano, Bogotá, Colombia

G08-O1 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, Amphitheater I -
SAKIS KARAGIORGAS, August 27, 2025, 11:00 AM - 1:00 PM

This paper presents the first stage of the doctoral research: Adaptive governance models for the management of climate change scenarios in Sumapaz (Colombia): an approach from the theory of Transition Design. The objective of the thesis is to analyse, in the context of climate change scenarios, the governance processes in the management of the territory of communities living in urban fringe areas, in order to propose new models of adaptive governance that lead to new approaches in the resolution of conflicts related to adaptation and improvement of public policies in the field of climate crisis. The purpose of this paper is to reflect on the relationship between the Sumapaz area, taken as a case study, and the territorial struggles developed over the last 50 years in defence of the territory. The methodological approach is made up of two phases: the first phase presents a reflection on the territorial struggles in defence of the territory in the Sumapaz area, a rural locality to the south of the capital of Colombia, Bogotá, an area where the Blanco and Sumapaz rivers originate, and which is home to one of the largest water reserves in Colombia, currently facing the effects of the climate crisis. The second phase relates a theoretical framework of the relationships between design and the climate crisis, showing how the evolution of design and the emergence of new concepts are contributing to the search for solutions to the climate crisis. As expected results, an analysis will be presented in the light of Transition Design, exploring the connections between academic knowledge, community knowledge and experiential knowledge in the Sumapaz case study.

Approach to the analysis of the climate crisis from the perspective of Transition Design. Case study Sumapaz, Colombia.

Ms Liliana Florez¹

¹Universidad Jorge Tadeo Lozano, Bogotá, Colombia

G08-O5 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, A1, August 29, 2025, 11:00 AM - 1:00 PM

The purpose of this paper is to share the progress of the first phase of the doctoral research: Adaptive governance models for the management of climate change scenarios in the locality of Sumapaz, Bogotá, Colombia. The hypothesis of the research is that the resolution of conflicts linked to climate change scenarios and the strengthening of ecosystem services in urban edge areas require holistic solutions. Transition Design, which contains in itself social innovation, the creation of nature-based solutions, and the recognition of the local knowledge of the community, has the potential to create new collaborations and unexpected combinations between the diverse actors of the territory that contribute to strengthening the participatory capacities of the community, allowing to address conflicts linked to the climate crisis. The research question is related to the need to contribute to strengthening the participatory capacities of organised environmental communities living in urban fringe areas in order to overcome socio-spatial inequalities linked to conflict scenarios associated with the effects of the climate crisis. The general objective is to analyse, in the context of climate change scenarios, governance processes in the management of the territory of communities living in urban fringe areas, in order to propose new models of adaptive governance that lead to new approaches to conflict resolution in the perspective of adaptation and improvement of public policies related to the climate crisis.

Towards a Sustainable Future: Assessing Third Mission Activities of a Hungarian University

Ms Nora Maria Halmai¹, Professor Márta Konczos Szombathelyi¹, Dr. Mónika Rajcsányi-Molnár²

¹Széchenyi István University, Dunaújváros, Hungary, ²University of Dunaújváros, Dunaújváros, Hungary

G24-O1 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 27, 2025, 4:30 PM - 6:30 PM

The study aims to reveal the methodology for evaluating the third mission of higher education institutions concerning the regional economic impact of universities with an ecosystem focus. The relevance of this research is justified by the increasing emphasis on third mission activities within Hungarian higher education, as evidenced by their growing presence in both state funding allocations and institutional accreditation criteria.

Although several studies have evaluated individual dimensions of the third mission independently, there is little agreement on a set of indicators to assess quality in universities' third mission activities. The third mission and social engagement and responsibility are key factors for the sustainable future of higher education.

The third mission of universities has become increasingly important. Although traditional teaching and research missions are well-monitored, evaluating third mission activities presents challenges, leading to the development of various models, including patent-focused and collaborative ecosystem approaches. The inclusion of knowledge transfer indicators in efficiency analyses reveals that their impact varies among universities, influenced by factors such as subject mix, mission focus, and the types of third mission activities. Quantifying the economic impact of third mission activities presents several challenges, including defining impact, avoiding double-counting, estimating multiplier effects, and measuring diverse activities. Despite these difficulties, developing comprehensive evaluation frameworks for third mission activities is crucial for assessing universities' overall performance and societal contributions.

Utilizing the Intellectual Capital framework, this study focuses on measuring and evaluating the third mission activities of a Hungarian university. The evaluation covers the integration of third mission goals within the strategic documents of the examined university, as well as the effectiveness of the implementation of these established goals.

The document analysis is aimed at examining the strategic system formulated for the third mission at a Hungarian university and the associated indicators. The hypothesis is that, based on the selected framework, the applied indicator system and the defined indicators are suitable for assessing third mission activities. In this way, the indicator system can serve as model of good practice.

Future research could focus on examining the indicator system based on other models and frameworks.

The Impact of E-Commerce Development on Regional Economies

Prof. Yoshifumi Ishikawa¹

¹Nanzan University, Nagoya, Japan

G06-O3 Space and Digital Transformation, A1, August 29, 2025, 9:00 AM - 10:30 AM

The advancement of electronic commerce, including online purchases through the internet, is astounding. Especially during the COVID-19 pandemic, there has been a significant increase in both the per-household expenditure on internet-related activities and the proportion of households making purchases through the internet, leading to a substantial expansion of the market size. Historically, local governments have aimed to boost intra-regional consumption by promoting commercial development within their areas, as the presence of large-scale retail stores in neighboring regions would result in consumption leakage. However, in the case of e-commerce, consumers may exhibit behavior driven by factors that are distinct from those influencing traditional store selection.

In the case of e-commerce, where distance resistance is virtually absent, the potential for significant spatial disparity between consumption destinations and supply sources emerges. Consequently, this study delves into the determinants of purchase rates within e-commerce. The analysis indicates that factors such as the scale of retail store locations within the region, the age-specific population distribution, proximity to adjacent municipalities, and the degree of urbanization have an impact on purchase rates driven by e-commerce activities within the region.

As consumer participation in e-commerce grows, it leads to a decrease in local purchase rates. This reduction in local purchase rates further affects regional circulation through the interconnected structures of industrial relationships and income consumption. In this study, the authors incorporate variations in intra-regional consumption rates into a small-region-level income-consumption endogenous interregional input-output model developed by the authors, enabling an analysis of the impact of the advancement of e-commerce on the regional economy.

The Impact of Smart Farming on Agricultural Income and Regional Disparities: Application of Multilevel and GWR Models

Mr Kyungjae Lee¹, Prof Jonghoon Park¹, Prof Seongwoo Lee¹

¹Seoul National University, Seoul, South Korea

G12-O1 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 27, 2025, 11:00 AM - 1:00 PM

The decline in the farming population and the aging of the agricultural labor force in South Korea have highlighted the limitations of conventional agriculture. In response, the adoption of smart farming has gained attention as a means to enhance productivity and establish a sustainable agricultural model. However, the adoption of smart farming is not evenly distributed across the country, exhibiting significant regional disparities. This study aims to analyze the effect of smart farming adoption on agricultural income and regional disparities in adoption. Using data from the 2020 Agricultural Census, this study employs multilevel linear and logit models to estimate agricultural income and the probability of smart farming adoption at the primary local government level. The estimated standardized values computed from the multilevel models serve as key variables in the subsequent Geographically Weighted Regression (GWR) analysis, in which standardized agricultural income is used as the dependent variable while controlling for the probability of smart farming adoption and other regional characteristics. The results indicate that smart farming adoption has a positive effect on agricultural income, yet the magnitude of this effect varies significantly across local governments. Notably, northern Gyeonggi Province and parts of Gangwon Province exhibit stronger effects, suggesting that regional characteristics play a crucial role in shaping the economic impact of smart farming. In addition, a discrepancy exists between the estimated coefficient for the actual smart farming adoption probability and that for the standardized farms. This discrepancy suggests that while smart farming has the potential to significantly enhance income in these regions, structural and institutional constraints may be limiting its broader economic impact. These findings underscore the need for policies that not only encourage adoption but also strengthen the underlying conditions to enhance the economic benefits of smart farming for local governments.

heterogeneous effects of career continuity on childbirth across household economic conditions

Dr. Sangwon Choi¹, Dr. Soyeon Kim¹, Dr. Brian Kim¹

¹Seoul National University, Seoul, South Korea

G07-O1 Spatial Attributes of (de)Population, Ageing, Loneliness and Demographics, A4, August 27,
2025, 2:00 PM - 4:00 PM

Married women's career continuity supports higher fertility rates by enhancing household economic stability for childbearing and childrearing. However, the impact of career continuity on fertility is likely to vary with household economic factors, such as income, housing status, and debt levels. Analyzing this heterogeneity can inform policies that amplify the positive influence of career continuity on childbirth. To explore these dynamics, this study applies causal forests to examine how post-marital career continuity affects first childbirth within Korean households facing ultra-low fertility rates. Results indicate that married women's career continuity positively influences the likelihood of first childbirth, with a notably stronger effect in households with lower incomes, renter status, and higher debt levels. These findings contribute a new perspective on the relationship between women's career continuity and fertility, highlighting the potential for targeted policy approaches to support increased fertility rates.

On Relationship between Pedestrian Movement and Walking Space

Ms Chika Ichimiya¹, Mr Kazunari Tanaka

¹Osaka Institute of Technology, Osaka, Japan, ²Osaka Institute of Technology, Osaka, Japan

G25-O1 Enriching Research and Policy Methods in Regional Science: Digital Tools, Artificial Intelligence, Participatory Methods, Mapping Techniques, Stakeholder Involvement, Amph 3, August 27, 2025, 11:00 AM - 1:00 PM

In Japan, there has been a noticeable increase in urban migration following the COVID-19 Pandemic. The concentration of people in metropolitan areas has revitalized local activities, bringing life back to the streets. However, this concentration of people significantly impacts pedestrian movement and influences the surrounding urban spaces. Additionally, with the increasing likelihood of seismic events, it is crucial to understand pedestrian movement for effective evacuation planning. Furthermore, the rise in cycling due to factors such as aging populations and tourism has contributed to a higher incidence of pedestrian-cyclist collisions, particularly on sidewalks. This trend underscores the importance of addressing pedestrian-cyclist coexistence in urban planning.

The primary objective of this study is to visualize the impact of pedestrian movement on other modes of transportation, as an essential consideration in the design of safe and comfortable urban spaces.

During peak times, pedestrians often exhibit movements distinct from their actions when alone, resulting in more complex patterns of movement within crowded public spaces. This phenomenon, referred to as "small-scale crowd flow," has the potential to increase the risk of accidents, particularly as pedestrians inadvertently encroach on bicycle lanes.

The study focuses on the analysis of small-scale crowd flow, specifically examining pedestrian movement through the extraction of coordinates. The results indicated that as pedestrian density increased, movement patterns became linear, while lower densities led to a dispersal of pedestrians. This suggests that spatial density plays a significant role in shaping pedestrian movement. At densities exceeding 0.6, it was observed that pedestrians tended to alter their paths to circumvent one another, further emphasizing the relationship between pedestrian density and movement patterns. We report differences in the shape of pedestrian space and their movements in urban spaces.

The analysis of income inequalities in Mayotte

Dr. Francois Hermet¹

¹UNIVERSITE DE LA REUNION / CEMOI, Saint-Denis de La Reunion, France

G11-O1 Public Policy Assessment: Inclusiveness and Poverty Alleviation Across Space; Equality in Opportunities and Territorial Justice, A4, August 28, 2025, 4:30 PM - 6:30 PM

As the 101st French department since 2011, and the 9th Outermost Region of the European Union since 2014, Mayotte continues to experience significant structural economic and social delays compared to the national and European averages. The local economy is dual in nature, positioned between a developed country and a developing one. On one hand, there is a traditional economy based on subsistence activities such as agriculture, fishing, handicrafts, and livestock farming, following ancestral practices. On the other hand, a more "modern" economy has emerged, driven by increasing public financial transfers since the 1980s. Public spending primarily focuses on infrastructure development (roads, electrification) and education facilities. However, Mayotte remains dependent on external public funding, which remains insufficient for sustainable development. With a median standard of living of €260 per consumption unit, Mayotte remains by far the poorest region in the European Union, with a monetary poverty rate of 77% in 2017, and also the most unequal. In 2017, the S80/S20 ratio—which compares the total income held by the richest 20% to that of the poorest 20%—was over 80 in Mayotte, compared to just 4 in mainland France (Andoux et al., 2020). This extreme figure highlights the extremely low income levels of the most disadvantaged populations, mostly undocumented immigrants from the neighboring Comoros, one of the poorest countries in the world. Mayotte's GDP per capita was four times higher than that of the Comoros in 2019 (€9,700 vs. €2,400). The infant mortality rate in the Comoros also remained extremely high in 2020, at 48.3 per thousand (compared to 9.5 per thousand in Mayotte). This significant development gap largely explains the mass migration of Comorians in irregular situations to Mayotte, most of whom are women. Their fertility behavior has a major impact on Mayotte's population growth, with an average of 6 children per woman, compared to 3.5 for native Mahoran women.

As of January 1, 2024, the population of Mayotte stands at 320,000, with likely more than half being foreign nationals. This figure has doubled over the past 20 years, and three-quarters of the 10,000 annual births come from foreign mothers. Since the departmentalization of Mayotte in 2011, the annual population growth rate has averaged 3.5%, far exceeding that of all other European region. In this unique economic and demographic context, the issue of economic and social inequality is at the heart of discussions on development and public policy in Mayotte.

Contract management of public-private partnership building projects in countries experiencing economic crises: The case of the University of Crete

Dr. Nikolaos Kalyviotis¹, Dr Raquel Langarita²

¹Department of Economics, School of Social Sciences, University of Crete, Rethymno , Greece,

²Department of Economic Analysis, Faculty of Economics and Business, University of Zaragoza, Zaragoza, Spain

G21-O4 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 29, 2025,

11:00 AM - 1:00 PM

Contract management is a complex and multifaceted concept with various approaches and interpretations found in literature. These differences arise from the diverse experiences, attitudes, and viewpoints of managers. A possible way to define successful contract management is ensuring that “contractual obligations are met”, thereby achieving project objectives in terms of cost, time, and quality.

Several researchers have examined public-private partnership projects in countries experiencing economic crises. They all identified that the most critical contractual issues revolve around financial aspects, government policies affecting the projects, economic conditions, and project relationships. Similar risks noticed in developing countries.

This research aims to explore the contract management processes from a financial perspective, in countries affected by economic crises. Thus, the research question is: "What is the management strategy for public-private projects in countries facing economic crises?". The specific objectives of the paper are to identify what information is required for evaluating a public-private partnership project, and to assess contract management strategies. The research explores contract management through the method "networks and cohorts", a qualitative research method used to understand relationships and group dynamics over time. The propose is to evaluate contract allocation and potential bias within the contract.

Winds blowing strong: wind power expansion in Aragon

Mr Álvaro García Riazuelo, Dr Sol Maria Halleck-Vega

¹University of Zaragoza, Zaragoza, Spain

S49 Towards more Resilient and Inclusive Urban Energy Futures, D1, August 27, 2025, 11:00 AM - 1:00 PM

Aragon is one of the largest renewable energy producing regions in Spain and at the European level, consolidating in recent years as a leader in the installation of wind energy.

This paper analyses the development of wind energy in Aragon, among which its stages and potential factors that explain its installation in this territory. Understanding the process of expansion of this technology in space and time is key, given that the lack of land-use planning linked to these infrastructures is leading to a series of territorial conflicts. Understanding the historical evolution of Aragon as an energy producer and multilevel political management will help to understand this disorderly increase in wind energy.

Even more so, looking at the possible installation scenarios to be achieved in the coming years, doubling the current power in a short period. Therefore, this paper links concepts of the new Energy Geography, defining the energy transition process as a spatial-temporal process, all within a framework of a just energy transition.

From the methodological point of view, in addition to reviewing the historical energy evolution of Aragon, both renewable and non-renewable, its energy balances are analysed, as well as the multilevel decision-making between the state, the autonomous community and the municipality vis-à-vis decisions to install wind energy. In addition, spatial techniques such as point pattern analysis and Standard deviation ellipse method are used to analyse how wind energy has been installed based on temporal and geo-referenced data.

The results show that Aragon already produces more electricity, thanks to renewable sources, than it consumes. This makes the autonomous community a net exporter of electricity. The lack of territorial planning and horizontal integration between public administrations at all territorial levels explains this uncontrolled increase. This process has tended to be concentrated in space, and the installation of wind farms is not homogeneous over time. Moreover, this agglomeration pattern, surprisingly, has not changed over time, revealing important spillover effects in the diffusion process of this technology. In short, understanding and characterising the process of installing wind energy as a spatio-temporal process, in which institutions play a relevant role, is key to the formulation of land-use planning policies, in order to meet more just environmental and energy objectives, taking into account the territory, thus minimising the possible conflicts that may arise.

Parliamentary Elections in Bulgaria 2021 - 2024. In Search of a Way Out of the Crisis of Confidence

Dr. Pavlinka Vladimirova¹

¹Sofia University "St. Kliment Ohridski", Sofia, Bulgaria

G18 Voting Patterns, Participation, Discontent, Representation, Euroscepticism, B4, August 29, 2025,
11:00 AM - 1:00 PM

The internal political tradition in Bulgaria is characterized by a certain instability, which has a significant impact on the features of its modern electoral practice. Foreign policy factors also play an important role in the formation of its political system (including the electoral and party system). During the period 1990–2024, 38 national elections of different types were held in Bulgaria: 17 parliamentary, 7 presidential, 9 elections for mayors and municipal councilors and 5 for Bulgarian representatives in the European Parliament. Only from April 2021 to October 2024, 7 elections for the National Assembly were held.

The analysis of the election results shows a preserved electoral territorial structure of the vote, but with a significant contraction of the votes cast for the political parties.

The loss of trust in traditional political parties led to a series of political and parliamentary crises in Bulgarian society, as well as a drastic decrease in voter turnout.

Combined with the frequent holding of elections, in which there are more and more new formations emerging around individual political leaders without a distinct political concept, it led to voters' lack of interest in participating in the electoral process.

Traditional divisions (cleavage) of society are also a factor, which after 2022 were strengthened by external military-political events.

Still, there remains the strong negative about the lack of a motivated policy regarding the internal development of the country. In conditions of deepening depopulation and economic backwardness of a number of provincial areas compared to the capital and big cities, the question of changing the electoral system and electoral zoning remains essential

Regional constraints and challenges in the fish industry: The case of the Greek export sector

Ms. Kadriye Kardelen Güzel^{1,2,3}, Prof. Dimitrios Karkanis¹, Prof. Amélie Bourceret^{2,3}, Prof. Paolo Prospero^{2,3}, Prof. Georgios Kleftodimos^{2,3}

¹Department of Balkan, Slavic and Oriental Studies - University of Macedonia, GR-54636 Thessaloniki, Greece, ²CIHEAM-IAMM, UMR MoISA, F-34093 Montpellier, France, ³MoISA, Univ Montpellier, CIHEAM-IAMM, CIRAD, INRAE, Institut Agro, IRD, Montpellier, France

G04-O5 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 29, 2025,
11:00 AM - 1:00 PM

During the recent years, Greece has been one of the EU members producing the most valuable output in the farmed fished sector. According to the Hellenic Aquaculture Producers Organisation (HAPO) and the Food and Agriculture Organisation (FAO), aquaculture accounts recently for about two-thirds of the domestic fish production, leading to job creation for both permanent and temporary staff. The aim of the present study is to delve into the constraints and challenges related to the expansion prospects of the fish export industry in Greece, by comparing the country's sectoral export pattern with other major fish-exporting EU members. The methodological approach will be mainly based on the structural gravity model analysis, while the period under study will extend from 1995 to 2023, based on data availability. For this purpose, statistical data on Greece's and on several selected EU members' bilateral fish trade with third countries will be employed by the UN COMTRADE dataset. The effect of bilateral differences in productivity will be assessed by using estimates of the revealed comparative advantages by product category for Greece, based on Ricardian trade theory, already available in the UNCTADStat database and based on the 3-digit SITC classification. Other necessary data will derive from the CEPII and the World Bank database. The empirical results are expected to provide useful insights and update economic policies for a growing export sector in the Greek case.

Covid-19, business deregistration and government interventions

Prof. Francesco Perugini¹, Prof Donato Iacobucci¹, Prof Fabio Pieri²

¹Università Politecnica delle Marche, Ancona, Italy, ²Università di Trento, Trento, Italy

G02-O6 Regional Growth Models, Competitiveness, and Convergence, B1, August 29, 2025, 11:00 AM
- 1:00 PM

The Covid-19 pandemic had a significant impact on entrepreneurial activities in many countries. Italy was one of the most affected countries in the European Union. Data shows that there has been a consistent decline in business start-up, but contrary to expectations and to what has been observed in other crisis period, business closure also dropped by 15.1%. This means that compared to the previous year almost 54 thousand firms did not shut down. Data also shows that firm registration has been geographically and sectorally uneven. There are various factors that have been put forward to explain firms' exit during the COVID-19 spread. A relevant role has been played by governments' financial supports. The main aim of this paper is to empirically investigate how firms exit changed following the COVID-19 pandemic in Italy. Results shows a statistically not significant impact of the pandemic and a statistically significant impact of the government intervention on firms deregistration especially in those provinces with a less dynamic entrepreneurial ecosystem.

A Conceptual Framework to Assess the Emergence, Development and Viability of Rural Circular Bioclusters

Dr. Mikael Akimowicz², Dr. Geoffroy Labrousche¹, Guy-Michel Ndayikeje³

¹Université de Toulouse, Toulouse, France, ²Université Toulouse Jean Jaurès, Toulouse, France, ³IEP Toulouse, Toulouse, France

G14-O2 Left Behind Areas, Insularity, Inner Areas and Border Regions, B4, August 28, 2025, 9:00 AM - 10:30 AM

Current environmental challenges call for the replacement of fossil resources with bioresources. Bioclusters – innovation ecosystems centered on bioresource use – provide solutions to achieve both environmental and economic objectives by balancing ecosystem preservation with the economic exploitation of bioresources. The literature on the role of bioclusters in transitions emphasizes the need for specific frameworks that account for their unique characteristics. In this context, the aim of this paper is to present an original conceptual framework for analyzing the emergence, development, and viability of rural circular bioclusters by integrating rural development literature with discussions from circular economy and economic geography. The framework outlines three steps to study bioclusters: identifying the resources that form the biocluster (emergence), examining the activation process of these resources and the network of players (development), and detailing governance for resource allocation that balances commodification with heritage-based preservation (viability).

The Durability of Civic and Cultural Participation: the Effect of Natural Disasters over Measures of Community Resilience

Prof. Marco Modica¹, Prof Maria Giovanna Brandano¹, Dr. Lorenzo Biferale¹

¹GSSI - Gran Sasso Science Institute, L'aquila, Italy

G01-O6 Urban, Regional, Territorial and Local Resilience, B4, August 28, 2025, 4:30 PM - 6:30 PM

With the ever increasing quantity and intensity of extreme natural phenomena, there is a growing need to ensure that communities in vulnerable areas are prepared for the effects of these natural disasters. In the context of disaster studies, research has placed growing interest on the role of a community's social resources in relation to disaster resilience.

As the number of extreme natural events rapidly increases, it becomes increasingly important to better understand the processes that make communities more resilient. As it is well-documented by now that social cohesion and social capital are positively related to recovery rates, what remains to be better investigated is their durability across time, as well as the impact that exogenous disastrous events have on civic participation. In fact, there is by now well documented positive relation between social cohesion and recovery rates in the event of a natural disaster, but less is known about the durability of such social processes across time and even less about their resilience following disastrous events and external shocks. Although some recent studies have investigated the effect of natural disasters on pro-social behaviors, results remain limited and scattered, partly due to the difficulty of conducting causal studies with a pre/post-disaster design.

This paper aims to fill such gaps by exploring the extent to which natural disasters influence civic participation? The paper focuses on England as a case study and on six separate flooding events that hit different areas between 2007 and 2012. Through the analysis of the information collected by the Taking Part Survey (TPS), a continuous governmental survey on individual's cultural and civic participation patterns, the paper adopts a geographic approach by transposing the variable of interest at the level of Local Authority District (LAD) and Unitary Authorities (UA). Focusing on six flooding events in England, the paper adopts a dynamic difference-in-differences (DiD) approach over a ten-year time span (2005-2015). Results show that civic participation is variables positively impacted after a natural disaster.

Central-European Countries resilience to common shocks: The case of multiple floods

Prof. Marco Modica¹, Dr. Giulio Breglia¹, Dr. Davide Di Marcoberardino¹

¹GSSI - Gran Sasso Science Institute, L'aquila, Italy

G08-O2 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, Amphitheater I -
SAKIS KARAGIORGAS, August 27, 2025, 2:00 PM - 4:00 PM

The resilience of Central European countries to recurrent floods has become a critical issue in recent years. This study evaluates the economic impact of repeated flood events in Central European regions between 2013 and 2018, examining key outcome variables. These disasters disrupted local economies with both short- and long-term consequences, yet the factors influencing resilience and recovery remain underexplored.

This paper employs counterfactual methods to estimate the causal effects of these floods by comparing affected regions to similar, unaffected areas. This approach isolates flood-related economic impacts from other confounding factors, offering insights into long-term recovery trajectories. The analysis focuses on Germany, Austria, Poland, the Czech Republic, and Slovakia, considering economic fluctuations over multiple years.

A key aspect of this study is to examine how emergency funds and national borders influence resilience, shaping recovery strategies and contributing to disparities in responses and economic outcomes.. Government interventions, such as EU and national emergency funds, disaster relief initiatives, and cross-border cooperation, may have influenced recovery outcomes. Given the transnational nature of these floods, it is essential to assess whether economic and policy responses of neighboring countries strengthened or weakened resilience.

Findings contribute to the broader discourse on economic resilience in the face of climate-induced disasters. Insights into recovery strategies and border effects have implications for policymakers, suggesting that future resilience efforts should enhance regional cooperation, improve disaster response mechanisms, and optimize emergency funding to mitigate long-term economic consequences.

Empirical Study on Urban Growth Control by Floor Area Ratio Regulation in Japan

Dr. Takahisa Yokoi¹

¹Shokei Gakuin University, Natori, Miyagi, Japan

S22 Taxes, Public Finance and Spatial Development, D12, August 29, 2025, 11:00 AM - 1:00 PM

Local governments in Japan set upper limits on the allowable floor-area-ratio (FAR) with the aim of controlling population growth and externalities. The FAR limit has been treated as a variable in empirical models of real estate prices in Japan. A low-enough value of the maximum acceptable FAR necessitates low building heights, but beyond a certain value it does not have any direct effect on the actual heights of buildings. There are, however, indirect (negative) effects on real estate prices from possible tall buildings in the surroundings. Our hypothesis is that the mechanism by which the FAR control affects real estate prices depends on the relation between the privately determined optimal FAR and the regulatory FAR values. To test this hypothesis, we conduct an empirical research using a real estate transaction price datasets from the Ministry of Land, Infrastructure and Transport. First, each sample is divided into two subsets. In one, the regulation constrains the actual heights. In the other, it does not. The percentage of constrained heights in a municipality reflects the local public policy on population growth. Estimation of spatial econometric models measures strategic interdependence among neighboring municipalities on height regulation. Next, we estimate an optimal FAR function using constrained samples. This estimated function is used to predict the population changes caused by changes in FAR regulation. It also provides a guideline as to whether the FAR limit should be treated as an explanatory factor in models of land price. Finally, we simulate the urban population level without FAR regulations. In other words, we can confirm how much the population concentration in Japanese cities is suppressed by FAR regulation.

Romanian Smart Governance for Smart Cities needs intergovernmental coordination and dissemination of knowledge: good practices from Estonia and Poland

Prof. Laura Iacob¹, Prof. Flavia Lucia Ghencea², Prof. Noemia Bessa Vilela³

¹Spiru Haret University/ RRSA, Constanta, Romania, ²Ovidius University Constanta, Romania, , ,

³Maria Curie-Sklodowska University, Lublin, Poland, ,

G01-O5 Urban, Regional, Territorial and Local Resilience, B5, August 28, 2025, 9:00 AM - 10:30 AM

Since the beginning, the Smart City concept has been mainly associated with the use of information, communication, technology to improve the different areas of city management (mobility, administration, health, education and so on).

This article aims at analyzing the governance related with the implementation of Smart Cities in Romania and to identify if there are any intergovernmental coordination. For smart cities to function efficiently, multiple levels of government (local, regional, national, and even supranational) must align their policies, resources, and technologies. Without coordination, country ends up with fragmented initiatives, redundant infrastructure, and a whole lot of wasted taxpayer money.

Political actors play an integral part in fostering or hindering the success of intergovernmental coordination. Ideally, such coordination allows governmental actors to increase both the effectiveness and legitimacy of public decisions. But, in Romania the consultation procedure and policy advice are formal rather than practical, so the public policies coordination system focused more on procedural dimension of public policy formulation.

Despite Romanian IT&C sector has experienced continuous growth over the last decade, government digitalization failed his target of implementation. Efforts have been made to digitize administrative processes, such as online business registration and digital public service. Romania has introduced open data platforms to improve government transparency and citizen engagement, but the process but the process faced the reluctance of some institutions that were self-financing from the funds accumulated based on access to their information.

Romania must learn from Estonia that created a single, unified e-Government platform, X-Road, that integrates all public services supported by a national AI and cybersecurity framework for digital trust. Poland is ahead because it has a national Smart City strategy and stronger regional cooperation.

Romania lags in funding utilization, while Poland efficiently absorbs EU grants for urban tech projects. Both countries struggle with intergovernmental coordination, but Poland's larger cities actively push smart solutions.

Some suggestions to improve the Romanian governance are: the development of an administrative culture which promotes horizontal cooperation; dissemination of the good practices of a city in implementing a project; the consultation procedure and political advice become a real practice and not just a check-off procedure, based on a systematic dialogue between the actors; a strategic framework for public policies vertically coordinated so that the achievement of the objectives has the support of the necessary resources; mechanisms for mediation and solving the conflicts or the divergences between actors involved; a solid consultation with stakeholders.

Regional Effects of Sectoral Shocks

Dr. Damiaan Persyn¹

¹Thünen Institute, Uni-Göttingen, Göttingen, Germany

G01-10 Urban, Regional, Territorial and Local Resilience, B5, August 29, 2025, 2:00 PM - 4:00 PM

This paper considers how a shock to a specific region and industry propagates both via the supply chain and through space, to neighbouring (or more remote) regions and sectors. We compare the results from different models that have been used for this purpose: traditional input-output analysis (using detailed region-level input-output tables), basic "structural gravity" models with minimalistic general-equilibrium mechanisms, and more novel spatial quantitative models. We highlight the role of assumptions on labour mobility in determining the resilience of regions and sectors in presence of shocks.

Tourism, Education, and Economic Growth: Does Tourism Lead Regions onto a Path of Under-Educated Growth?

Dr. Sauveur Giannoni¹

¹Université De Corse, Corte, France

S24 Educational Inequalities: Exploring Diverging Territorial Patterns, D12, August 28, 2025, 9:00 AM - 10:30 AM

A substantial body of literature demonstrates the positive impact of tourism activity on the economic growth of many countries and regions (Paci and Maroccu 2014, Radić-Matošević et al. 2021). This represents a significant economic opportunity, particularly for less developed regions.

At the same time, the literature has long established the importance of educational attainment in driving economic growth. This article aims to investigate the interactions between tourism, the education level of the population, and the economic growth of regions within the European Union.

More specifically, highly touristic regions often face an issue of under-education among young people. The employment opportunities provided by the tourism sector incentivize a portion of the population to leave the education system prematurely, often without obtaining a diploma.

Thus, while tourism may promote regional economic growth by offering local populations economic opportunities, it may simultaneously contribute to a decline in educational attainment. Ultimately, this raises the question of whether regions that choose to promote tourism as a pillar of their economic development strategy might inadvertently find themselves on a growth trajectory where education plays a diminished role and investment in education is lower.

In this article, we seek to empirically evaluate the following three hypotheses:

- H1: Tourism fosters economic growth in EU regions.
- H2: The positive effect of education on growth is weaker in the most touristic regions.
- H3: Investment in education is lower in the most touristic regions.

To test these hypotheses, we use EUROSTAT education data for NUTS2 regions of the European Union over the period 2012–2023. As this paper is still in progress, the econometric specifications employed may evolve. However, to test hypotheses H1 and H2, we rely on a standard Mankiw-Romer-Weil (1992) specification and a two-way fixed-effects panel model. Hypothesis H3 will be tested using a two-way fixed-effects panel specification, with robustness checks performed via a panel Granger causality test.

Balancing the Clock: How Social and Transport Infrastructure Shape Time Use and Household Consumption

Ms Tatjana Neuhuber¹, Ms Antonia Schneider¹, Dr Anna-Theresa Renner¹

¹Vienna University Of Technology, Vienna, Austria

S86-S2 Rethinking Economic Growth in Regional Science: on New Narratives and Indicators, G4,
August 27, 2025, 4:30 PM - 6:30 PM

The built environment shapes how people allocate their time and the types of goods and services they consume. The “x-minute city” concept has recently gained prominence, advocating for cities where essential infrastructure is accessible within a certain distance, supporting both livability and sustainability. When such infrastructure is not nearby, households may need to travel further or rely on private rather than public options (e.g., healthcare or childcare), affecting both their time use (e.g., by longer travels) and household budgets.

This study aims to understand how accessibility to social and transport infrastructure influences household time use and consumption patterns. Two datasets on Austrian households are used, one capturing time-use and the other consumption patterns. Since these public datasets do not cover the same households, a synthetic matched dataset will be created using a statistical matching (machine learning) technique. Infrastructure accessibility will be analyzed with a comprehensive geocoded database of social infrastructure and travel distances via public transport. To examine the effect of social and transport infrastructure on time use and consumption, a Structural Equation Model (SEM) will be applied, as SEM can handle latent variables, measures indirect effects, and accounts for measurement error, making it superior to OLS for capturing complex relationships.

The study’s findings are important for decision-makers, planners, and academics. The results highlight the link between public social infrastructure and household’s well-being in terms of time and consumption, providing evidence for sustainable social provisioning systems. Additionally, the findings have practical implications for planners advancing the “x-minute city” concept within and beyond urban areas. Lastly, the research promotes an approach to understanding public social infrastructure’s role regarding intra- and inter-household resource allocation, emphasizing potential gender dimensions and regional inequalities.

Up the Smile Curve: What Advantages for European Regions?

Prof. Laura Resmini¹, Dott Vieri Calogero¹, Dott Enrico Bergamini¹

¹Università di Milano Bicocca - DiSEADE, Milano, Italy

S08 Regional Impacts of Global Value Chains Reorganization, E14, August 29, 2025, 2:00 PM - 4:00 PM

The importance of functional upgrading along global value chains (GVCs) has been widely documented in scientific research (Gereffi, 1999). This study explores the potential benefits of functional upgrading for European regions (NUTS2). Regions assume diverse roles within GVCs, ranging from hosting the headquarters of multinational enterprises (MNEs) to serving as production hubs. By analyzing their trajectories along the smile curve, the study investigates how these transitions impact key regional performance indicators, particularly labor productivity and industrial renewal capacity.

Drawing on data from the entire universe of global multinationals in the historical Orbis database (2007–2022) and sectoral information at the NACE 4-digit level, we construct a measure of the global industrial space (Hidalgo et al., 2007). This approach enables the introduction of a novel regional upgrading indicator that leverages the relatedness metric (Hidalgo et al., 2018) to quantify the distance of each NUTS2 region from frontier functions in pre- and post-production activities within GVCs. This methodology facilitates a highly granular analysis of regional dynamics along GVCs, both sectorally and geographically. Among its key contributions, this is the first study to position European regions within GVCs using the complete universe of multinationals and the first to apply the relatedness indicator to trace movements along global value chains. Furthermore, it establishes a direct link between functional upgrading, productivity growth, and industrial renewal, offering valuable insights for policymakers seeking to enhance regional competitiveness in a rapidly evolving global economy.

The interlinkages between economic and demographic patterns in the EU until 2040

Dr. Riccardo Curtale¹, Martijn Stut, Alfredo Alessandrini¹, Christophe Deuster¹, Filipe Batista e Silva¹, Fabrizio Natale¹, Lewis Dijkstra¹

¹European Commission, Ispra, Italy

S03-S2 Drivers and Impacts of Migration: New Insights on the Role of Labour Markets, Demographic Change, Human Capital and Networks, G6, August 29, 2025, 9:00 AM - 10:30 AM

The European Union is experiencing profound demographic shifts. This paper presents an analysis of observed population trends encompassing observations for the period 2000-2022 and projections until 2040 at the NUTS3 level. The projections were obtained by regionalizing the 2021 Ageing Report's demographic projections using the Demography-Economy-Land use interaction (DELi) model, which considers explicitly the interlinkages between demographic and economic dynamics.

Results show that urban regions are expected to increase their populations primarily due to economic opportunities pulling migrants, while intermediate and rural regions are projected to face population decline, with remote rural regions being the most affected. The natural change rate is trending downwards across all regional typologies, while the net migration rate, historically positive in all typologies, is projected to compensate for the natural change only in urban regions. The implications of these demographic changes are far-reaching, affecting labour markets, public service provision, and economic growth. The paper discusses the potential for regional convergence in GDP per capita, particularly in rural regions close to cities, and the challenges posed by changes in the demographic structure, affected by increasing old age dependency ratio and a shrinking working-age population, and the need for adaptation.

Connecting territory and business. How family management and embeddedness impact product innovation in SMEs.

Dr. María del Carmen López Taravilla¹, Dr. Montserrat Manzanque Lizano², Dr. Jesús Fernando Santos Peñalver³, Dr. Julio Dieguez Soto⁴, Dr. Usman Ali⁵, Prof. Elena Merino-Madrid

¹University of Castilla-La Mancha, Cuenca, Spain, ²University of Castilla-La Mancha, Cuenca, Spain, ³University of Castilla-La Mancha, Toledo, Spain, ⁴University of Málaga, Málaga, Spain, ⁵University of Turin, Turin, Italy

G03-O1 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 27, 2025, 11:00 AM
- 1:00 PM

Innovation is crucial for economic growth and regional sustainability, particularly for small and medium-sized enterprises (SMEs), which play a significant role in the global economy (Audretsch et al., 2014). SMEs make up the majority of the business sector in many countries, contributing significantly to employment and economic production (European Commission, 2024). However, they face various barriers to innovation, including limited financial and human capital, and challenges in accessing knowledge networks and collaboration opportunities (Madrid-Guijarro et al., 2009).

The regional context in which SMEs operate influences their innovation potential. Research has shown that firms' relationships with their environment determine their access to information, resources, and collaboration opportunities (Huggins & Thompson, 2013). The concept of embeddedness is particularly important in this regard, as firms' integration into the local community and connections with local actors can either facilitate or hinder growth (Baù et al., 2019). Strong local embeddedness fosters trust and cooperation, which can enhance sustainability and regional cohesion (Basco, 2015). However, excessive embeddedness can limit access to external resources and reduce innovation potential (Camagni, 1991; Grabher, 1993).

This study examines the relationship between embeddedness and product innovation success in SMEs, with a focus on the moderating role of family management. It builds on existing literature on innovation and regional development, as well as research on organizational structure's impact on innovation (De Massis et al., 2012; Pucci et al., 2020).

The empirical analysis focuses on Spanish SMEs, exploring different types of embeddedness, including local and civic, and their effects on product development. The study combines survey data with business database information and employs statistical models to analyze the relationships between embeddedness, family management, and innovation.

This research contributes to understanding the factors that drive product innovation in SMEs, providing insights into how regional context and organizational type influence innovation performance. It also opens avenues for further research on the interaction between internal and external factors in firms' innovation capacity (Chrisman et al., 2015; Labaki & Mustafa, 2023).

How does the local public fiscal composition affect local economic growth? Insights from US cities

Dr. Dylan Jong¹, Prof. Philip McCann, Dr. Viktor Venhorst

¹University of Groningen, Groningen, The Netherlands

S22 Taxes, Public Finance and Spatial Development, D12, August 29, 2025, 11:00 AM - 1:00 PM

This paper examines the economic growth effects of the local public fiscal composition. New data allows for an extensive analysis on the local economic growth effects of over 100 revenue and expenditure categories in United States cities, with a further distinction between capital outlay and current operations expenditures. The data also presents a solution to the local fiscal comparability issue. Furthermore, by focusing on the complete local public fiscal composition of cities, this paper considers the constrained choice set policy makers face. Results show that local public revenues are only distortionary when used to fund non-productive expenditures. When used to fund productive expenditures, increased revenues may enhance economic growth. Relatively productive expenditures are public welfare, highways, utilities, and commercial activities. Unproductive expenditures are public safety, health, parks & recreation, public buildings and interest on general debt.

Measuring Regional Attractiveness in Europe Through Regional Mobility Patterns

Dr. Milad Malekzadeh¹, Dr. Tuomas Väisänen¹, Dr. Anastasia Panori², Dr. Olle Järv¹

¹University Of Helsinki, Helsinki, Finland, ²Aristotle University of Thessaloniki, Thessaloniki, Greece

S16 Changing Patterns Of Spatial Mobility During The Twin Transition, A1, August 27, 2025, 4:30 PM - 6:30 PM

Regional attractiveness plays a crucial role in shaping spatial mobility, economic development, and population dynamics across Europe. Traditional approaches to measuring attractiveness rely on static indicators such as GDP, infrastructure, and amenities, providing an estimate of potential desirability rather than observed attractiveness. This study introduces a behaviorally grounded approach by analyzing realized mobility flows across European NUTS2 regions, incorporating seven distinct types of mobility: permanent migration, long-term and short-term student mobility, seasonal work, long-distance commuting, cross-border commuting, and multilocal living. By leveraging multiple data sources, including Labour Force Survey records, Erasmus mobility data, and Twitter-derived movement patterns, we quantify net migration using two complementary methods: an aggregate normalized net migration index and a Principal Component Analysis (PCA)-based attractiveness index. Our findings consistently highlight urban centers as highly attractive while revealing regional anomalies, particularly in Nordic areas where non-permanent mobility forms, such as seasonal work and multilocal living, dominate. The results underscore the limitations of potential-based attractiveness measures in capturing real-world mobility trends. While potential attractiveness provides insights into a region's structural appeal, realized attractiveness—measured through actual mobility—offers a more dynamic and policy-relevant perspective. These findings have critical implications for regional policymakers, emphasizing the need to integrate mobility data into regional attractiveness assessments. Relying solely on potential indicators can misrepresent a region's true ability to attract people, leading to ineffective policy decisions. By incorporating diverse mobility types, this study provides a robust framework for assessing regional attractiveness and supports a more comprehensive understanding of mobility-driven regional development strategies in Europe.

Centrality in municipal cooperation networks and fiscal resilience

Dr. Dylan Jong¹, Dr. Lisa Sanna Stephan

¹University of Groningen, Groningen, The Netherlands

G21-O2 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 27, 2025,
4:30 PM - 6:30 PM

This paper investigates how centrality within municipality cooperation networks influences fiscal resilience to financial shocks. Using a difference-in-differences (DiD) approach, we analyse the impact of a central position in the cooperation matrix on municipalities' ability to cope with an exogenous fiscal shock: the 2023 reform of the fiscal equalization system in the Netherlands. This reform provides a natural experiment affecting local public revenues, allowing us to explore continuous treatment effects within an econometric framework.

We hypothesize that centrality may mitigate fiscal shocks by (1) indicating advanced networking, management, and strategic planning skills, (2) enabling cost savings and improved efficiency through better access to information, and (3) facilitating support from cooperation partners, reducing the fiscal burden. Conversely, a central position in the cooperation matrix may also mean that municipalities are more likely to be affected by fiscal shocks in the system due to their network centrality, where the municipality may be called out the help others or may fear to be called to help and spend in anticipation.

The analysis examines the fiscal shock's impact on various indicators of fiscal health, including revenue streams and expenditure patterns. Additionally, we investigate the role of centrality in the capitalization of shocks into local house prices, building on evidence that fiscal changes are reflected in property values. We also explore heterogeneous effects across positive and negative shocks and variations by municipal characteristics.

This study contributes to the literature on local public finance by highlighting the complex role of inter-municipal cooperation networks in shaping fiscal resilience and vulnerability to economic disturbances.

The evolution of sustainability in the European Capital of Culture programme: future urban development directions - the case of Veszprém-Balaton2023

Ms Zsuzsanna Kara¹, Professor Márta Konczos Szombathelyi², Professor Gergely Tamás Kucsera³

¹Széchenyi István University, Győr, Hungary, ²Széchenyi István University, Győr, Hungary,

³Széchenyi István University, Győr, Hungary

G15-O3 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness, Quality of Life, B6, August 29, 2025, 9:00 AM - 10:30 AM

Objective and topic

The aim of this study is to explore the evolving role of sustainability in the European Capital of Culture (ECoC) programme, to highlight its transformation from a cultural prestige initiative to a model integrating ecological responsibility. Over nearly four decades, ECoC has shifted from an economic and tourism-driven cultural investment into a framework increasingly focused on sustainable urban transformation. Initially, cities leveraged the title for branding and tourism growth, but post-2010 editions have emphasized ecological consciousness and participatory urban development. This research examines these shifting urban paradigms, focusing on Veszprém-Balaton 2023.

Methods and data

The study employs an interdisciplinary approach, combining different methods (literature review, data analysis, case studies) to assess the sustainability impacts of ECoC programmes. Key focus areas include brownfield revitalization, sustainable mobility, urban ecological participation, and cultural resilience. Case studies demonstrate how former industrial sites can be repurposed into sustainable cultural hubs. Prior analyses of cultural-ecological strategy of Pécs 2010, Guimarães 2012 and Essen/Ruhr 2010 highlight both the potential and challenges of integrating sustainability within ECoC projects.

Results and conclusions

Findings indicate that ECoC programmes are increasingly catalysts for sustainable urban transformation. While earlier editions focused on large-scale infrastructure investments, later projects emphasize ecological impact and cultural participation. Veszprém-Balaton 2023 introduced sustainability initiatives such as the ECoC train ticket, electric bike-sharing, and reusable cup-programme, reducing the city's environmental footprint. The Zero Footprint Zone and community recycling initiatives encouraged citizen participation, while the Barn Programme integrated rural cultural heritage into urban spaces.

From a broader perspective, the shifts in ECoC strategy align with wider European policy trends, including the European Green Deal and UN Sustainable Development Goals (SDGs). Analysis of recent ECoC projects – such as Esch 2022's urban green strategies and Tartu 2024's eco-tourism initiatives – reveals that the programme is increasingly incorporating sustainability indicators into cultural development. However, challenges persist in balancing cultural programming with ecological goals.

Authenticity/Added Value

This study contributes to the discourse on culture-based sustainability by providing a long-term perspective on how ECoC has integrated ecological concerns. By synthesizing historical patterns and contemporary best practices, it offers a framework for sustainable cultural policies, reinforcing the role of cultural events as drivers of ecological urban planning.

Future Research Directions

Further studies could explore the long-term sustainability of ECoC projects, their post-event urban resilience, and the development of standardized sustainability metrics for cultural mega-events, ensuring lasting impact beyond economic and touristic growth.

Evaluating the Impact of Italy's National Recovery and Resilience Plan on Municipal Development and Well-being

Prof Barbara Ermini, Prof Fabio Fiorillo, Dr. Elvina Merkaj¹, Prof Raffaella Santolini

¹Polytechnic University Of Marche, Ancona, Italy

G15-O4 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness,
Quality of Life, B6, August 28, 2025, 4:30 PM - 6:30 PM

Abstract

The National Recovery and Resilience Plan (NRRP) represents a pivotal economic policy instrument within the broader framework of the European Union's Next Generation EU initiative, aimed at fostering economic recovery and resilience across member states. Italy, as the principal recipient of NRRP funds, is at the forefront of leveraging this unprecedented financial support to drive national transformation, reduce structural and regional disparities, and promote inclusive economic growth. By investing in critical services and infrastructure, the Italian government seeks to enhance the well-being of local communities, particularly through direct municipal engagement. Given the extensive public policy implications, a rigorous evaluation of the allocation and impact of NRRP funds is crucial to ensure efficiency, equity, and effectiveness in achieving stated objectives.

Despite the significance of this intervention, a comprehensive impact assessment of NRRP funding remains absent, primarily due to the unavailability of systematic data. To address this gap, this study proposes a methodological framework centered on a survey-based data collection approach targeting municipalities across Italy. The objective is to assess the NRRP's influence on three key dimensions: (a) modernization of public administration, (b) territorial development, and (c) individual well-being. Furthermore, the study will explore the challenges municipalities encounter in implementing NRRP projects, shedding light on administrative, financial, and governance-related constraints that may hinder the effective execution of planned initiatives.

The research employs a mixed-methods approach, integrating quantitative survey data with qualitative insights from municipal stakeholders. This approach will enable a multidimensional evaluation of NRRP's effectiveness in driving structural transformation at the local level. The findings will contribute to the broader policy discourse by providing evidence-based recommendations for optimizing fund allocation, enhancing administrative capacity, and ensuring the long-term sustainability of investments.

In conclusion, this study represents a critical step toward establishing an empirical basis for evaluating large-scale public investment programs such as the NRRP. By systematically assessing its impact on administrative modernization, regional development, and social well-being, the research aims to provide policymakers with actionable insights to enhance governance, improve fund utilization, and maximize the socio-economic benefits of NRRP interventions. This study underscores the necessity for ongoing data-driven evaluations to inform future resilience and recovery strategies within Italy and beyond.

On Method to Construct Hazard Map based on Cognitive Analysis

Prof. Kazunari Tanaka¹

¹Osaka Institute of Technology, Osaka, Japan

G25-O2 Enriching Research and Policy Methods in Regional Science: Digital Tools, Artificial Intelligence, Participatory Methods, Mapping Techniques, Stakeholder Involvement, Amph 3, August 28, 2025, 4:30 PM - 6:30 PM

In many urban areas today, evacuation plans have been formulated to cope with disasters such as earthquakes, tsunamis, and the resulting fires. These are express in hazard maps. In the evacuation hazard map, citizens are encouraged to conduct evacuation exercises in each area. Citizens can cope with disasters by conducting such exercises on a continuous basis. However, there are many people who do not participate in evacuation drills, such as the elderly. Many citizens understand the map but do not actually simulate it. When a disaster occurs, many citizens may be hesitant to evacuate to the evacuation sites set in the map. They may be more willing to evacuate to an evacuation site along a path that they often walk, even if it is a bit far away, than to an evacuation site that is closer but unfamiliar to them. The same is true for neighborhood community groups. For them, a distant but well-known town is more likely to be an evacuation site than a nearby neighborhood. In fact, evacuation hazard maps need to be developed based on an understanding of the cognitive structure of such cities.

In a series of studies, we have so far identified the structure and distortion of cognitive maps. In this report, I present the results of a study of methods for creating hazard maps. The methods examined are based on GIS. Three methods were used: one based on urban spatial components, one based on distances, and one based on areal analysis. The advantages and challenges of the different methods are illustrated for the target area.

Evaluation of Economic Benefits of Recycling and Its Contribution on Circular Economy: Evidence from OECD Waste Data

Ms Juhee Lee¹, Prof. Ilwon Seo¹

¹Chonnam National University, Gwangju, South Korea

G01-10 Urban, Regional, Territorial and Local Resilience, B5, August 29, 2025, 2:00 PM - 4:00 PM

Waste is a cause of resource depletion and economic loss. As a large amount of waste is disposed of through landfills and incineration rather than recycling, it results in environmental pollution.

Most countries still fail to decouple population and economic growth from total waste generation(OECD, 2024). In 2022, a person living in the OECD generated about 531 kg of municipal waste, which means 12 kg less than in 2000, but 34 kg more than in 1990(OECD, 2024). According to the United Nation's International Resource Panel, natural resource extraction and processing contribute to about half of all global greenhouse gas emissions.

As the demand for future resources is expected to continue to increase, circular economy (CE) has been seen as an alternative to linear economy, which extends the use of materials and products as long as possible and reduces the use of natural resources(Ellen MacArthur Foundation, 2016).

37 OECD member countries are among the 196 countries that have agreed to the Paris Agreement, a legally binding international treaty on climate change. (UNFCCC, 1996).

The importance of maximizing the use of material resources has been emphasized to cope with resource depletion and environmental pollution. One study found that recycling waste could reduce greenhouse gas emissions(An, T.H. et al., 2025). Another study found that providing financial incentives for recycling waste could positively motivate recycling behavior(Thøgersen J et al., 2003). Yet, the dark side of the incineration of material resources and its results of the environmental and economic disadvantages has been received little attention. To fill the existing research gaps, this study poses fundamental questions as follows:

- What is the dark side of material resource management?
- How much does incineration of non-recycled materials contribute to increased greenhouse gas emissions?
- Does material recycling can enhance economic and environmental benefits and contribute to a circular economy?

The purpose of this study is to estimate the economic benefits of material recycling by distinguishing two prices, material and environmental in OECD countries and empirically analyzing them using quantitative data.

Total price = Material price + Environmental price (1)

Material price = Raw material price – Recycled material price (2)

Environmental price = Greenhouse gases emission × Carbon price (3)

Merging Two Streams: Measuring Cultural Ecosystem Services with Data from Social Media and Indicators from Survey Results

Dr. Christoph Hauser¹, Dr. Miroslav Despotovic¹

¹University Of Applied Sciences Kufstein, Kufstein, Austria

G16-O1 Statistical And Econometric Methods of Urban and Regional Analysis, G1, August 27, 2025,
11:00 AM - 1:00 PM

Cultural Ecosystem Services (CES) represent non-material benefits that humans derive from natural environments, encompassing aesthetics, recreation, inspiration, and cultural heritage. Traditional CES assessments rely on survey-based approaches, but the rise of user-generated content on social media offers a novel means to quantify CES spatially and temporally. Existing methods used to study landscape values using surveys are naturally ill suited to study dynamic-landscape scale processes. Social media data, by comparison, can be used to indirectly measure and identify valuable features of landscapes at various and arbitrary territorial levels.

This study integrates these two research streams, employing social media data (geotagged photographs from the photo sharing platform Flickr) and landscape metrics identified from survey-based conjoint analysis to measure CES. We replicate the identification of photographs containing CES based on geotagged keywords in the metadata pioneered by Van Zanten et al (2016)¹ for the territories Bundesland Tirol (Austria) and the Autonomous Province of Bozen (Italy). Raster files containing information the count of photographs uploaded on Flickr in the area represent information on the distribution of CES in the two regions.

Survey based investigations by Schirpke et al (2019)² have shown that a restricted number of landscape metrics can be used to explain the dominant variation in landscape preferences for CES in this area. Such metrics include number of patches as measures of landscape fragmentation, patch richness representing landscape diversity and shape complexity indices capturing variations in landscape form. Additional binary indicators (urban, forest, water, road) account for specific landscape characteristics.

By calculating measures for landscape metrics from the Corine database we test their impact on the geographical distribution of CES photographs derived from the Flickr platform based on suitable spatial techniques such as spatial lag and spatial error models. The results provide important information on the suitability of crowd-sourced data from social media sites to locate the incidence of CES in a territory. In addition, the findings inform spatial planning policies and guide nature tourism initiatives.

1 Van Zanten, B. T., Van Berkel, D. B., Meentemeyer, R. K., Smith, J. W., Tieskens, K. F., & Verburg, P. H. (2016). Continental-scale quantification of landscape values using social media data. *Proceedings of the National Academy of Sciences*, 113(46), 12974-12979.

2 Schirpke, U., Tappeiner, G., Tasser, E., & Tappeiner, U. (2019). Using conjoint analysis to gain deeper insights into aesthetic landscape preferences. *Ecological Indicators*, 96, 202-212.

Spatial Inequality in Italian Labour Markets: The Circular Economy Era

Dr. Federico Fantechi¹, Prof. Fabio Mazzola

¹Università Degli Studi Di Palermo, Palermo, Italy

S01-S2 The Spatial, Regional and Urban Dimensions of Circular Economy, Amphitheater II - SAKIS

KARAGIORGAS, August 27, 2025, 2:00 PM - 4:00 PM

This paper examines the Circular Economy (CE) revolution and its potential to impact labour market inequality from a spatial perspective. The CE revolution is an all-encompassing strategy, aiming to restructure the market on both the supply and demand sides. Unlike most green policies, it is pursued with some attention to protect—if not foster—production systems and the competitiveness of territories. On the labour market side, this is expected to create growth and new jobs. However, while the numerical employment impact is forecasted to be positive, literature suggests the risk that most jobs created may be of lower quality and pay compared to those lost, potentially negatively impacting some disadvantaged labour markets. Jobs created within the CE revolution can be very diversified, ranging from labour-intensive ones—such as waste management and collection—to more specialized and knowledge-intensive roles, such as recycle plant workers and machinery repair, which have higher requirements and better salaries.

Overall, the potential local labour market impact of the CE revolution will be heterogeneous. This study hypothesizes that the impact will be unequal, largely depending on localized territorial capital and connected infrastructural endowment. Aiming to understand whether the CE revolution can push the EU's (specifically, focusing on Italian LLM) local labour market towards a convergence pattern or if lagging regions will continue to suffer, the paper explores how infrastructure, place characteristics, labour markets, and cities shape the CE revolution's impact. This is done by employing unique and very detailed data on employment and CE-related infrastructures, showing how the presence of pre-existing characteristics and infrastructures could dramatically change the local labour market impact. The study suggests that a medium- to long-term strategy focused on endowing territories with CE-related infrastructures and competencies could be more successful than one focused solely on supply, demand, and job replacement.

Bridging Research and Rural Realities: Living Labs as a Tool for Data-Driven Decision Making

Dr. Brigida Marovelli¹, Ms Fabiana Stortini¹, Mr Tommaso Trinchetti¹, Dr Michele Moretti¹

¹University Of Pisa, Pisa, Italy

S55-S1 Taking into Account Diversity to Shape just Rural Futures: Novel Indicators for Resilient and Inclusive Development, Amph 2, August 27, 2025, 11:00 AM - 1:00 PM

The Long-Term Vision for Rural Areas (LTVRA) recognises the importance of engaging territories and local actors for addressing rural challenges through active participation and collaboration. Rural territories demand innovative knowledge to effectively capture their complexity and support decision making toward tailored solutions. This paper aims to explore processes and dynamics in the real-world context through seven Living Labs across Europe (France, Italy, Netherlands, Poland, Spain, Sweden, United Kingdom) within the European GRANULAR project. The ambition of GRANULAR is to help understanding the characteristics, dynamics and drivers of rural areas through innovative data and indicators. In this context, the role of Living Labs shifts from the traditional field of product innovation to a more general idea of territorial agencies, for organizing policies and promoting participatory systems of local governance. GRANULAR Living Labs show engagement issues and specificities related to their novel role. They deal with large rural areas and focus not on isolated interventions but on the broader management of the territory. This adds significant complexity, as they address a wide range of issues, including connectivity, tourism, productivity, accessibility, involving diverse private and public actors. The objective of the paper is to explore the activities of the Living Labs to identify the primary barriers they encounter and what strategies they implement to overcome them. This paper will examine the most relevant issues related to three main areas: involvement and inclusion of local actors, communication, and trust, that proved to be crucial to the construction of participatory processes for data-driven decision-making.

Rethinking the territorial responsibility of cooperatives in terms of transitions: a new approach based on the circular economy and cultural and creative innovation

Prof. Maryline Filippi¹

¹Bordeaux Sciences Agro, Inrae-AgroParisTech, Palaiseau, France

S20 Circular Economy and Eco-Innovation in the Cooperative Movement, Amphitheater I - SAKIS

KARAGIORGAS, August 29, 2025, 9:00 AM - 10:30 AM

This proposal contributes to characterising the capacity and originality of non-profit organisations, such as cooperatives, in order to address the issue of transitions that are more environmentally friendly, economically viable and socially equitable. The proposal combines the circular economy with the analysis of proximity in order to better understand and promote the creation of new solutions in the territories (Torre and Gallaud, 2022).

This research is part of a conceptual approach to the potential of local approaches to reshape supply chains, taking into account both sustainability and social aspects. We want to explore how cooperatives can develop innovative practices rooted in their local context using the principles of the circular economy. In what way is the cooperative model likely to contribute to these transitions and, in return, in what way do the needs associated with the requirement for transitions renew the cooperative models of action and the rules on which they are based in their territorial anchoring?

We propose to address the question of new solutions through transitions by hypothesising that a localised circular economy can improve the way organisations rethink their economic model and their responsibility in the local area.

The conceptual framework combines the analysis of proximities and the principles of the circular economy with a subject of study, cooperatives rooted in their territory. The cooperative model is characterised by ownership and decision-making power in the hands of its members, as opposed to investors or shareholder companies (Hansmann, 1996).

The methodology mobilises a literature review using various examples from an ongoing research programme.

The notion of corporate territorial responsibility reinforces the common good in the sense of collective action and value creation. The territorialisation of cooperatives is specific in that it places people at the heart of the action through a process of collective territorialisation and anchoring of enterprises in their territories.

The circular economy contributes to considering all stakeholders in its activities as relevant interlocutors with whom it is necessary to agree in order to achieve a joint, integrated and harmonious approach.

New activities (recycling, remanufacturing, etc.) are needed to integrate well-being and co-construction processes, not only between SSE enterprises and the conventional economy, but also with all stakeholders (local authorities, associations, consumers, etc.).

This contribution thus helps to shed light on how companies combining territorial responsibility and circular economy, as an original and specific high-performance model, strengthen their territorial roots while acting for the common good.

On Influence of Facade Type on the Image of Shopping Street

Ms Ayaka Higashi¹, Professor Kazunari Tanaka²

¹Osaka Institute Of Technology Graduate School of Engineering, Osaka, Japan, ²Osaka Institute Of Technology, Osaka, Japan

G22-O4 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, G6, August 28, 2025, 4:30 PM - 6:30 PM

In recent years, the relaxation of regulations on large stores has led to an increase in suburban large stores, resulting in the hollowing out of city centers and a noticeable decline in shopping streets.

The shopping district was once a bustling center of commerce, but today, vacant stores are conspicuous due to closures caused by a lack of workers and other factors, and attempts to revitalize the area have been slow to produce results.

However, in regional cities, there are examples of revitalization efforts by shopping street associations that have succeeded in revitalizing declining shopping streets, giving them a purpose beyond just shopping, which contrasts with people's expectations for a place.

This study aims to clarify how people perceive the appropriate level of human presence in a particular place, focusing on urban spaces. To achieve this, the study surveyed various residential areas and commercial districts to investigate people's perceptions of the appropriate level of human presence.

As a results, it was found that the uniformity of residential buildings, the presence of shadows on the road surface, and the sense of openness are related to the preference for residential areas.

In addition, this study focused on facade types. I did a questionnaire survey using the photographs by five different facade types and analyzed them using a pairwise comparison method.

The results showed that one and three facade types received almost the same evaluation. On the other hand, four facade types were the least preferred. In contrast to predictions, the results showed that a variety of facade types were not preferred. The relationship was found between the façade type of shopping street and number of pedestrians.

The Greek urban system after 2010 in the frame of the European Union: structures, policies' implementation, resilience

Prof. Minas Angelidis¹

¹School of Architecture, National Technical University of Athens, Athens, Greece

G01-O5 Urban, Regional, Territorial and Local Resilience, B5, August 28, 2025, 9:00 AM - 10:30 AM

The paper discusses the evolution of the Greek urban system and its constituent cities after 2010: during the periods of the Greek economic crisis, the covid-19 pandemic and Ukraine war, in the frame of the European Union (EU) territory. The paper also explores the resilience of this system seen in the frame of the policy of the EU and its strategy towards a Green and Digital future. Emphasis is given to the major cities of the urban system. The paper uses, among other things, data from the 2021 population census, which significantly enhances the evidence of the research work.

Our basic position is that, in the period under review, the Greek urban system was significantly transformed under the influence of exogenous and endogenous economic and social changes and especially of the Community policies for Greece.

Specifically, the following issues are examined: (α) the changes in Greece in the period under review in the context of the evolution of the European Union and its policies for Greece. (b) The evolution of the structure of the national urban system as well as of the structures and the roles of its constituent cities. (c) The specific change of the sectors related to the Greek cities' smart, inclusive and green development (d) The urban system inability to enough support the health system during the Covid-19 pandemic (e) The expected implications of the EU strategy and policies towards recovery and a Green and Digital future to the Greek urban system (f) Proposals for a Greek urban system' strategy and key actions in order to utilize the new policies to upgrade and contribute to the smart, green and inclusive development of the country.

References: Indicatively: (1) National / regional reports and publications on regional and urban development in Greece (2) Ministers for Spatial Planning - EU (2020) Territorial Agenda 2030 - A future for all places. Lisboa, Directorate-General for Territory (DGT) (3) Greek Statistical Authority, Population census 2021

Slow travels and biking to the lake: what is the moderation role of cycling tourism attributes?

Dr. Daniele Crotti¹

¹University of Insubria, Como, Italy

G15-O4 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness,
Quality of Life, B6, August 28, 2025, 4:30 PM - 6:30 PM

Lakes are a precious part of recreational and leisure activities, given the natural heritage they are surrounded by. Lake tourism can be functional-social, aesthetic, symbolic, and cultural, but those dimensions are connected to decisions about transport modes for intra-destination travels. According to slow travelling, unimodal cycling (i.e., using only bike over multiple days) might preserve environments and have an intimate contact with recreational places. In terms of close contact between humans and natural landscapes, is there a positive linkage between unimodal cycling and lake destinations? Are there moderation effects? This is the first study on cycling unimodality in lake tourism. In this research, Italy is used as a long-tradition case study in terms of lake destinations. This paper aspires to contribute to the growing literature on cycling tourists' attitudes, and it focuses on the choice of visiting destinations by using bike only. Primary data from a national survey conducted in 2023 are used. The paper first aims to investigate the direct link between unimodal cycling and lake tourism. To investigate moderators, the role of well-recognized attributes for bike tourism is considered, such as accessibility, attractions, amenities, and complementary services. Control variables include socio-demographics and travel-related factors. Probit response models with interaction terms are used to test the hypothesis of direct and moderated effects. The main finding is that unimodal cycling is positively and directly linked to lake tourism. Yet, we also detected moderation effects of tourism attributes. Reinforcement effects are due to the importance given to road networks, natural heritage sites, and quality of overnight lodging, while attenuation effects are related to tourists demanding bike-related services. From a destination management point of view, this study contributes to the understanding of the role of unimodal cycling in sustainable tourism and opens up further research on lake ecosystems allowing bike tourists to experience natural and low-impact travels.

Innovative water governance in moroccan agriculture : the role of artificial intelligence in enhancing efficiency and effectiveness

Prof. Meriem El Kouhen¹

¹Umi, Meknes, Maroc

G01-O3 Urban, Regional, Territorial and Local Resilience, B5, August 27, 2025, 2:00 PM - 4:00 PM

Water governance in Morocco agricultural sector faces significant challenges due to the increasing of water scarcity aggravated by climate change, inefficiency, failure of public policies and overexploitation. Moroccan agriculture consumes over 85% of the country's water resources, requiring urgent and innovative solutions to increase efficiency and effectiveness. With social and economic actual transformations, traditional governance patterns often fail to deal with such issues in a sustainable and resilient way, what pushed us to highlight the increasing need for an integrating advanced technologies and innovative management strategies.

This paper explores the role of innovation and artificial intelligence in transforming water governance within the agricultural sector in Morocco. Smart irrigation systems, remote sensing technologies, predictive analytics and real time monitoring are relevant examples of emerging solutions to optimize water use, to improve efficiency and effectiveness and reduce water waste. Besides, artificial intelligence can swiftly and smoothly identify sources of inefficiencies ensuring efficient water usage, enabling policymakers and farmers to manage water resources more effectively. However, challenges such as limited infrastructure, lack of advanced digital skills in human resources, high implementation costs remain significant obstacles to widespread adoption in the whole areas.

This study aims to assess the effectiveness of artificial intelligence and innovative governance mechanisms, by analyzing ongoing projects and policy frameworks in addressing Morocco's water crisis. The finding of this research suggests combining governmental sector, private sector investments and background in innovation, farmer education and skills to have a multi-stakeholder approach making coordinated effort to overcome institutional and technological challenges.

Boxes, boom and benefits? Identifying impacts of XXL distribution centres on regional economies in the Netherlands

Prof. Frank van Oort¹

¹Erasmus University Rotterdam, Rotterdam, The Netherlands

G19-O6 Urban, Regional and Local Policy Evaluation, G3, August 29, 2025, 2:00 PM - 4:00 PM

This paper analyzes the economic impact of very large distribution centers (XXL DCs) on regional economies in the East-Southeast Freight Corridor of the Netherlands, the country's logistics hub and "Gateway to Europe." Using detailed geolocation data on XXL DCs and comprehensive Dutch employment records, we employ a difference-in-differences (DiD) approach to assess whether indirect employment benefits can be causally attributed to XXL DCs, as suggested by place-based policy and agglomeration theory. Our findings indicate no causally identifiable indirect employment effects at either the regional or municipal level.

Regarding sector diversity, we observe statistically significant rebalancing effects at the municipal level. However, further analysis suggests this is likely a spurious correlation rather than evidence of a causal relationship, challenging narratives that portray XXL DCs as drivers of economic monotony. Unobserved variables and underlying trends remain more plausible explanations.

These findings have implications for the governance and policy surrounding XXL DC attraction, subsidies, and development. They call into question the economic benefits often cited by local governments and highlight the need for rescaling decision-making to both national and municipal levels. We advocate for bolder, more interactive governance approaches to address the epistemic uncertainty surrounding XXL DCs' economic impact.

Social Trust in European Regions: Institutional Determinants & Cultural Sources

Dr. Christoph Hauser¹, Dr. Gottfried Tappeiner², Dr. Janette Walde³

¹University Of Applied Sciences Kufstein, Kufstein, Austria, ²University of Innsbruck, Department of Economics, Innsbruck, Austria, ³University of Innsbruck, Department of Statistics, Innsbruck, Austria

G13-O2 Social Capital, Territorial Capital, Institutions and The Commons, F5, August 27, 2025, 2:00 PM
- 4:00 PM

Social trust is increasingly seen as an important determinant of economic growth and social prosperity in regions and nations. Even in a comparatively homogeneous area such as Europe, there are stark sub-national differences in levels of generalized trust. It is thus of crucial importance to identify the driving forces of regional trust and analyze the dynamics of its formation. The present paper considers these issues based on four waves of the European Values Study collected in an almost 30 years timeframe from 1990 until 2017. Evidence is provided to demonstrate that values of regional trust remain substantially stable over the entire period and are modified only through spatially correlated random noise processes. This finding is consistent with additional analyses based on spatial regression models identifying slow-moving factors responsible for the geographic distribution of trust scores and buried deep in the cultural background of a society. Whereas the low values in post-communist countries are exhaustively explained based on their institutional and cultural setup, the high Nordic scores remain significant even after inclusion of control variables. The dominant driving force of regional trust is represented by an open society with emphasis on free expression rather than survival values rooted in a focus on economic physical security. Whereas both institutional and educational frameworks are only of minor importance, a high degree of social heterogeneity is clearly detrimental for trust after controlling for GDP per capita. Hence, in spite of its economic significance, social trust does not appear to be amenable to political intervention in the short to medium term but neither should it be responsive to sudden crisis effects.

A Macro Approach in Accounting Sustainability: UN and EU New Proposals.

Dr. Edoardo Pizzoli¹

¹University of Luxembourg, Luxembourg, Luxembourg

S65 Accounting Sustainability in the Mediterranean Region, A5, August 29, 2025, 9:00 AM - 10:30 AM

UN SNA (System of National Accounts) and EU ESA (European System of Accounts) are going to be updated through a process of periodic “benchmarking” of the accounts, which has been carried out approximately every 10 years since the first publication in 1953 (subsequent versions are: 1960, 1968, 1993 and 2008). The EU version, ESA, follows the UN editions, incorporating and eventually expanding the innovations introduced by UNSTAT.

The project “Towards the 2025 SNA” has further innovated the system of accounts, considering the new policy priority of “sustainable development”. Following the publication of SEEA-CF (System of Environmental-Economic Accounting, Central Framework) in 2012, which integrates the economic and environmental dimensions, a further dimension is increasingly becoming an integral part of the system: social accounting.

In this article, the innovations, their potentials and the limits of the new proposals in terms of measurements and information provided will be discussed, also considering the current leap in IT technologies and the possible application to a heterogeneous area such as the Mediterranean.

Economic restructuring and foreign direct investments as drivers of regional labour productivity growth in the Visegrad countries

Dr. Zsuzsanna Zsibók¹, Dr. Zoltán Gál¹, Dr. Ildikó Egyed¹

¹HUN-REN Centre for Economic and Regional Studies, Pécs, Hungary

S68 The Role of Foreign-Owned Companies in Regional Development: Opportunities and Challenges in a Double-edged Relationship, A5, August 28, 2025, 4:30 PM - 6:30 PM

The economic development model of Central and Eastern European countries has faced significant challenges, particularly after the COVID-19 crisis and subsequent energy and supply chain disruptions of the early 2020s. However, early warning signs of stagnating labour productivity in specific regions were already evident in the preceding decade. These challenges vary not only between countries but also among sub-national territorial units, strongly influenced by sectoral specialization.

Through an empirical analysis of sub-national labour productivity growth and its sectoral decomposition, including shift-share analysis, this study finds that increasing reliance on foreign direct investment alone cannot resolve efficiency issues in non-metropolitan areas—or, ultimately, in these economies as a whole. While economic restructuring played a key role in driving labour productivity growth in the early 2010s, its broader positive effects have diminished over time. Our findings highlight a fundamental trade-off faced by non-metropolitan regions: improving labour productivity often comes at the cost of reduced domestic value-added content. Addressing this challenge requires targeted investment policies and human capital strategies that foster both productivity growth and higher local economic integration.

The Effect of Return Migration on Provincial Wellbeing: Evidence from Turkish returnees from Austria and the Netherlands

Dr. Ayse Abbasoglu Ozgoren¹, Dr. Hilal Arslan¹, Dr. Alanur Çavlin¹, Dr. Peter Meister-Broekema³, Dr. Becky Arnold²

¹Hacettepe University Institute of Population Studies, Ankara, Türkiye, ²Netherlands Interdisciplinary Demographic Institute, The Hague, Netherlands, ³Hanze University of Applied Sciences, Groningen, Netherlands

G09-O4 Migration, Mobility Patterns and Impacts Across Space, A4, August 29, 2025, 2:00 PM - 4:00 PM

The return migration-development nexus has been approached by optimistic and pessimistic theories and the dominant approach has changed in time. Although academic interest on return migration has been increasing in the last two decades and return migration makes up a high proportion of total migration flows in the world, the share of studies focusing on the impact of return migration on countries of origin is low and most of them are based on small-scale surveys or qualitative data. This study aims to contribute to the literature by analyzing the impact of return of Turkish migrants from Austria and the Netherlands on provincial development in Türkiye. To estimate return migration from Austria and the Netherlands, NUTS3 (province)-level stock data retrieved from Turkish Statistical Institution (TURKSTAT) is used. Other data from TURKSTAT, OECD and Eurostat on wellbeing indicators at the province level are used to construct a wellbeing index. The time frame used in the study is the 7-year period between 2015 and 2021. We use a Generalized Least Squares (GLS) estimation accounting for autocorrelation and heteroskedasticity, where the dependent variable is Well-Being Index (WBI), and its economic, environmental and health-related dimensions, separately, and our variable of interest is the share of return migrants in time-lagged form. Our preliminary findings derived from GLS estimations suggest that return migrants from Austria and the Netherlands have a positive and statistically significant impact on provincial well-being in Türkiye. This result remains consistent when the models are estimated separately for first-generation return migrants and descendants. Regarding the economic dimension, total return migration also exhibits a positive effect; however, this effect is primarily driven by the migration of descendants in Türkiye—individuals born in Austria or the Netherlands who hold Turkish citizenship. Conversely, migratory movements do not appear to be associated with the environmental dimension, as indicated by heat stress levels. Nevertheless, return migration from Austria and the Netherlands contributes to improvements in the health dimension.

The Interrelationship of Theory (Pop Studies), Culture (Music) and Nature (Biology) In Urban Planning: How Can Eclecticism Be Creative?

Prof. Alex Deffner¹

¹University of Thessaly, Volos, Greece

G15-O2 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness,
Quality of Life, E1, August 28, 2025, 9:00 AM - 10:30 AM

The transfer of existing ideas is an attribute of periods of crisis when there is a greater necessity for hope for a better future, which should be based on a type of certainty rooted in the past. However, this transfer generally has a double dimension: it could either imply the timelessness of 'classic' ideas or the lack of new ideas. The central hypothesis to be tested is how knowledge transfer is connected reciprocally to the creative implementation of eclecticism in urban planning.

Apart from the various fields and the more well-known, usually 'grand', theories (systems theory, postmodernism, chaos/ complexity theory) that have influenced urban planning, a few new 'tendencies' focus mainly on an individual meta-analysis of existing theories. This paper will analyse three tendencies connected to urban planning:

1. The impact of the broader field of pop studies
2. The willingness to incorporate art forms (music)
3. The necessity to reconnect the divided town and country (mainly through biology)

Since this paper is purely theoretical, the primary method used is the analysis of selected texts.

In the contemporary period of blurring boundaries, among the new things that have emerged in various sciences, of particular interest is a will for accessibility for a more significant number of non-experts to understand the issues. The multidisciplinary field of urban studies has joined this phenomenon of pop studies (Solnit, Minton).

Concerning the significance of music in urban planning, the aim is to investigate how songs represent a city's transition, mainly through urban spaces. A connected aim is how this perspective can contribute to an alternative approach to urban cultural planning going back to the classics (Sitte's 'artistic fundamentals').

Concerning the necessity to reconnect the divided town and country, the aim is to examine the current relationship between biology and urban planning (including contemporary texts mainly belonging to the tendency of 'pop studies') and discover its roots (Geddes, Mumford).

GVCs and the twin transition in times of disruption: A case study of the textile and apparel sector in Tuscany

Dr. Patrizia Casadei¹, Professor Riccardo Crescenzi, Professor Simona Iammarino

¹London School of Economics, , Italy

S38-S1 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 27, 2025, 11:00 AM - 1:00 PM

The twin transition – driven by growing emphasis on digitalisation and environmental sustainability – is closely associated with Global Value Chains (GVCs) and has the potential to influence their reconfiguration. At the same time, recent shocks, including the COVID-19 pandemic, geopolitical tensions, and conflicts, have caused major disruptions across production networks at global, continental, and local levels. These concurrent challenges underscore the need to understand how GVCs are adapting to both structural transitions and external disruptions. To address this gap, this study examines the textile and apparel (T&A) industry, a key sector where a highly globalised and fragmented value chain, growing digitalisation, and increasing sustainability pressures make it a crucial case for analysing the twin transition in times of uncertainty and their implications for global value chains. The research adopts a multi-method approach, beginning with a systematic literature review of global GVC research on T&A, with a particular focus on green and digital transitions. It then explores the configuration, structure, and geography of the selected GVC by analysing FDI flows across EU (and UK) regions. A case study on the T&A sector in Tuscany – one of the world's leading industry hubs which is now experiencing an unprecedented economic crisis – was conducted, incorporating a survey to assess firms' positioning within GVCs and the types and extent of green and digital strategies. To gain deeper insights, multiple in-depth semi-structured interviews with selected firms were conducted in collaboration with industry associations, investigating firms' motivations for green and digital upgrades, the role of regional support, and the impact of recent external shocks on GVC configurations and green and digital investment capacity. Finally, these interviews were supplemented by discussions with key industry stakeholders and representatives, offering a broader perspective on the challenges and opportunities presented by the twin transition in GVCs and the sector's ability to survive and remain competitive in the evolving landscape.

Legacy of Napoleonic presence and local development in Italy

Prof. Giulio Cainelli¹, Prof. Roberto Ganau¹, Dr. Nadiia Matsiuk¹

¹Università di Padova - DSEA, , Italy

G01-O3 Urban, Regional, Territorial and Local Resilience, B5, August 27, 2025, 2:00 PM - 4:00 PM

Historical institutional experiences are receiving growing attention as significant and persistent factors behind local development. Among the most important historical events are the French Revolution and Napoleon's conquests across many European regions. In this context, this study examines the long-term impact of Napoleonic rule on contemporary local development in Italy. Beginning with the First Italian Campaign (1796–1797), the French Army occupied the entire Italian peninsula, except Sardinia and Sicily. Under Napoleonic rule (1796–1814), Italian pre-unification states underwent a profound transformation, replacing pre-existing institutional and administrative structures with those introduced by the French authorities. Using municipality-level data and focusing specifically on the role of the Napoleonic Code, we empirically assess the lasting impact of this legacy. Preliminary results indicate a positive impact of these reforms on contemporary local development in Italy.

Mapping Collaboration and Innovation in Green Hydrogen Research: a Social Network Analysis Approach

Dr. Maria Rosaria Seminara¹, Dr. Jacopo Bindi¹, Dr. Alessandro Agostini¹, Dr. Giuseppe Pellegrini Masini¹

¹ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Rome, Italy

S62 A Changing World: Balancing Economic Growth with Sustainable Energy Transitions, E12, August 29, 2025, 11:00 AM - 1:00 PM

Hydrogen is emerging as a key energy vector in the green transition, playing a crucial role in decarbonizing critical sectors such as energy, transportation, and heavy industry . Studies on the application of the Triple Helix Model in the hydrogen sector have demonstrated its effectiveness in fostering collaboration between academia, industry, and government, leading to accelerated innovation and commercialization.

In this context, the Hydrogen Research Operational Plan (POR H2) represents one of the most significant national initiatives in Italy, aiming to develop a competitive hydrogen value chain. The project involves a wide network of research institutions, companies, and public entities, emphasizing the collaborative component essential for technological innovation. This study builds upon the theoretical advancements of the Triple Helix Model, whose applications confirm its potential to foster innovation. By applying Social Network Analysis (SNA), we analyze the relationships that have emerged within the POR H2 network, identifying the flow of resources among stakeholders, the activation of collaborations, and the creation of PhD scholarships focused on hydrogen research. The study thus aims to map the flow of knowledge and the innovation potential within the hydrogen sector in Italy.

Objective multi-dimensional inequalities and their perception: exploring the geography of their mismatch and drivers

Dr. Paolo Bottero¹, Prof. Giulia Urso¹

¹Gran Sasso Science Institute, L'Aquila, Italy

G10-O4 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 29, 2025, 11:00 AM - 1:00 PM

Studying inequality perception is becoming increasingly important since multi-dimensional objective disparities—along with their perception—influence social cohesion, political stability, institutional trust, and economic development. These aspects are key to regional policies, as shown in research on the “geography of discontent” and Euroscepticism.

Perceived inequality, shaped by complex personal and social factors, remains challenging to study due to data scarcity. Increasingly, surveys such as the Eurobarometer, Social Survey Programme, and the European Values Study (EVS) are used to explore the geography of perceived inequality. However, knowledge of geographical distribution at granular scales remains limited. Our research addresses this gap through a NUTS-3 level analysis.

We integrate objective social, economic, environmental, and digital measures with perceived inequalities data from the EVS fifth wave (2017–2020) in France, Italy, Spain, and Portugal across 278 NUTS-3 regions categorized as predominantly urban, intermediate, or rural.

Findings on objective inequalities reveal clear rural-urban divides. Perceptions do not show any significant differences between countries but high within-country variations. Rural regions report the highest perceived inequality, often reflecting objective marginalization. Intermediate regions exhibit the lowest perceptions despite higher objective inequalities than urban areas.

We contribute to the literature by providing a cross-country and within-country analysis of the relationship between objective and subjective inequalities on a granular scale, exploring what drives the latter. Our study highlights the importance of addressing disparities across different degrees of peripherality through policies informed by inequality perceptions to foster more equitable and sustainable development.

Assessing direct and indirect effects of investments in private adaptation to flooding in European regions and sectors

Mr Ignasi Cortés Arbués¹, Dr Theodoros Chatzivasileiadis¹, Dr Servaas Storm¹, Dr Olga Ivanova², Prof Tatiana Filatova¹

¹Delft University of Technology, Delft, The Netherlands, ²PBL Netherlands Environmental Assessment Agency, Den Haag, Netherlands

S15 Regional Climate Change Adaptation, G5, August 27, 2025, 4:30 PM - 6:30 PM

European regions are increasingly exposed to climate-induced damages from sea-level rise (SLR) and river floods. Given the localised impact of floods, recent macroeconomic assessments of climate-induced flooding have begun to focus on sub-national regions. This choice of aggregation is appropriate as climate change adaptation processes and measures are implemented at the local level. In this context, recent studies point to the uptake of private adaptation spending across economic sectors, as firms look to mitigate localised damages to their assets directly. However, regional and sectoral disparities are seldom captured, while the adaptation measures included in macroeconomic assessments are almost exclusively restricted to publicly-funded infrastructure projects, like seawalls or river dikes.

Given the growing share of private adaptation across firms and the importance of regional-level assessments in adaptation research, we employ a dynamic multi-sectoral, multi-regional Computable General Equilibrium (CGE) model for the EU27 and the UK (271 regions, 19 sectors) to assess direct and indirect effects of adaptation in reducing climate-induced damages from floods until 2070. To do this, we combine projected economic damage data for river floods and SLR (obtained from spatially-detailed hazard exposure and vulnerability assessments) with sectoral adaptation investment data from the 28 countries. These data are based on real transactions related to adaptation services, providing valuable representative estimates per sector-region combination. Using these data to calibrate initial adaptation investments, we project two different adaptation uptake scenarios within the model's time horizon. We then compute adaptation benefits from these investments using national benefit-cost ratios drawn from the literature. These adaptation benefits are used to compute residual damages that shock the European economy.

Overall, our results show significant regional and sectoral disparities in impacts and benefits of adaptation. Unsurprisingly, regions with low initial adaptation uptake and high projected flooding damages, particularly in Southern and Eastern Europe, still experience significant impacts to their economies across all scenario ensembles. Moreover, low adaptation uptake in high-value-added sectors such as manufacturing and trade leads to significant second-order effects, as household incomes fall in vulnerable regions. Our analysis underscores the importance of facilitating autonomous adaptation in flood-vulnerable regions, where sector-specific strategies could minimise systemic risks arising from shocks to high-value-added sectors. This becomes all the more important as damages accumulate over time, further restricting the ability of businesses to adapt to future climate change. Not addressing these adaptation challenges effectively could place further pressure on public budgets through an increased dependence on public adaptation projects.

Map the gap: overcoming border-related data issues with derived data

Prof. Tobias Chilla¹, Mr Elias Günther¹, Ms Hannah Paul¹, Mr Stefan Hippe¹, Mr Dominik Bertram¹

¹Friedrich-Alexander University Erlangen-Nuremberg, Erlangen, Germany

S47-S2 All Eyes on Border Regions: Enhancing Cross-Border Cooperation through Data-Driven Policy

Support, Amphitheater I - SAKIS KARAGIORGAS, August 28, 2025, 4:30 PM - 6:30 PM

Territorial analyses of border regions are hampered by data gaps – almost per definition. Despite all efforts for data harmonisation across borders, the challenges remain relevant. The alternatives to official statistical data are threefold, namely a) new/big data sources, b) empirical (primary) data, and c) ‘derived data’. Derived data are those information that combine heterogeneous sources of existing data with meaningful data treatments, as in particular interpolation, regionalisation, and expert calibration.

In our presentation, we explore the potentials and limitations of these approaches for border regions. We illustrate our arguments with examples from ongoing projects either at a pan-European level or for specific border regions. The examples include cross-border accessibility information, tourism and mobility patterns, cross-border commuting at a fine scale and economic interlinkages in different sectors across borders. Ensuring data quality is an important concern, in particular when private data, web scraping information, and expert interviews come into play. In these cases, data combinations and calibrations can help. Against this background, deriving meaningful data in ‘difficult’ themes is a challenging, but promising path. In times of datafication, there is an obvious need to exploit the involved potentials. This is in particular true for border-regions as prominent ‘data-gaps’ where harmonized/fine-scaled data is often lacking.

Fiscal federalism and the European Cohesion Policy

Dr. Nicholas Lazarou¹

¹European Commission, Joint Research Centre, Seville, Spain

G02-O6 Regional Growth Models, Competitiveness, and Convergence, B1, August 29, 2025, 11:00 AM
- 1:00 PM

We contribute to the debate on the implementation of fiscal policy in a supranational federation by examining the role of financing mechanisms and international coordination in the implementation of policy programmes. We use a computable general equilibrium model calibrated to the NUTS-2 regions of the European Union to simulate the impact of Cohesion Policy under different configurations over a 20-year time span. The results show that a shift to a national implementation approach would reduce the economic impact of the intervention and dampen the gains in economic convergence. Using different scenarios, we disentangle the implicit fiscal equalisation related to financing responsibility and the internalisation of interregional spillovers. The two channels affect different groups of regions depending on their relative level of development within the country and their trade openness.

A multi-dimensional spatial analysis of energy poverty in the Netherlands

Mr Fabio Tejedor¹

¹Wageningen University And Research, Wageningen, The Netherlands

S49 Towards more Resilient and Inclusive Urban Energy Futures, D1, August 27, 2025, 11:00 AM - 1:00 PM

Energy poverty has become an increasingly critical issue in the European Union, exacerbated by rising energy prices, geopolitical instability, and the transition to low-carbon energy sources. While policy responses have largely focused on financial assistance and energy efficiency measures, spatial disparities in energy poverty remain underexplored. This study investigates the spatial dimension of energy poverty in the Netherlands, analyzing its socio-economic and environmental determinants at the district level. Using a multidimensional framework, we integrate exploratory spatial analysis with spatial econometric modeling to assess vulnerability factors and spatial spillover effects.

Geographically Weighted Regression (GWR) is applied to examine local and global patterns, while the Spatial Durbin Model (SDM) is used to quantify spatial dependencies. Our findings highlight significant spatial inequalities in energy poverty, shaped by socio-economic vulnerabilities, housing conditions, and environmental factors. The results underscore the need for region-specific policy interventions that go beyond a one-size-fits-all approach to energy poverty mitigation. By incorporating spatial analysis into policy design, this research contributes to a more just and effective energy transition in the Netherlands.

The challenge of territorial inequalities in the EU: theories, policies and strategies

Dr. Daniela Storti¹, Michela Ascani¹, Giovanni Barbieri², Luca Frascchetti¹, Rita Iacono¹

¹Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria - CREA, Roma, Italy,

²Associazione Riabitare L'Italia, Roma, Italy

G21-O4 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 29, 2025,
11:00 AM - 1:00 PM

In February 2025 the European Commission has published the Communication on 'The Road to the next Multiannual Financial Framework', outlining the key policy and budgetary challenges that will shape the design of the next Multiannual Financial Framework (MFF) and more importantly the policies it should support. Among the central themes of the ongoing discussion on policies priorities at EU level there are the demographic challenge, the reduction of inequalities between regions and the urban-rural divide, as well as the improvement of policy integration through the strengthening of the place-based approach.

In this framework, the aim of our contribution is to identify the main conceptual strands of local development theories from the past twenty years, to explore the scenarios associated with them in terms of geographical inequalities, and to highlight their key policy implications. Another objective is to reassess the experience of two emerging policy initiatives in Europe targeting the integrated development of rural areas suffering from depopulation - specifically of the National Strategy for Inner Areas (SNAI) in Italy and the Law to combat depopulation in Castilla la Mancha in Spain - in light of recent developments in local development theories, with the goal of identifying the factors that most influence their outcomes based on the conceptual framework emerging from our review.

The review of local development conceptualizations is conducted through a literature review from 2000 onwards, using data from WoS and Scopus. Additionally, an empirical analysis of the SNAI in Italy and of the Law to combat depopulation in Castilla la Mancha in Spain is performed.

The results of this study highlight the need to redefine current policy paradigms and allow for the identification of new intervention models. These models are characterized by a greater reliance on collective and co-design approaches, as well as new alliances between local communities, public institutions, competence centers, research bodies, third-sector organizations, and other relevant actors at the national and regional levels, following a multi-scalar approach.

References

Barca F. et al. (2012). «The case for regional development intervention. Place-based versus place-neutral approaches», in *Journal of Regional Science*, Vol. 52, No. 1, pp. 134-152. DOI: 10.1111/j.1467-9787.2011.00756.x

Capello R. (2011). «Location, Regional Growth and Local Development Theories», in *Aestimum*, 58, Giugno 2011:1-25

McGregor, J. A., & Pouw, N. (2017). Towards an economics of well-being. *Cambridge Journal of Economics*, 41(4), 1123-1142.

Next Generation EU: academic research and regional disparities in Italy

Professor Bianca Biagi, Professor Alessandra Faggian, Prof. Marta Meleddu¹, Professor Annamaria Nifo

¹Università di Sassari, Sassari, Italy

S18-S2 University Impacts on the Local and Regional Economy, G5, August 29, 2025, 9:00 AM - 10:30 AM

University research networks play a crucial role in academic and innovation ecosystems, with increasing collaboration reshaping research practices and influencing policy. While university-industry partnerships are well studied, university-university collaborations, particularly among smaller or peripheral institutions, remain underexplored despite their importance for local development.

This paper examines inter-university collaborative ties within Partenariati Estesi (EPs), an Italian initiative under the Piano Nazionale di Ripresa e Resilienza (PNRR), funded by the EU's Next Generation EU program. EPs aim to strengthen collaboration among universities, research institutions, and firms, with a focus on underfunded areas. We investigate three key questions: (1) the role of geography and institutional characteristics in collaboration formation, (2) the impact of local institutional quality on participation likelihood, and (3) factors affecting universities' centrality within EP networks.

Using data from ETER, Censis, Clarivate, and Nifo & Vecchione (2014), we analyze 87 Italian universities through social network analysis (SNA), logit estimation, and a two-stage Heckman selection model. Results indicate that while research quality influences participation and network centrality, structural factors—such as university size and geographic location—are more important. Hence, EPs collaborations are concentrated among large, centrally located universities in regions with stronger institutional quality, raising concerns about the program's ability to evenly distribute research opportunities and meet its policy objectives.

Circular families and logistics issues: a typology of coordination types in the agri-food circular economy

Ms Camille Smadja-vigier¹, Ms Corinne Blanquart¹, Mrs Gwenaëlle Raton¹

¹Université Gustave Eiffel - AME-SPLOTT, Villeneuve-d'ascq, France

S01-S1 The Spatial, Regional and Urban Dimensions of Circular Economy, Amphitheater II - SAKIS
KARAGIORGAS, August 27, 2025, 11:00 AM - 1:00 PM

The transition to a circular economy (henceforth CE) in the food sector is attracting increasing attention, but the difficulties in their deployment are leading us to question the logistical challenges posed by this change in production practices.

Analysis of linear food production systems has shown that there is no such thing as an optimal form of logistics organisation, but that these systems are associated with a diversity of logistics organisations, depending on the type of coordination between actors. Research on logistics families has shown that specific coordination types correspond to specific logistic choices.

The circular practices in development are heterogeneous, leading us to question their logistics stakes in all their diversity.

Through twenty-four interviews with production sites in various agrifood industry activities in Hauts-de-France region and seven with direct CE actors, the research seeks to identify the determinants of logistics organisations deployed during the implementation of circular practices. Logistics is considered here as a coordination activity, and not only physical management of flows, and, drawing on the economics of conventions, we look into the diversity of coordination types and institutional logics underlying those implementations.

This article aims to establish a typology of the logistical issues associated with circular practices by analysing them as coordination forms between actors. Five families of circular practices are identified: sorting of flows, methanisation, animal feed, coproduct valorisation and input reduction. The research illustrates that specific circular practices correspond to specific types of logistics organisation. Plants belonging to the “sorting” family have a standardisation logic; they operate on continuous production time and must implement routines that apply uniformly to the different flows leaving the plant. The challenge is to integrate the practice into the production standard. It is then up to the conventional waste managers. The “methanisation” family has an interpersonal logic, with each plant dealing differently, often directly, with a methaniser, and the arrangement are personalised. Practices are organised in close geographical proximity. Plants in the “animal feed” family adopt a contractual approach, their practices are governed by contracts that set the collect frequency, the price and transport. The “valorisation” family has a market logic, the aim is to obtain the highest added value from coproducts, regardless of the distance travelled. Coproducts enter a conventional distribution circuit and are managed by the purchasing departments. Finally, the “input reduction” family has a territorial logic, relying on a network of close actors and industrial symbioses.

Artificial Intelligence and Regional Disparities

Dr. Tryfonas Christou¹, Dr. Pablo Casas¹, Dr. Abián García-Rodríguez¹, Dr. Nicholas Lazarou¹, Dr. Simone Salotti¹

¹JRC Seville, European Commission, Sevilla, Spain

S70 The Role of AI in Turbulent Times: Challenges, Opportunities and Best Practices for Data-Driven Regional Resilience, Amph 3, August 29, 2025, 9:00 AM - 10:30 AM

This paper sheds light on how AI is expected to reshape regional EU labour markets in the coming years, analysing the implications of this shift for regional disparities. To conduct the analysis, we use a spatial dynamic general equilibrium model calibrated for the EU NUTS2 regions in which the workforce is divided by AI exposure levels across EU regions and sectors. Specifically, we leverage AI occupation-specific exposure data to simulate how the EU workforce is expected to evolve as AI spreads through the economy, providing a comprehensive overview of the current state of AI exposure across regions in the. The findings reveal a scenario in which AI increases regional disparities, benefiting labour market conditions in more developed regions while negatively impacting or having a negligible effect on less developed regions.

Empowering Local Stakeholders: Comparing Stakeholder Mapping Approaches for Inclusive Energy Transitions in Positive Energy Districts

Dr. Gudrun Haindlmaier¹, Marcus Jandt¹

¹AIT Austrian Institute Of Technology, Vienna, Austria

S49 Towards more Resilient and Inclusive Urban Energy Futures, D1, August 27, 2025, 11:00 AM - 1:00 PM

The transition to climate-neutral cities depends on inclusive urban strategies that promote sustainability, resilience, and social equity. Positive Energy Districts (PEDs) are a key mechanism in this transformation, fostering collaboration among diverse local stakeholders to create liveable and energy-positive urban neighborhoods. A crucial aspect of this process is "energy citizenship," which highlights the active participation of individuals, communities, and organizations in shaping energy transitions. To ensure effective stakeholder engagement, it is essential to understand the diverse roles, needs, and capacities of local actors and facilitate their collaboration in energy-related activities. This paper explores different approaches to stakeholder mapping as a tool for enabling a joint engagement within PEDs. We compare various dimensions of stakeholder mapping, assessing how methodologies can support co-creation processes and foster collective action to mitigate energy poverty. By applying these approaches in the six different pilot sites in Europe, we present first insights into how different local actors can be brought together to collaboratively address energy vulnerabilities, challenges and opportunities.

By analyzing the interplay between energy citizenship and participatory governance, this research highlights the value of tailored stakeholder mapping approaches in strengthening collaboration and shared decision-making, which are integral to the democratic management of communities. Our findings underscore the importance of place-based, inclusive strategies to enhance local engagement, ultimately driving more effective and equitable energy transitions within PEDs.

Rethinking tourism sustainability: integrating data science for carrying capacity and adaptive policies

Prof. Nicola Camatti¹, Dr. Michele Bettin, Dr. Emma Magistri

¹Università di Venezia - Ca' Foscari-Department of Economics , Venezia, Italy

S09 Opportunities, Risks and Challenges of the Digital Transformation in Tourism: ICT and
LocalDevelopment, E12, August 29, 2025, 9:00 AM - 10:30 AM

The research on tourism carrying capacity seeks to comprehend the adverse effects exerted by overwhelming tourist pressure on a destination's resources. The primary goal is to foster the development of effective response strategies to support more sustainable tourism. However, the implementation of these strategies often faces challenges, leading to the frequent imposition of difficult-to-enforce limits on tourist flows. This necessitates the exploration of alternative and more adaptable approaches. This study aims to underscore the significance of a data-driven approach in identifying crucial pressure points. These points, referred to as bottlenecks, are systematically evaluated through the segmentation of the tourism subsystem and the analysis of various visitor types. This method provides a more precise and detailed understanding of tourist flows, guiding the formulation of intervention strategies prioritizing adaptability and optimization of tourist resources over rigid flow limitations. Three case studies are examined within their systemic context, utilizing a carrying capacity scenario simulator and a predefined set of indicators. The results highlight the effectiveness of adopting soft policies to address excessive tourism pressure, without the need for stringent measures and significant infrastructure investments.

Are NextGenerationEU funds effectively targeted? Assessing the territorial distribution of Italy's Recovery and Resilience Plan

Dr. Francesco Scotti¹, Dr. Carlo Caporali², Prof. Davide Luca³

¹Politecnico di Milano, Milano, Italy, ²Gran Sasso Science Institute, Area of Social Sciences, L'Aquila, Italy, ³University of Cambridge, Department of Land Economy, Cambridge, United Kingdom

G20-O5 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 29, 2025, 2:00 PM - 4:00 PM

To respond to the social and economic challenges that arose during the COVID-19 pandemic, the European Union implemented NextGenerationEU, the largest-ever stimulus package undertaken in the EU, currently worth over €650bn (at current prices). National Recovery and Resilience Plans (RRPs) are at the heart of such a package and provide member states with performance-based loans and grants to support structural reforms and investment. Plans must allocate at least 57% of their budget to green and digital transition measures, while also increasing cohesion and resilience.

Despite the policy tool's substantial size and potential, empirical evidence on how these funds are being targeted and spent is still limited. Focusing on Italy, one of NextGenerationEU's largest beneficiaries, we address two research objectives to contribute to filling this gap.

We first explore the territorial distribution of funds from Italy's national government, in charge of overall coordination, to local administrations, by identifying the key local characteristics explaining participation in Italy's RRP. Featuring a double-stage Heckman correction model and a dataset covering Italy's almost 8,000 municipalities, we consider the association between funds allocated to municipal governments and variables capturing local administrative, financial, and macroeconomic characteristics. We find that funds are primarily allocated to Southern, relatively worse-off urban municipalities with better administrative capacity. Previous experience with EU Cohesion Policy funds also determines the allocation of RRP funds. The fund allocation process across different missions is also affected by the pre-existing level of infrastructures and services in the underlying sectors. Second, we discuss whether recipient territories adopt specialisation strategies—i.e., they attract funds in policy areas where they already have strong capacity—or invest in policy domains where they have lower levels of expertise. We observe a process of specialisation in the Digital, Education, and Healthcare missions. By contrast, we find a pattern of diversification in the Social mission, in line with the convergence mechanism of the EU Cohesion Policy.

Overall, while these results suggest that monies are distributed relatively effectively, they also underscore how some of the country's weakest territories may struggle to exploit the opportunity offered by NextGenerationEU, potentially further enhancing spatial divergence.

Bounce Back or Breakdown? Assessing Territorial Vulnerability to Repeated Disasters across European NUTS-3 Regions

Dr. Mariagrazia D'Angeli¹, Dr. Davide Di Marcoberardino²

¹Università Roma Tre, Roma, Italy, ²Università Politecnica delle Marche, Ancona, Italy

S43 Regions at Risk: Climate and Weather Extremes in Local Perspective, F5, August 28, 2025, 4:30 PM - 6:30 PM

Climate-related disasters have increasingly drawn global attention due to their devastating effects on communities, infrastructure, and economic activity. Recent extreme weather events in regions such as Emilia-Romagna (Italy) and the Valencian Community (Spain) underscore the growing risks associated with climate change. The latest IPCC reports confirm that human-induced climate change has intensified the frequency and magnitude of such events. Economic growth and population expansion further contribute to rising vulnerabilities, while mitigation efforts remain insufficient. Within this complex framework, this study investigates the effects of repeated climate-related hazards on socio-economic vulnerability at the local level, specifically focusing on European NUTS-3 regions. While previous research has to some extent examined multiple hazard risks, there remains a gap in large-N empirical studies assessing the cumulative impact of consecutive disasters on socio-economic vulnerability. Given the increasing likelihood of spatially and temporally linked extreme events, it is critical to understand their influence on adaptive capacity and resilience for informing disaster risk management policies and strengthening adaptive capacity at the local level. Using the Joint Research Centre's (JRC) socio-economic vulnerability indicator, as developed by Sibilia et al. (2024) and HANZE flood data, this study aims to assess the relationship between disaster recurrence and vulnerability. Preliminary results indicate that the first disaster event significantly increases socio-economic vulnerability, while subsequent disasters exhibit diminishing effects, except in social vulnerability, which continues to deteriorate. This suggests potential adaptation mechanisms at play, though social vulnerability remains a persistent challenge.

Spatial Proximity Patterns of X-Minute Cities – An Integral Accessibility Study of the Netherlands

Dr. Umut Türk¹, Prof. Dr. John Östh², Dr. Karima Kourtiti^{3,4}, Prof. Dr. Peter Nijkamp^{3,4}

¹Abdullah Gül University, Kayseri, Türkiye, ²Oslo Metropolitan University, Oslo, Norway, ³Open University of the Netherlands, , Netherlands, ⁴AI Cuza University of Iasi, Iasi, Romania

S33 Spatial Microsimulation: Methodological Advances and Empirical Applications, E1, August 27,
2025, 2:00 PM - 4:00 PM

This paper presents an operational statistical and modeling framework for analyzing and mapping spatial accessibility patterns among functionally overlapping X-minute cities within the national settlement system of the Netherlands. It seeks to extend the notion of local proximity – a central theme in the 15-minute city concept – toward interconnected urban areas by adapting Walter Christaller's central place theory for the X-minute city paradigm. This neo-Christallerian approach is applied and tested using an extensive database, employing quantitative techniques such as quantile regression and hierarchical clustering to create geographic accessibility maps based on specified X-minute thresholds. The study shows significant disparities in accessibility across urban and rural regions, with urban centers like Amsterdam, Rotterdam, and Utrecht demonstrating higher accessibility scores compared to their rural counterparts. The analysis also highlights inequalities faced by vulnerable populations, particularly the elderly, in accessing essential services. GIS-based visualizations demonstrate the quality of life and spatial sustainability profiles of the Dutch urban system, emphasizing the role of active or micro-mobility in enhancing access to key amenities. Finally, the findings inform targeted policy interventions aimed at improving urban connectivity, promoting mixed-use development, and fostering active mobility to create more inclusive and resilient urban environments in the context of the X-minute city framework.

Circular Economy and Reverse Logistics: Some insights on Northern Italy Textile Industry

Dr. Alessia Tagliabue^{1,2}, Dr. Matteo Scacchi¹, Dr. Ila Maltese³, Professor Elena Maggi¹

¹University Of Insubria, Varese, Italy, ²IUSS PAVIA, Pavia, Italy, ³Roma Tre University, Rome, Italy

G05-O6 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 29, 2025, 9:00 AM - 10:30 AM

The textile industry is among the largest contributors to global environmental degradation due to its reliance on linear production models and resource-intensive processes. Reverse Logistics, or Circular Logistics (CL), has the potential to support Circular Economy (CE) initiatives. However, its heavy reliance on road transport can significantly undermine the expected environmental benefits. This study, developed within the NODES (Nord Ovest Digitale e Sostenibile) project funded by Next Generation EU, explores how textile companies can redesign logistics processes to optimize CL operations. The research aims to identify key success factors for CL implementation in the textile sector while assessing the economic and environmental benefits of integrating CL and CE strategies. Adopting a case study approach, this research builds on a systematic review of international best practices in CE and CL. The literature review encompasses not only the identification of successful models from the textile industry and other sectors, but also an examination of the main barriers to efficiently implement CL processes, including logistics complexity, high costs and regulatory challenges. The empirical study focuses on a sample of textile companies in Northern Italy, and collects data through interviews, direct observations and company reports to assess how CE principles are applied in CL operations. The findings are then used to test and validate innovative and sustainable solutions for optimising the logistics process managing circular economy flows.

This study is distinguished by its integration of theoretical insights and real-world application, thereby providing practical suggestions for textile companies transitioning towards circular business models, able to enhance their reverse logistics efficiency and reduce their environmental impact. By outlining strategies to improve both economic viability and environmental sustainability, it contributes to the ongoing debate on circular supply chain management. Moreover, the analysis of participating companies offers concrete recommendations for fostering industrial symbiosis and resource-sharing networks.

Understanding labor market disruptions during COVID-19: comparative analysis of selected European countries

Dr. Ivana Kulhánová¹, Dr. Michala Lustigová¹, Dr. Viktor Květoň¹

¹Faculty of Science, Charles University, Prague, Czech Republic

G23-O1 Labor Markets, Unemployment, Gig Economy, Digital 'Nomads', Amphitheater II - SAKIS
KARAGIORGAS, August 28, 2025, 9:00 AM - 10:30 AM

The COVID-19 pandemic significantly affected labor markets across European countries, with its effects disproportionately distributed among socioeconomic groups and regions. This study investigates the economic consequences of pandemic-related measures in selected European countries using data from the 10th round of the European Social Survey. This data was collected between 2020 and 2022 in European countries. Countries were selected for analysis with special attention to various economic restrictions set by the government as a response to the COVID-19 pandemic to avoid further spread of this disease. For instance, in Italy and Czechia, the government trusted in strict lockdowns. In contrast, in Sweden, lighter restrictions were adopted. These differences in the effort to tackle the COVID-19 pandemic resulted, from the economic point of view, in various labor market outcomes in European countries. From the European perspective, the situation on the labor market was particularly severe in Greece and Czechia, with 42.2% respectively 39.1% of employed individuals experiencing at least one negative labor market event (job loss, income reduction, working hours reduction, furlough, and forced unpaid leave) – one of the highest rates in Europe. The most affected groups were those with secondary education and employees in the private sector. On the contrary, Sweden with lighter governmental restrictions showed lower rates (20.4%) of negative labor market events among employed individuals. In terms of economic sectors, services, tourism, and retail sectors were disproportionately affected, particularly in Italy and Czechia. In countries like Sweden and the Netherlands, with stronger digital economies, people adapted more effectively to remote work. The analysis also confirms substantial gender differences. Women across all countries faced higher risks of income reduction and of forced unpaid leave, whereas men were more exposed to job losses. These patterns reflect not only sectoral employment differences but also entrenched gender roles, particularly related to caregiving. The COVID-19 pandemic underscored the need for resilient labor market policies to mitigate social and economic inequalities. The findings emphasize the need for addressing gender disparities, enhancing social protection, investing in education and digital transformation, and supporting vulnerable groups in society.

Unveiling the Drivers of Digital Transformation: A Spatial Analysis of the National Recovery and Resilience Plan in Italian Municipalities

Dr. Silvia Mattiozzi¹, Prof. Barbara Ermini¹, Prof. Raffaella Santolini¹

¹Università Politecnica delle Marche, Ancona, Italy

G06-O2 Space and Digital Transformation, A1, August 28, 2025, 9:00 AM - 10:30 AM

The NextGenerationEU plan emphasizes digital transformation as a key objective, recognizing the essential role of digital technologies in modernizing public administration. Through targeted initiatives and investments, the plan aims to enhance the efficiency, transparency, and accessibility of public services. Core actions include developing digital infrastructures, creating interoperable platforms, and promoting data-driven governance. These measures aim to streamline bureaucratic processes, improve service delivery, and create a responsive, citizen-focused administration, ultimately strengthening institutional effectiveness and economic resilience.

Within the framework of the Italian local government, this study examines the presence of spatial interactions in the participation of municipalities in projects designed to promote digitalization, financed through the National Recovery and Resilience Plan (NRRP). To analyze spatial interaction patterns among approximately 6,500 municipalities, we utilized the data on projects from the National Recovery and Resilience Plan (NRRP) falling under Mission 1, for which municipalities serve as implementing entities.

As it is well known, spatial patterns can be analyzed using various spatial econometric models. In particular, we compare several widely used spatial econometric models, including the Spatial Lag of X (SLX), Spatial Durbin Model (SDM), and Spatial Durbin Error Model (SDEM). These models have been selected for their effectiveness in capturing a broad range of spatial dependencies (LeSage, 2015). To determine the optimal spatial model for analyzing relationships among municipalities, we utilize multiple spatial weight matrices, including first- and second-order binary contiguity matrices and geographical distance matrices, as well as matrices incorporating up to 16 nearest neighbours. Model comparison employs a Bayesian approach (LeSage, 2015; Yesilyurt and Elhorst, 2017).

Further investigation focuses on the determinants of spatial interactions, particularly the influence of municipal administrative quality and the technological and human capital endowments of territories. We assess administrative capacity using the Municipal Administration Quality Index (Cerqua et al., 2025), which includes bureaucratic efficiency, local politicians' quality, and economic performance. Proxies for technological background include specialization in high-tech sectors and broadband access, while human capital is measured by the proportion of the population with a high level of education.

Preliminary results from the selected Spatial Durbin Model (SDM) show a statistically significant effect of neighbouring municipalities on NRRP municipal performance. In investigating the factors driving digital transformation across Italian municipalities due to NRRP initiatives, our main finding suggests that municipalities with stronger administrative capacities do not align their performance with that of their neighbours, likely due to their more efficient political and bureaucratic structures.

Assessing the impact of universities on European regional TFP

Prof. Ivan Etzo¹, Prof. Laura Ciucci, Prof. Stefano Usai

¹Università degli Studi di Cagliari & CRENoS, Cagliari, Italia

S18-S1 University Impacts on the Local and Regional Economy, A5, August 27, 2025, 4:30 PM - 6:30 PM

Recognized as key drivers of regional economic development and innovation performance, universities operate through two primary channels: the generation of highly qualified human capital and the creation and dissemination of knowledge. This paper aims to enhance our comprehension of universities' regional influence from a relatively unexplored perspective: the impact of university activities on regional total factor productivity (TFP). To this end, the paper builds on the groundwork laid by Marrocu et al. (2022a), which established a framework for measuring universities' effects on TFP across European regions. This ongoing research endeavours to expand upon the initial study by placing significant emphasis on the knowledge generation and transfer initiatives undertaken by universities. The study assesses the impact of universities on total factor productivity across 220 European NUTS 2 regions from 2000 to 2019. We find a positive and statistically significant effect of university patents on TFP growth of European regions (NUTS2). Furthermore, university patenting activity is positively associated with TFP growth in catching up and moving ahead regions.

Youth Activism and rural projects in Italian Inner Areas

Dr. Daniela Storti¹, Prof. Stefania Leone², Andrea Orio²

¹Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria - CREA, Roma, Italy,

²University of Salerno, Salerno, Italy

G25-O3 Enriching Research and Policy Methods in Regional Science: Digital Tools, Artificial Intelligence, Participatory Methods, Mapping Techniques, Stakeholder Involvement, Amph 3, August 29, 2025, 2:00 PM - 4:00 PM

Inner areas (remote rural areas) are characterized by low population density, distance from major services, and often a strong dependence on agriculture. However, these regions face significant challenges, such as population aging and abandonment of agricultural lands. Youth participation to social innovation processes is crucial for the sustainability of these areas.

This paper aims to explore the motivations, challenges, and opportunities for young people who choose to live in Italy's Inner Areas, with a particular focus on their perceptions of agriculture, natural resources, and the environment. Furthermore, it seeks to suggest policy actions to support youth in these remote rural areas, promoting sustainable development and improving their quality of life. Our methodology is based on a mixed-methods approach, combining qualitative and quantitative techniques, and a path of action-research.

The first part of the contribution analyzes theoretical perspectives on Remaining and Mobility and evidence from previous studies on youth conditions in remote rural areas (Farruglia D., 2016, Leone S. e Orio A., 2024; Membretti A. e al., 2023), to answer two main research questions:

- RQ1: Are there any relationships between the reasons to remain in the Inner areas for some young people and their representation of environmental source?
- RQ2: What factors are significant for the realization of personal and community-related projects by active young people who remain in the internal areas?

The second part of our work focuses on public policies aimed at better supporting young people in remote rural areas. To this end, we will present the first results of an ongoing project, Scuola Giovani Pastori (The School for Young Shepherds), an action research initiative targeted at young people in remote rural areas of Italy, promoted by the Council for Agricultural Research and Economics (CREA) and the Association Riabitare l'Italia.

The school is based on participatory training methods and networking, involving local farmers, researchers, and stakeholders. It focuses on shepherding skills and offers experiential training on key topics such as regenerative grazing and the artisanal processing of raw materials, while also supporting entrepreneurship development. The aim is to enrich the training experience and foster new, lasting connections among participants. Through active engagement, the project seeks to promote community empowerment.

This paper provides an in-depth analysis of the dynamics influencing youth activism in remote rural areas. Policy recommendations will guide institutions in designing effective support programs for young people, contributing to the economic and social sustainability of these regions.

Cross-border mobility under external shocks: The case of Poland's eastern border.

Prof. Tomasz Komornicki¹, Prof. Rafał Wiśniewski¹, Dr Andrzej Jakubowski², MsC Barbara Szejgiec-Kolenda¹, Prof. Eugenia Maruniak³

¹Institute of Geography and Spatial Organization, Polish Academy of Sciences, Warszawa, Poland,

²Maria Curie Skłodowska University, Lublin, Poland, ³Institute of Geography, National Academy of Sciences of Ukraine, Kiev, Ukraine

G09-O4 Migration, Mobility Patterns and Impacts Across Space, A4, August 29, 2025, 2:00 PM - 4:00 PM

Since the collapse of the bipolar world, the functions of Poland's borders with the Russian Federation, Belarus and Ukraine have undergone dynamic transformations. These changes, driven by shifts in Poland's geopolitical position and economic situation, have influenced both the scale and nature of cross-border mobility, making Poland an attractive destination for migration and tourism from its eastern neighbours.

In recent years, two unexpected and severe shocks have triggered profound but divergent changes. The first was the COVID-19 pandemic, which, through mobility restrictions, disrupted previously dynamic labour, education, and tourism markets in Poland. The second shock stems from Russia's aggression against Ukraine, which has led to an unprecedented humanitarian crisis. This crisis has resulted in the large-scale opening of the European Union's external borders to several million Ukrainian refugees while simultaneously imposing further restrictions on citizens and businesses from Russia and Belarus. The rapid influx of refugees has posed significant challenges, affecting nearly all dimensions of Poland's socio-economic landscape.

The presentation will outline the results of studies examining the impact of these two external shocks on: (a) border traffic, (b) the labour market, (c) education, and (d) tourism. In each case, the dynamics of change between 2019 and 2023 will be analysed, considering the evolving realities of Poland's interactions with Ukraine, Belarus, and Russia, as well as the territorial distribution of cross-border flows in Poland.

Regional Uncertainty Spillovers through Global Value Chains

Dr. Luca Bettarelli, Dr. Vieri Calogero, Prof. Fabio Mazzola, Dr. Pietro Pizzuto¹, Prof. Laura Resmini

¹University of Palermo, Palermo, Italy

G04-O1 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 27, 2025,

11:00 AM - 1:00 PM

Economic uncertainty is a crucial factor affecting economic performance, investment decisions, labor market dynamics, industrial restructuring, and business cycles (Bloom, 2009; Baker, Bloom & Davis, 2016; Scott & Bloom, 2013). In an increasingly interconnected world, uncertainty is not confined to national borders but spreads through multiple channels, including trade and global value chains (GVCs) (Baldwin, 2016; Antràs, 2020). The existing literature has extensively studied the direct effects of uncertainty and, more recently, its spillovers between markets (Gonzalez-Perez, 2019) and between national economies (Han et al., 2016; Biljanovskay et al., 2017; Caggiano et al., 2020; Antonakakis et al., 2018; Moramarco, 2023).

However, despite such rich come-back of studies investigating the economic effects of uncertainty in the last decades, none of them has focused on the heterogeneous impact of global uncertainty spillovers at the regional level and the related transmission channels that remain quite underexplored. This aspect is particularly relevant given the deepening of global integration, which intertwines direct and indirect channels through which global uncertainty propagates.

To the best of our knowledge, our study is the first that aims to fill this gap by analyzing country-to-region uncertainty spillovers through an empirical approach that allows us to unpack the direct and indirect channels. We pose the following research questions: (i) How does participation in global value chains transmit global uncertainty to regions? (ii) What regional, sectoral, and network-related factors influence the intensity of uncertainty spillovers at the regional level?

Using the uncertainty index by Ahir et al. (2022), ORBIS firm-level data aggregated at the national level for the parent companies of global multinationals and at the NUTS2 regional level for their European affiliates, and ARDECO data for a panel of 242 NUTS-2 regions in EU-27 countries over the period 1980-2022, we find that country-to-region uncertainty spillovers cause a significant contraction in regional GDP, with an effect that tends to dissipate in the medium term. The impact is sizable if regions are highly exposed to external shocks through inter-firm linkages and if the shock is large, with a peak effect of almost -0,5%, two years after the uncertainty shock. Regarding sources of heterogeneity, we find that regional characteristics, in terms of innovation capacity and complexity, allow for a faster shock absorption. Finally, an unfavorable position in the business cycle and a high concentration of regional firms controlled by companies located in a country affected by an uncertainty shock significantly prolong recovery times.

Dynamic Capabilities for Grand Challenges: How Rural Entrepreneurial Households adapt to Climate Shocks in Emerging Economies

Mr Ole Lueck¹, Prof. Dr. Javier Revila Diez¹

¹University Of Cologne, Cologne, Germany

G08-O4 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, Amphitheater I -
SAKIS KARAGIORGAS, August 29, 2025, 9:00 AM - 10:30 AM

Climate change increasingly threatens livelihoods and economic stability in low- and middle-income countries through more frequent and severe natural disasters. These climate shocks disproportionately disrupt rural micro firms and the related entrepreneurial households, severely affecting income, employment, and overall household resilience. Despite this growing threat, the relationship between climate-induced shocks and the resilience of entrepreneurial households operating micro-enterprises in rural areas of the Global South remains underexplored. In particular, little is known about how ex-ante preparedness strategies — such as financial savings, income diversification, and risk awareness — influence the resilience and adaptive capacity of micro-businesses and their corresponding households. This study addresses this knowledge gap by examining how such preparedness measures enable households to sustain their micro-enterprises and maintain overall household resilience following climate shocks, focusing on two middle-income countries that are highly affected by Climate Change.

Leveraging detailed longitudinal household and firm data from the Thailand Vietnam Socio-Economic Panel (TVSEP) from 2007 to 2022, combined with high-resolution, spatially explicit climate data, this paper investigates how ex-ante preparedness influences firm survival, house-hold resource allocation, and overall resilience after climate shocks in Thailand and Vietnam. We capture drought shocks at the village level using the Standardized Precipitation Evapotranspiration Index (SPEI), derived from satellite-based data, and storm exposure through geocoded typhoon track data. Employing a panel fixed-effects regression analysis, the study quantifies the causal effects of disaster exposure and ex-ante preparedness on firm continuity and household economic resilience, emphasizing dynamic changes and resource shifts.

We expect that our findings will reveal how ex-ante preparedness strategies moderate the impacts of climate shocks, providing empirical evidence for effective household coping mechanisms. By integrating firm- and household-level perspectives, this study aims to contribute theoretically to resilience frameworks and entrepreneurial preparedness literature, specifically in rural and micro-enterprise contexts in the Global South. Ultimately, the insights derived will have significant policy implications, informing targeted interventions aimed at enhancing micro-enterprise preparedness and household resilience to climate-related disruptions.

The Impact of Remote Work on Crime Reduction in Danish Neighbourhoods

Dr. Nino Javakhishvili-larsen¹, Dr. Bence Bøje-Kovacs¹

¹The Department Of The Built Environment, Aalborg University Copenhagen, Copenhagen, Denmark
S45 Spatial Aspects of Well-being, Addiction and Crime, F1, August 27, 2025, 4:30 PM - 6:30 PM

This paper investigates the relationship between the rise of remote work (WFH) and its impact on crime rates, particularly burglary and different street crimes. Utilizing Danish microdata for crime and applying the WFH index developed for the Danish labour force (Javakhishvili-Larsen et al. 2023), we analyse the effects of increased WFH on neighbourhood-level crime rates. Our study addresses whether the pandemic has created positive side effects for society, specifically if remote work enhances safety by reducing burglaries and street crime in Danish neighbourhoods. Finally, we investigate to what extent improved safety in the neighbourhood is capitalized in housing prices. Building on findings from the UK and US, where significant burglary reductions were observed, we examine if similar patterns exist in Denmark. We explore spatial heterogeneity, investigating whether the crime-reducing benefits of WFH are offset in neighbourhoods surrounded by high-WFH areas, consistent with a spatial search model of criminal activity. Additionally, we analyse spatial spillovers and compare WFH's impact on crime in different types of settlements, such as single family detached housing areas vs. apartment blocks, low-income vs. high-income residential areas, etc. Our methodology involves merging Danish registry data identifying the location of the committed/reported crime with comprehensive demographic and socioeconomic neighbourhood-level data including information about WFH and house prices. The data is derived from annual administrative register data from Statistics Denmark between 2010 and 2023. This approach allows for a comprehensive analysis of the interplay between remote work, crime rates, and neighbourhood safety, considering the socioeconomic characteristics of the neighbourhood residents. This study contributes to the existing literature in several ways, firstly, it addresses the knowledge gap regarding the effects of the pandemic and transformative changes in work patterns, particularly the increasing prevalence of WFH. Secondly, it enhances understanding of neighbourhood safety, providing valuable insights for policymakers and urban planners in designing future neighbourhoods. Thirdly, it offers a comparative perspective by examining these trends in the Danish context, adding to the growing body of international research on this topic. Fourthly, it investigates the differential impact of WFH on various types of crimes, not limited to burglary, offering a more holistic view of remote work's effect on public safety. And lastly, it analyses the socioeconomic factors that may influence the effectiveness of WFH in crime reduction, contributing to more targeted policy interventions.

The role of organizations for the development of green technologies: a focus on uniqueness of combination

Dr. Stefano Basilico¹, Dr. Nils Grashof²

¹Gran Sasso Science Institute, L'aquila, Italy, ²Friedrich Schiller University Jena, Jena, Germany

G24-O4 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 29, 2025, 2:00 PM - 4:00 PM

One of the most recent challenges posed by the European Union is the transition towards environmental friendly technologies to address major challenges such as the conflicting trends of a growing population and the limited amount of natural resources (European Commission, 2023). In light of this, a strategy is proposed at the European level involving a variety of organizations to renew their knowledge and skill sets to be able to develop these technologies (JRC, 2022). Germany as well as other European countries are currently introducing new green technologies to meet the standards imposed by EU (EFI, 2024, 2023). Given its diverse and broad research infrastructure comprehending both public (universities, universities of applied sciences, technical universities and research institutes) as well as private entities (BMBF, 2012, 2014; Graf & Menter, 2021), Germany is a particular interesting research case. Green technologies are complex in their nature and they rely on a higher extent on developments put forward in other technologies (Barbieri et al., 2020, 2023). The literature on technological development focuses mainly on knowledge recombination activities put forward by inventors (Cassi & Plunket, 2015; Maggioni et al., 2011). Mainly due to data limitations, only recently new studies shifted towards assessing the recombination impact of organizations for new technological advancements (Wanzenböck et al., 2024; Shin et al., 2023). We continue this line of research investigating the, potentially different, roles of public and private organizations in making new knowledge combinations with a particular focus on green technologies given their strategic importance. In particular, we focus on a combinatorial function called uniqueness regarded as important for knowledge recombination in general (Su et al., 2013; Kim et al., 2013) and even more in the case of green technologies (Barbieri et al., 2020). After identifying from which typology of organization the majority of unique combinations in the green realm come from, we also analyze their impact on subsequent inventions. We further distinguish between impact on subsequent green technologies or on other non-green technologies. Particularly in the context of a green transition, it is important to assess if the new knowledge produced by those inventions is also subsequently re-utilized or not, and in which knowledge fields. Our results important for policy makers, who should consider them in the context of accelerating the transition to green technologies. Policy makers could then consider targeting specific weaknesses in the knowledge base of organizations promoting knowledge transfer activities and more collaboration.

Multiscalar Dynamics of Italy's National Recovery and Resilience Plan: Balancing Territoriality and Deterritorialization in the Veneto Region

Prof. Laura Fregolent¹, Prof. Stefania Tonin², PhD Gianfranco Pozzer³

¹Università IUAV di Venezia, Venezia, ITALY, ²Università IUAV di Venezia, Venezia, ITALY,

³Università IUAV di Venezia, Venezia, ITALY

G21-O1 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 27, 2025,
2:00 PM - 4:00 PM

In the face of rapid changes in urban and territorial systems, spatial governance policies have initiated various territorial re-scaling processes for over a decade to redefine the strategic distribution of financial and instrumental resources. Paradigmatic examples of this are the recent European instruments for the recovery and resilience of economic and social systems, which, while promoting a necessary inter-scalar comparison between forms of territorialization and de-territorialization, do not make explicit the interactions between missions, often adopting a top-down approach that tends to limit the institutional component.

Considering the spatial dimensions of the Italian National Recovery and Resilience Plan (right away Pnrr) as an outcome of an intertwining of sectoral and functional visions, this paper intends to capture and discuss the scalarity of investments by following a qualitative-quantitative reading of territorial issues referring to the themes of economic revitalization and social resilience. From this perspective, scalarity is introduced as a spatial outcome of missions, using institutional monitoring systems as a detection source. It is enriched with the issues driving the Plan using registry and census descriptors on vitality, marginality or fragility of contexts, as acquired from sector studies. The analytical approach of the contribution draws on planned interventions and a solid knowledge base to establish a “logical connection” between the mission and the guiding questions, aiming to highlight the inter-scalar effects of investments.

From a multidimensional statistical analysis conducted on all the municipalities of the Veneto Region (563 administrative units), interesting structural relationships emerge between Pnrr investments updated to 2024 and demographic, socio-economic and land use variables referred to in the period 2020-2021. The test, of an exploratory nature, is based on a cluster analysis aimed at highlighting the territorial “weight” of the different groupings and identifying any spatial interdependencies. The profiles thus obtained are subsequently examined through a multiple linear regression model, allowing the model to characterize the financial landings according to specific urban-territorial assets.

Mapping the missions responses also allows research to capture the Pnrr's contributions and opportunities in the implementation phase. It highlights how “additivity” and “integration” improve local public action and provide valuable criteria for evaluating effectiveness.

Measurements of distance in international trade of goods

Mr Łukasz Gręda¹

¹University Of Warsaw, Warsaw, Poland

G04-O3 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 28, 2025,
9:00 AM - 10:30 AM

Distance is one of the fundamental geographical concepts and a key element in various economic analyses, including those related to trade, such as the gravity model of trade. Its popularity stems from highly successful empirical analyses, despite its simplicity. Unfortunately, there is a lack of uniformity in distance measurements. It is assumed that the distance between countries can be defined as the distance between their capitals or largest cities, and less often between their centroids. However, these are not the only possible approaches. Distance can be calculated in many other ways, for instance based on average distances between multiple cities, centers of gravity, or equidistance.

An additional approach to measuring distance is provided by remote sensing methods, which allow for the acquisition of global data without concerns about data quality. Of particular potential is the data on light emissions at night, as they correlate closely with actual economic activity. Therefore, it is important to standardize distance measurements and assess the differences between various measures and their impact on analyses.

To this aim, this work develops a gravity model of trade using a variety of distance measures based on a literature review and cartographic or remote sensing methods. Using the AIC and BIC information criteria, the study determines which measures provide the best estimates. The results show that measurements based on more complex methods yield statistically better results. However, no major differences were observed between the most commonly used measures, based on capitals and the largest cities.

Rural Socio-Economic Resilience from a Gender Perspective: The Role of Labor Market Attachment

Dr. Debora Birgier¹, Dr Carlos Tapia¹

¹Nordregio, Stockholm, Sweden

S55-S2 Taking into Account Diversity to Shape just Rural Futures: Novel Indicators for Resilient and Inclusive Development, Amph 2, August 27, 2025, 2:00 PM - 4:00 PM

This paper investigates rural socio-economic resilience through a gender lens by examining how labor market attachment differs by gender and urbanization level across Europe. Women in rural areas face unique challenges—including limited access to resources, fewer employment opportunities, and heavier burdens of unpaid care—that potentially undermine both their personal well-being and the broader resilience of rural communities. By leveraging data from the European Union Labor Force Survey (EU-LFS) spanning multiple time points, the study examines how the intersection of gender and geography shapes labor market outcomes in employment, part-time work prevalence, and employment constraints due to caregiving responsibilities. In addition, it examines how welfare typology in Europe shapes this gender and rural intersection. The findings highlight three key dimensions of gendered labor market inequalities in rural and urban areas. First, gender gaps in employment persist across Europe, with rural disadvantages varying significantly. In some regions, particularly Continental and Nordic countries, rural women have higher employment rates than urban women. In Southern and Eastern Europe, rural women face substantial employment barriers. Second, part-time employment patterns show stark differences. Rural women in Continental and Nordic countries are more likely to work part-time, reinforcing traditional gender roles. In Southern and Eastern Europe, structural constraints limit rural women's employment. Third, caregiving responsibilities significantly influence women's labor market participation, particularly in Continental Europe. The paper suggests that addressing these disparities requires gender-sensitive policies in rural development strategies. This includes investments in childcare, flexible work arrangements, and addressing cultural and structural aspects of gender inequality.

Co-occurrence of Regional Exports and Imports in the UK

Dr. Agelos Delis¹, Dr Lin Zhang²

¹Department of Economics and International Business & Centre for Business Prosperity, Aston Business School, Aston University, Birmingham, United Kingdom, ²Centre for Business Prosperity, Aston Business School, Aston University, Birmingham, United Kingdom

G04-O4 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 29, 2025,
9:00 AM - 10:30 AM

Firms that make similar decisions should possess common characteristics and consequently experience similar outcomes. We adopt a similar line of thinking in our attempt to understand whether the co-occurrence of imports by UK regions provides valuable information for explaining regional economic performance. Specifically, such an analysis could map regions' coordinated import activities and their correlation with regional export patterns. This offers insights into addressing regional disparities in the UK and enabling firms in different regions to enhance their resilience in the face of recent crises, such as the pandemic and energy crisis. This issue has garnered renewed attention in the past decade, and our work will contribute to the ongoing debate on policy responses, such as levelling up initiatives (McCann and Ortega-Argilés, 2021; Fransham et al., 2023).

Drawing inspiration from computer science (Aaron et al., 2018) and finance (Lu et al., 2023; Hirschey, 2021), we construct spatial measures of firm import co-occurrences for the UK.

Using such measures allow us to capture both comparative advantage (relative international competitiveness) and agglomeration. It is well-established that both of these factors have a positive effect on productivity. Alcala and Ciccone (2004) provide evidence for the former, while Martin and Ottaviano (2001) discuss the latter. In other words, firms within regions that share similar patterns in terms of the types of inputs they import internationally are likely to experience similar trajectories in their ability to compete globally and, consequently, in their levels of productivity.

We use regional export and import data from HMRC's Regional Trade in Goods Statistics (RTS) for the period 2013 to 2024. The data are available at the International Territorial Level 1 (ITL1) basis. This means that there are regional trade data for the nine English regions and the three other nations of the UK. The frequency of the data is quarterly and annually, and the most disaggregated version is at a 2-digit SITC classification.

Our estimation approach uses a LASSO (Least Absolute Shrinkage and Selection Operator) estimator. LASSO allows for dimensionality, a large number of independent variables and the identification of the ones that are truly relevant. We find interesting patterns on the goods and country of origin dimensions that explain the variation of regional exports in the UK over time.

Housing sector in Athens: production, inadequacies, reconstruction proposals

Prof. Minas Angelidis¹

¹School of Architecture, National Technical University of Athens, Athens, Greece

G22-O2 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, B6, August 27, 2025, 4:30 PM - 6:30 PM

The housing sector in Greece, and in particular in Attica, was addressed during the country's economic crisis, very inconsistently with the declared strategies exit from the crisis. The almost deliberate shrinkage of the sector in Greece, and in particular in Attica, has contributed to the increase in unemployment and the destruction of a very important production potential, consequently to the deterioration of the urban environment and the quality of life in the Greek capital. After the crisis, the production of dwellings increased relatively limited. At the same time, many of the existing houses were converted into Airbnb tourist accommodation. The offer has, therefore, declined considerably, the market prices and rental prices for the residents of the capital have increased significantly. That is, the housing has turned into an important problem for the middle - low-income strata of Athens. The paper examines these changes in detail.

Subsequently, after a brief overview of successful corresponding policies implemented in some Community countries, we evaluate the recent policies dealing with the "lack" of houses and the rise of rents in the capital - through tax other financial arrangements and loans as well as restrictive arrangements of the Airbnb sector.

Finally, we make proposals of global (holistic) reconstruction of the housing sector with cutting actions and interventions, which: (a) prioritize the reduction of rents for the middle - low-income strata (b) are associated with appropriate urban renovations as well as with the total territorial reconstruction of the metropolitan area of Athens.

Measuring digital entrepreneurship ecosystems: Why does Europe lag behind the US?

Prof. László Szerb², Prof. Zoltan Acs², Prof. Esteban Lafuente⁴, Dr. Stefan Apostol², Dr. Judit Szakos²

¹University of Pécs, Pécs, Hungary, ²Modul University VIGS Institute, Vienna, Austria, ³George Mason University, Arlington, United States, ⁴School of Business, Costa Rica Institute of Technology (ITCR), Cartago, Costa Rica

G03-O4 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 28, 2025, 9:00 AM - 10:30 AM

The digital revolution has profoundly changed our whole life. Metamorphological alterations characterize the market processes including entrepreneurship. The complexity of these transformations requires to view entrepreneurship and digitalization from a systemic perspective. While digital entrepreneurship ecosystem (DEE) research has been rising, its measurement is still limited. Sussan and Acs (2017) provide a holistic concept of the digital entrepreneurship ecosystem in which it is positioned at the intersection of digital and entrepreneurship ecosystems. The Digital Entrepreneurship Ecosystem Index is a newly developed composite indicator that measures DEEs at country level. The four-subindices and twelve pillars of the proposed composite indicator seek to capture digital technology progress, the evolvement of platforms, institutional development and the support to digital entrepreneurs to absorb digital technologies, start or grow a new business. The sub-indices also account for the role of the most important players of DEEs, namely institutions, digital infrastructure and technology providers, and digital users. The Digital Technology Entrepreneurship, one of the four sub-indices, captures the multi-agency perspective of digital entrepreneurship and includes financials, key employees, universities, and other supporting institutions and firms that contribute to the expanded use of digital technology and the emergence of startups and scaleups.

The DEE Index is available for 170 countries during 2017-2022. Over the Covid and post-Covid era (2020-2022) the digital entrepreneurship ecosystem grew by 7.3%. However, the impact of the digital revolution drastically varies across economies. Among developed countries the US is a dominant leader while the European nations seem to show a moderate advancement especially in terms of the multi-billion-dollar worth startups and scale-ups. The US leads the DEE Index 2022 ranking followed by Denmark and the UK. For large EU states, Germany (11th), France (15th), Spain (17th), and Italy (24th) show significant disadvantage compared to the US. Going into the sub-index and the pillar level, the EU is behind the US in all pillars. The gap is the smallest in the Digital Technology Infrastructure and the Digital User Citizenship pillars, whereas larger disparities are observed in the Digital Multisided Platform components and the Digital Technology Entrepreneurship pillars, which implies less agency support to digital absorption, digital startups and scaleups. While the leading European countries are better than the US in institutions including some aspects of regulation as Digital Competition and Digital Rights, they are far from the US in the agency related pillars of Digital Absorption, Digital Startup and Digital Scaleup.

Social housing and socio-spatial segregation in the city of Bogotá, Colombia. Contradictions in the social housing market

Dr. Juan Eduardo Chica-Mejía¹, Dr Laura Amézquita, Architecte Andrés Rueda, Dr Nelcy Echeverría

¹University of Bogotá Jorge Tadeo Lozano, Bogotá, Colombia

S50 Social Housing and Socio-Spatial Segregation: New Challenges in Urban Planning, D1, August 28,
2025, 9:00 AM - 10:30 AM

Segregation has been a process inherent to urban growth processes, both from a functional and social perspective, manifested in the differential location of social groups. In this sense, socio-spatial segregation is expressed in cities through an unequal distribution of social groups, which leads to unequal access to land and urban infrastructure. Consequently, the research questions guiding this paper is how does the Social Housing (VIS for its Spanish acronym) market impact the patterns of socio-spatial segregation in urban border territories in Bogotá, Colombia? specifically in the Usme sector, to the southeast of the city. Likewise, another research question emerges: how does the production of VIS contribute to the reduction of socio-spatial segregation? or if, on the contrary, is this housing supply contributing to accelerate these processes? Therefore, it seeks to verify how the supply of social housing is largely subject to the dynamics of the real estate market, especially due to the high value of urban land. Consequently, this housing tends to be located in the lowest-priced lands in cities, many of them border territories, reproducing patterns of socio-spatial segregation and structural conditions of socioeconomic marginality. The methodology is proposed from a multidimensional and multi-scalar approach with the use of quantitative methods, from the formulation of an index to measure the socio-spatial segregation associated with this model of social housing production. The construction of the Socio-Spatial Segregation Index (hereinafter ISES) seeks the inclusion of different dimensions of urban life that synthesize the complex phenomenon of segregation without being limited to a simple measure of population distribution. This composite index aims to capture five dimensions that, in the strict sense, are desirable for social integration in the city, and therefore, are considered contrary to segregation; thus, in the formal expression of the ISES these five dimensions. The results show that social housing tends to be located in urban border areas, contributing to processes of socio-spatial segregation of vulnerable communities and thus exacerbating processes of inequity and spatial marginalization, especially due to the absence of good connectivity, aggravated by the greater distance to employment centralities, facilities, and public transport stations. Additionally, the case study shows the persistence of low levels of human capital, as well as greater deficits in the consolidation of urban form, in aspects of territory functionality, manifested in a lower land value

Empirical Analysis of the Dynamic Effects of Farmland Gift Tax Exemption Policy in South Korea

Ms Minjeong Kwak¹, Prof. Kwansoo Kim²

¹Seoul National University, Seoul, South Korea, ²Seoul National University, Seoul, South Korea

G16-O3 Statistical And Econometric Methods of Urban and Regional Analysis, F5, August 29, 2025,
9:00 AM - 10:30 AM

South Korea has achieved rapid economic growth through urbanization and industrialization, leading to a continuous decline in the proportion of rural population and agricultural income relative to urban area. To counteract this trend, the Korean government has implemented various agricultural support policies, including the Farmland Gift Tax Exemption Policy for Successor Farmers. This policy allows parents to transfer farmland to their children tax-free, reducing successor farmers' land acquisition costs and supporting the sustainability of farming.

This study empirically examines whether this policy effectively fosters successor farmers. Specifically, it evaluates (1) the policy's impact on maintaining the farming population and increasing farm income and (2) its effectiveness over multiple time periods.

Previous studies applied Generalized Propensity Score (GPS) to overcome the binary classification limitation of Propensity Score Matching (PSM) and used Difference-in-Differences (DID) to compare changes in the farming population and income before and after policy implementation. However, these approaches failed to isolate the specific effect of this policy, due to the simultaneous implementation of multiple farm income support programs. To address this issue, this study adopts Coarsened Exact Matching (CEM) to control for multiple policy benefits as a covariate, followed by GPS to analyze the policy effects as a continuous treatment variable. Additionally, Difference-in-Differences with multiple periods method will be used to examine changes in farm household age and income across two time periods, distinguishing between exclusive recipients, multiple-policy beneficiaries, or non-recipients.

Covering 2016 to 2024, the study divides this period into three four-year intervals to track policy effects. Specifically, it assesses whether the scale of farmland gift tax exemptions influences regional farm household age and income. Data from the National Tax Service (NTS) and Statistics Korea (KOSTAT) will be used to analyze tax benefit scales and farm household characteristics.

This research provides empirical evidence on the policy's impact on successor farmer retention and farm income growth. Additionally, it evaluates whether the policy should be sustained and suggests future improvements. The findings will contribute to reevaluating successor farmer policies in Korea and globally, serving as a foundation for more effective agricultural policies to combat rural population decline.

Knowledge Intensive and Manufacturing Activities: Regional Concentration Patterns in the State of Paraná (Brazil)

Dr. Alexandre Florindo Alves¹, Dr. Aline Andreotti Pancera²

¹State University of Maringá, Maringá, Brazil, ²State University of Paraná, Campo Mourão, Brazil

G16-O3 Statistical And Econometric Methods of Urban and Regional Analysis, F5, August 29, 2025,
9:00 AM - 10:30 AM

The objective of the research is to study the distribution and concentration of employment in Knowledge Intensive Activities (KIA) and the Manufacturing Activities in Paraná State, focusing on the five most employment-intensive activities in each category. The discussion is anchored in the broader debate on the industrial decentralization process in Brazil and the extent to which Knowledge-Intensive Activities (KIA) can serve as an alternative for economic diversification. Methodologically, the research relies on data from the Annual Social Information Report (RAIS/MTE - 2023), with employment figures analyzed for all 399 municipalities. The selection of the top five KIA was based on Eurostat's (2025) definition, considering the highest employment volumes, and these were compared with the five most representative industrial activities, using the same criteria. The analysis incorporated data normalization per 100 inhabitants and evaluated concentration levels using the Hirschman-Herfindahl (HH) Index and the CR10 Index. To avoid biases related to universal public-sector employment, "Public administration, defense, and social security" and "Education" Activities were excluded from the KIA dataset. The exclusion of education is particularly relevant, as state universities register employment data in their headquarters' municipalities, which could distort the real geographical distribution of higher-education employment. Findings reveal that while the Manufacturing Activities accounts for 11.26% of total formal employment, KIA contribute 4.24%. However, KIA exhibit greater spatial dispersion, with only two municipalities without employment in these activities, as opposed to 19 municipalities without industrial employment. A key structural asymmetry is the high concentration of KIAs in Curitiba, which alone accounts for 38.68% of employment in the top five KIA activities, positioning the state capital as an outlier in the dataset. By excluding Curitiba, the HH and CR10 measures became significantly adjusted. In addition, employment in the manufacturing sector remains highly concentrated, with only 1 in 5 municipalities having a significant presence. The standard deviation of industrial employment per 100 inhabitants (5.6939) far exceeds that of KIA (0.4398), highlighting the polarized distribution of manufacturing jobs, where certain locations concentrate employment while others are excluded from the manufacturing activities in question. The main contribution of this study lies in the analysis of dispersion and concentration patterns of Knowledge-Intensive Activities (KIA) and the Manufacturing Activities in the state of Paraná. This is a preliminary study, and near-future research will focus on developing more robust spatial indicators that will allow a more accurate assessment of KIA dispersion and its potential role in statewide economic diversification.

Geographical disparities in the impact of import competition on radical and incremental innovation.

Profe. Enrique Lopez-Bazo¹, Prof. Alessia Matano²

¹AQR-University of Barcelona, Barcelona, Spain, ²University of Rome “La Sapienza”, Rome, Italy
G03-O3 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 27, 2025, 4:30 PM -
6:30 PM

This paper investigates how import competition from China affects the innovation output of firms in Spain, with a focus on geographical disparities. Using data from the PITEC (Technological Innovation Panel) and trade statistics on sectoral import competition across Spanish regions from 2004 to 2013, we control for firm-level heterogeneity and address endogeneity through an instrumental variable approach. Our findings show that China's import share has a positive and significant effect on firms' radical innovation—marked by the introduction of market-new products and higher sales from them—while its effect on incremental innovation is negligible. This indicates that firms respond to Chinese competition by prioritizing groundbreaking innovations over minor product improvements. Moreover, the impact of Chinese import competition on radical innovation intensifies in regions with greater manufacturing specialization. These findings underscore the need for tailored innovation policies that address regional differences. Specifically, firms with limited innovative capacity in less specialized regions are more vulnerable to global competition and should be prioritized in place-based innovation strategies to enhance resilience and foster regional innovation.

Price elasticities of air travel demand for direct and indirect travel: a meta-analysis

Dr. Thomas De Graaff¹, Dr. Eric Pels¹

¹Vrije Universiteit Amsterdam, Amsterdam, The Netherlands

G05-O7 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 29, 2025, 11:00 AM - 1:00 PM

Air transport policy requires precise information on the price elasticity of air travel demand. This paper provides a systematic overview of the current literature on the price-elasticity of aviation demand. To do, we provide a meta-analysis on the price elasticity of passenger air transport. Following a systematic literature search, estimates of price elasticities as well as information on geographic, economic and demographic sample variables and moderator variables are recorded from the literature. A flexible and robust estimation method is used to predict how prices elasticities in direct and indirect markets vary around the sample mean, whilst controlling for study specific effects and heterogeneity. First, a theoretical model describes how prices in direct and indirect markets may influence each other. Here, capacity on a given flight is limited, and seats are allocated according to demand characteristics in the different markets served with the flight under consideration. In the next step, the theoretical model is translated to an empirical model that is used to explain why and how price elasticities differ across markets. This is not the first meta-analysis on this topic. But there have been new empirical findings in the field in the last 20 years, so an update is necessary. Moreover, the distinction between direct and indirect markets is novel and has been an issue in policy making for years: what is the effect on demand if transfer passengers pay the same tax as origin-destination passengers? And if transfer passenger are less price sensitive, then what does this imply for the local economy?

Digital government and regional inequality: different economic, social and environmental impacts

Prof. Bernardo Campolina¹, Prof. Ana Hermeto Oliveira¹, Prof. Lucas Carvalho¹, Prof. Frederico Jyme Jr¹, Ana Paula Nunes¹, Lívio Miguel Santos¹

¹Federal University Of Minas Gerais, Brazil, Belo Horizonte, Brazil

G06-O1 Space and Digital Transformation, A1, August 27, 2025, 11:00 AM - 1:00 PM

This article seeks to analyze the regional impact of the digitalization of public services in Brazil. A methodological evaluation tool was developed, which allows the economic, social and environmental impacts of the digital government solutions initiative to be measured. To this end, two case studies were simulated: Applying for an old-age pension (National Social Security Institute) and Obtaining a passport (Federal Police). The simulations carried out indicate that the implementation of digital government in Brazil has significant economic, social and environmental impacts. It can be seen that the reduction in time dedicated to travel and face-to-face services is a fundamental factor in the composition of the impacts, especially those of an economic nature. In terms of environmental impacts, digitalization reduces deforestation and CO₂ emissions, in line with green transition policies. However, environmental trade-offs need to be considered, such as the increase in emissions related to greater demand for data storage and more advanced devices. Despite the limitations, the results reinforce the role of digital government as a strategic tool for formulating inclusive, sustainable and evidence-based public policies, promoting greater efficiency and a positive impact on society. It is suggested that the model be improved with additional variables, such as age, income and modes of transportation.

Cross-scale consumption-based simulation models can promote sustainable metropolitan food systems

Dr. Francesca Rubiconto¹, Dr. Sol Maria Halleck Vega¹, Professor Eveline S. van Leeuwen¹

¹Wageningen University, Wageningen, The Netherlands, ²UNU-MERIT, Maastricht, The Netherlands

G25-O1 Enriching Research and Policy Methods in Regional Science: Digital Tools, Artificial Intelligence, Participatory Methods, Mapping Techniques, Stakeholder Involvement, Amph 3, August 27, 2025, 11:00 AM - 1:00 PM

Due to the length and complexity of supply chains, changes in food consumption patterns in one metropolitan region can transform production patterns in other sectors and countries. Therefore, they cause complex synergies and trade-offs between environmental and socioeconomic goals at the local and global level. We argue that the dissemination of cross-scale consumption-based simulation models is crucial to investigate these complex multilevel effects and promote sustainable food systems.

Time efficiency of cohesion projects in Europe: A regional panel and project-level analysis

Dr. Debora Gambina¹, Prof. Fabio Mazzola¹

¹University of Palermo, Palermo, Italy

S07 Future of EU Cohesion Policy Post-2027. In Search of an Effective Response to Major Challenges of Our Time, G4, August 27, 2025, 11:00 AM - 1:00 PM

Time overruns of public works hinder the impact of investment policies and spill over negatively on aggregate prosperity. Particularly for sustainability-related projects, postponing operations may hamper the environmental objectives. This paper highlights the regional dimension of the problem and evaluates the hypothesis that the regional conditions in which the projects are implemented affect the time efficiency of EU cohesion policy. We deal with interventions of the 2014-2020 programming period targeted at sustainable infrastructures and energy saving of SMEs and big companies by extracting the relevant information from the Kohesio database. We apply linear regression models and use survival techniques for robustness. The evaluation is carried out at two scales. In the NUTS-2 framework, the duration is explained by proxies of territorial context such as development level, urbanization and institutional quality calculated at the regional level. At a micro-level, we scrutinize the effects of regional conditions in comparison with those of project-specific features, also across categories of interventions. According to our findings, urbanization and institutional capacity turn out to drive timely completion while per capita GDP, capturing project dimensionality and complexity, does not. Moreover, we find that time efficiency increases monotonically as we approach the end of the programming period and the national cofinancing lengthens the duration especially of the incentives to large firms. Our assessment enriches the debate on regional policy effectiveness by addressing a topic that has not been thoroughly empirically tested at the supranational level by offering policy suggestions relevant to the 2021-2027 programming.

Living labs “Coming of Age”: Experimentation in Urban Energy Sustainability

Prof. Marina Van Geenhuizen¹

¹TU Delft, Delft, The Netherlands

S40-S2 Just Transition Governance: The Challenges of Justice, Place-based strategies and monitoring mechanisms, F12, August 27, 2025, 2:00 PM - 4:00 PM

This paper deals with a policy (management) tool aimed at enhancing innovation, introduced about 20 years ago: living labs. Living labs as a tool has attracted attention by policymakers for many years, thanks to the participative design for citizens, real-life settings and open innovation. However, recently, case studies reveal several tension in living labs’ practice and lack of understanding of effectiveness of results. In the first part, the paper presents a scoping literature review on the ‘state-of the art’ and concludes that application of living labs has reached a certain maturity, but still calls for attention for three important conditions, namely, a stronger anticipative learning on stakeholders’ different interests and problem perceptions, an extended ex-post evaluation on effectiveness; this alongside a stronger involvement of municipalities. In the second part, in view of improvements, the paper discusses causes of complexity in stakeholder analysis, and ex-post evaluation, and forwards a set of practical decisions to be taken. With regard to involvement of municipalities, the paper puts emphasis on desirability of a stronger and more coherent involvement in important steps in transitional change. This holds for experimentation and design of energy solutions concerning housing stock and wider facilities owned/managed by municipalities, for acting as launching customer, and eventually broader, for acting as one of the leaders of an innovation community.

University spin-off networks' double-sided influence: balancing founding teams in business performance and balancing local/regional ecosystems

Prof. Marina Van Geenhuizen¹, Dr. Mozhdeh Taheri², Prof. Associate Danny Soetanto³

¹TU Delft, Faculty Technology, Policy and Management, Delft, The Netherlands, ²University of Groningen, Groningen, The Netherlands, ³University of South Australia, Adelaide, Australia

S18-S2 University Impacts on the Local and Regional Economy, G5, August 29, 2025, 9:00 AM - 10:30 AM

Research on founding teams and early networks has been widely taken up, specifically concerning university spin-off firms. University spin-off firms (USOs) established by university staff and/or graduates, have attracted abundant attention as an important channel of commercialization of university knowledge. The reason for this attention is among others the perceived contribution of university spin-offs to diffusion of new knowledge and to dynamic entrepreneurship in regional economies, providing high-tech employment. However, USOs' early growth has remained modest in Europe since the late 1990s (e.g. Caputo et al., 2022; Hesse & Sternberg 2017), though more positive pictures have also been presented (e.g. Rodriguez-Gulias et al., 2018).

In search for understanding of small growth and differences in growth, founding teams' composition has received much attention in literature, including age, education, pre-start work experience, academic background, etc. Such studies have, however, produced several ambiguous results, like positive impacts from information richness (diversity) and also problematic impacts from team fault-lines, given strong team diversity. Furthermore, in a previous quantitative study in Northwest Europe, it was observed that founding team composition tends to negatively influence USOs' early performance, while networks - domestic social and international networks – tend to exert positive influence on this performance (Taheri, 2013).

Will They Stay or Will They Go? Entrepreneurship Education to Prevent Brain Drain in University Regions

Prof. Yvonne Von Friedrichs¹, PhD Cecilia Dalborg¹

¹Mid Sweden University, Östersund, Sweden

S67-S1 The Role of Higher Education Institutions in Unlocking Regional Innovation Potential and Overcoming Structural Disparities, G6, August 29, 2025, 11:00 AM - 1:00 PM

Knowledge is a key factor for economic growth and regional development. The demand and competition for educated people is therefore high. Brain drain occurs when highly educated people leave their university regions with no intention of returning. This often causes many problems, which in the long run also develop into a negative spiral of lack of knowledge in regions that inhibits economic growth as well as a lack of skills in important sectors. Entrepreneurship has long been seen as a driver of regional development and plays an important role in societies with its economic efficiency, as a job creator and with transfer of innovation. Previous research has highlighted the role of entrepreneurial training and education as a strategic tool for regional development, and further underpinned the importance of academia, government and business to cooperate to enhance the entrepreneurial intention in regions. Hence, entrepreneurship in Higher Education Institutions (HEI) can contribute to regional growth and economic development. As HEIs prepare students for different careers that are related to the requirements of the labour market, the HEIs can contribute to increase student employability but also enhance their entrepreneurial skills. The purpose of this paper is to increase the knowledge about European students' attitudes to their study region and to explore if promoting entrepreneurial skills could be a way to avoid regional brain drain. The following RQs are raised: 1. To what extent do European students intend to remain in their university region? 2. What is the main reason why the students choose to stay or leave their university region? 3. What attitude and experience do students have towards entrepreneurship? A web-based survey was conducted in 2024 to university students in Austria, Germany, Greece, Latvia, Poland and Sweden. The survey was distributed by the partners in the ENDORSE project in various universities. The results show that 1) good job opportunities are the most important reason for staying or leaving the study region, 2) that there is lack of knowledge among the students whether entrepreneurship is a good choice in the region or not, 3) that students consider that universities can increase students' intention to start a business by facilitate networking with important actors and provide suitable courses in entrepreneurship. The findings offer important insights into how to tackle brain drain in European regions suffering from brain drain due to that well-educated young people are leaving the university region after graduation.

Exploring trends in local government service spending: An analysis of English Local Authorities using time series clustering

Dr. Alexandros Alexiou¹, Dr. Angelos Mimis¹

¹Panteion University of Social and Political Sciences, Athens, Greece

G21-O3 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 28, 2025,
4:30 PM - 6:30 PM

Local government in England provides a wide range of services, including housing, transport, social care, public health, cultural, planning and environmental services. All of these can have a wide impact on local communities through multiple pathways. Local government spending accounts for over £100 billion (2020-21), almost a quarter of all public spending. A significant part of these funds comes from central government.

However, austerity policies implemented during the past decade have forced Local Authorities to make difficult decisions on how to deliver essential public services without the appropriate fiscal support. The overall reduction in central government funding (core spending power) was approximately 50% between 2010-11 and 2020-21, equivalent to £18 billion. Another implication regards the impact of funding cuts on inequalities. Previous research suggests that cuts were larger in more deprived areas, despite a likely higher demand for services there. Furthermore, poorer areas are more reliant on central funding, as they are less able to raise income through local taxation.

Facing such difficulties, municipal authorities in England adopted different strategies to respond to these cuts; we hypothesise that these are reflected by how authorities chose to spend their available budgets on various categories of services. In this novel analysis we aim to use longitudinal area-level data to explore local spending patterns. We compiled data on all 12 spending lines between the years 2007-08 to 2020-21, for all 314 Local Authorities in England using the Local Authority Revenue Expenditure and Financing data which are publicly available. We carry out a multivariate time series clustering using per-capita spending measures. We follow a similar approach to a geodemographic analysis, where we describe the resulting clusters and map the geography of local government spending trends across England. We use the 2019 Index of Multiple Deprivation to explore the relationships between trends in spending and deprivation patterns.

Preliminary results show that cuts were not evenly distributed among service areas. Local government has statutory responsibilities to provide some services –such as social care– and as such they have maintained the level of service in these, whilst cutting discretionary services, such as transport, housing, cultural and planning services. There is significant correlation with deprivation patterns, as more deprived areas tend to cut more on discretionary services than more affluent ones. Some geographical clustering also occurs at Regional level, perhaps reflecting differences in underlying macroeconomic and social conditions; while London Local Authorities form their own cluster.

Examining the socio-economic impact of out-mobility on the origin areas: A spatial microsimulation approach

Dr. Thanasis Ziogas¹, Dr. Dimitris Ballas¹, Dr. Manos Matsaganis², Dr. Anastasia Panori³, Dr. Jianhua Zhang¹

¹University of Groningen, Groningen, Netherlands, ²Polytechnic University of Milan, Milan, Italy,

³Aristotle University of Thessaloniki, Thessaloniki, Greece

S33 Spatial Microsimulation: Methodological Advances and Empirical Applications, E1, August 27, 2025, 2:00 PM - 4:00 PM

Migration and all other types of human mobility decisions depend on both individual and contextual characteristics. Recently, the role of digital and green factors in shaping these decisions has been stressed through discussions focused on the geographical impact of the Twin Transition. However, data limitations at the NUTS2 level restrain the ability for performing empirical research in this field. This paper draws on findings from the EU Horizon MOBI-TWIN project which aims at addressing this gap by performing an in-depth analysis of the factors affecting individual decisions in relation to location choices, integrating traditional, digital, and green factors. Using unique individual-level data from the MOBI-TWIN survey, we estimate the probability of relocation for short, medium, and long-term periods using a multinomial logistic regression model while accounting for both individual and contextual characteristics. We then employ a spatial microsimulation model, in order to create synthetic population weights which we subsequently use to update the relocation probabilities for different socio-economic subgroups that were identified in the previous step using regression analysis. This approach enables us to gain insights in relation to the socio-economic profile of movers as well as the composition of the origin areas.

Evaluating how green hydrogen supply chains affect society and energy justice

Dr. Jacopo Bindi¹, dr Francesco Bartolomei^{2,3}, Dr Giuseppe Pellegrini Masini¹, Dr Alessandro Agostini¹, Prof Dario Padovan²

¹Enea - Italian National Agency for New Technologies Energy and the Environment, Santa Maria Di Galeria (RM), Italy, ²Department of Cultures, Politics and Society, University of Turin, Torino, Italy,

³Department of Science, Technology and Society, IUSS Pavia, Pavia, Italy

S62 A Changing World: Balancing Economic Growth with Sustainable Energy Transitions, E12, August 29, 2025, 11:00 AM - 1:00 PM

The present study proposes a comprehensive and versatile framework for assessing the social impacts and energy justice concerns of green hydrogen supply chains. This is achieved by employing a capabilities and human rights-based approach. In light of the accelerating global efforts to decarbonise the energy sector, green hydrogen is emerging as a crucial component in the replacement of fossil fuels, the attainment of energy security, and the fulfilment of climate targets. While the prospect of a transition to a hydrogen economy is undoubtedly promising, it is imperative that the process addresses significant social justice challenges, both within Europe and in the context of global trade. This study underscores the need for the implementation of energy justice principles, encompassing distributive, procedural, and recognition justice throughout the hydrogen value chain, to ensure an equitable transition. The present analysis explores the selection of the relevant capabilities to be considered in the examination of the social impacts of hydrogen penetration into European and international energy systems. In order to support the argument for selecting capabilities that may be impacted by hydrogen supply chains, theoretical links are drawn between capabilities and human rights theories. The exploration of socially relevant aspects is exemplified through a comprehensive review of extant literature from both technical and social science disciplines pertaining to green hydrogen supply chains. Moreover, the findings of empirical studies on subjective well-being have provided a foundation for differentiating between the maintenance and growth capabilities of individuals, thereby enabling a multifaceted evaluation across a broad range of dimensions. The framework is conceived as a tool that can be used to guide empirical research in order to assess the social impacts of energy transition scenarios. It provides indications of social sustainability to support the design of policy.

Females in a Leadership Position: Are there regional patterns?

Prof. Stephan Brunow¹, Prof. Alina Sorgner², Dr. Michaela Fuchs³

¹University of Applied Labour Studies, Schwerin, Germany, ²John Cabot University, Rome, Italy,

³Institute for Employment Research (IAB), Halle, Germany

S27-S1 Gender Equality in Regions in Europe and Beyond, D12, August 27, 2025, 4:30 PM - 6:30 PM

The reduction of gender inequalities in labour market outcomes is strongly debated in the EU and in Germany. All these studies consider obviously the distinction between women and men. The empirical evidence shows, which characteristics are correlated with the observed differences. There might be discrimination, glass-ceiling effects, and other factors to the disadvantage for females. Alternatively, there might be self-selection and gender-specific differences in tastes and preferences, leading to inequality (which is not driven by lower chances).

This contribution focusses on females in leadership positions. Several studies highlight gender differences and conclude lower chances for females to get into a leadership position. Depending on the study design, however, it is very cumbersome or even impossible, to achieve deeper insights into the question, which females get in leadership positions. This is the departure of our research and we focus on females in leadership positions and compare them with females (instead of males) in non-leadership positions. This consideration enables us to identify characteristics that are correlated with the chance to become employed in a leadership position. With this evidence, we derive policy measures that focusses on females that are more prone to get a leadership position. Our first evidence shows that there are region-specific patterns. Especially females in peripheral regions are more likely to hold a leadership position compared to agglomerated, dense areas. In our study, we intent to disentangle the regional composition in more detail. However, our first evidence suggests that better skilled females of age 45 to 54 and which are mothers, are most likely to get into a leadership position; besides the regional heterogeneity.

We derive these results with a Panel of 10% of all females working in Germany subject to social security contributions, which is provided by the German Institute for Employment Research (IAB). We cover the years 2012-2018 and intent to prolong the data basis up to 2023. Besides unobserved female and employer characteristics, we consider several groups of females at the labour market and their likelihood to become into a leadership position by using logit and multinomial logit models.

Currently only a German Bachelor Thesis covers the results in a written form. We apologize this inconvenience.

Sustainability and Academic Entrepreneurship: A multiple case study of Brazilian University incubated Startups.

Ms Anastasia Patsouri¹, Prof. Fabio De Oliveira Paula²

¹PhD Student , Berlin , Germany, ²Professor , Rio de Janeiro , Brazil

YSS5, G5, August 28, 2025, 11:00 AM - 1:00 PM

Innovation and entrepreneurship are critical drivers of sustainable development, particularly in the context of university startup ecosystems. As global challenges such as climate change, social inequality, and economic instability intensify, the role of entrepreneurial ecosystems in fostering sustainable innovation has become a key area of academic inquiry. University startups, as hubs of knowledge-intensive entrepreneurship, serve as catalysts for economic growth while also addressing pressing environmental and social issues through novel business models and technological advancements. However, the extent to which these startups integrate sustainability into their core strategies remains an open question.

This study investigates the preliminary impact of academic entrepreneurship on sustainable development by analyzing Brazilian university startups, from Rio de Janeiro and São Paulo. Using a multiple case study approach, it examines how these ventures navigate sustainability as a whole but also the intersection market demands, environmental responsibility and their ecosystem dynamics. Through structured interviews and secondary data analysis, this research explores their business models, value propositions, and strategies for aligning with the United Nations' Sustainable Development Goals (SDGs). Additionally, it assesses the role of entrepreneurial ecosystems—including incubators, universities, investors, and policymakers—in supporting sustainable innovation. In total 30 interviews are conducted; 25 with startup founders and 5 with incubator managers from the 5 different university incubators.

Despite the growing emphasis on sustainability-oriented entrepreneurship, several academic debates persist. How do resource constraints affect the ability of startups to implement sustainable practices? To what extent do universities and incubators provide the necessary support for sustainability-driven ventures? How can impact measurement frameworks be standardised to assess the economic, social, and environmental contributions of startups? Furthermore, the role of government policies and financial incentives in shaping sustainable entrepreneurship remains a contested area, on the effectiveness of various regulatory approaches.

This research contributes to the broader discourse by highlighting the motivations, challenges, and strategic decisions of university startups operating within a sustainability framework. It underscores the need for stronger institutional support, multi-stakeholder collaboration, and policy interventions to enhance the role of academic entrepreneurship in driving long-term sustainable development. By addressing these open academic questions, this study aims to advance theoretical and practical insights into the evolving landscape of sustainable innovation and entrepreneurial ecosystems.

Quantifying Resilience Complexity: A Multi-Shock, Multi-Layer Approach to EU Regional Challenges

Dr. Giulio Breglia¹, Prof. Marco Modica¹

¹Gran Sasso Science Institute, L'Aquila, Italy

G01-O3 Urban, Regional, Territorial and Local Resilience, B5, August 27, 2025, 2:00 PM - 4:00 PM

This paper develops a comprehensive, quantitative multi-shock, multi-layer resilience index for NUTS-2 level EU regions, addressing the pressing need for robust tools to assess and enhance regional adaptive capacity. The index builds on insights from a systematic literature review, adopting a multi-layer perspective that encompasses regions, firms, and households to capture the dynamics of resilience drivers and markers across economic, social, and environmental dimensions.

Data are sourced from Eurostat, Copernicus, and national statistical offices, integrating variables that reflect key aspects of resilience, such as economic stability, social cohesion, environmental vulnerability, infrastructures, and institutional capacity. The construction of the index employs advanced statistical methods, including principal component analysis, and incorporates principles from complex systems theory. The methodology conceptualizes resilience as an emergent property of interconnected systems, where interactions between variables and feedback loops are critical in shaping adaptive capacities. This dynamic approach aims to account for non-linear responses to shocks and cascading effects across layers.

The index is designed to be tested against a range of global and local shocks from the last decades, including the Covid-19 pandemic and major natural disasters, providing a critical evaluation of its capacity to capture regional differences in adaptive responses. Findings are expected to shed light on the factors that contribute to regional vulnerabilities and strengths, offering valuable insights into how different systems respond to complex and interlinked shocks.

This study represents a significant contribution to the resilience literature by providing a scalable, multi-layered tool for assessing regional adaptive capacity. It aims to inform policymakers and stakeholders in designing targeted interventions that enhance resilience at all levels, helping regions better prepare for and recover from future crises.

Zooming into Regional Innovation Traps in Europe

Prof. Michael Fritsch¹, Dr. Ann-Marie Sommerfeld, Prof. Michael Wyrwich¹

¹Friedrich Schiller University Jena, , Germany

S35 The Geography of Innovation: Advancing Knowledge on Industrial Districts and Clusters, E1,

August 29, 2025, 11:00 AM - 1:00 PM

We investigate regional innovation output in terms of patenting per population over the period 2000-2020 in the European NUTS2 regions.¹ While innovation activities in European regions exhibit in general a pronounced tendency of convergence, some of the lagging regions show at best only little improvement and fall further behind. One might say that these regions are captured in an innovation trap, a trajectory that constitutes a certain type of development trap. Development traps may indicate a dynamic ‘market failure’ that suggests a case for policy intervention.

In a first step, we discuss several approaches to identify regions that may be considered to be in an innovation trap. We then analyze the characteristics of the regions that are considered problematic according to the different definitions. Comparing them to regions with low levels of innovation activity in the base year but significant improvements over time, aim at identifying reasons for stagnation versus drivers of growth. In the analysis, we also regard different measures for the types and quality of patents such as ‘radicalness’ and ‘originality’. Overall, regions that may be considered to be in an innovation trap are a rather heterogeneous group. This implies that there is no one size fits all approach when it comes to policies aimed at improving innovation performance but rather specific regional characteristics should be taken into account.

Specialisation and economic performance in British regions 2015-2022

Dr. Konstantinos Melachroinos¹, Professor Nigel Spence¹

¹Queen Mary, University of London, London, United Kingdom

G02-O2 Regional Growth Models, Competitiveness, and Convergence, B1, August 27, 2025, 4:30 PM - 6:30 PM

The relationship between regional specialisation and economic performance is a contested issue. Although from a theoretical viewpoint it is often assumed that specialisation improves regional competitiveness, the empirical evidence so far is particularly thin. Recent research has provided clarification of the meaning of the term and codification of the variety of forms that it can take. Furthermore, it is now possible to situate each type of specialization measure in an appropriate conceptual context from a regional economic growth viewpoint. The aim of this paper is to use these advances to judge whether a region specialising in an economic activity, whatever that may constitute, is a positive influence on its economic performance however defined. More specialization, or less, can occur naturally, organically or by design and intervention. Whatever is the driving force for changing levels of specialization, it is important to understand probable impacts on economic outcomes. Here the lens is focused on British regions, a territory comfortable with notions of industrial diversification and its importance since the time of the Barlow report eight decades since.

The Power of Representation: Investigating the Impact of Female Mayors on Women's Turnout in Italy

Dr. Chiara Baggetta¹, Prof. Anna Bottasso¹, Dr. Gianluca Cerruti¹, Prof. Maurizio Conti¹

¹University Of Genoa, Genoa, Italy

S27-S3 Gender Equality in Regions in Europe and Beyond, D12, August 28, 2025, 4:30 PM - 6:30 PM

This paper examines whether the election of female mayors influences women's voter turnout in Italian municipalities between 1993 and 2023. Using a Regression Discontinuity Design (RDD) that exploits close electoral races between male and female candidates, we estimate the causal effect of female political leadership on women's political participation. The results indicate no significant effect when considering the full sample. However, in municipalities with fewer than 20,000 inhabitants and in more recent elections, we find that electing a female mayor increases women's turnout by approximately 3 percentage points. Robustness checks, including alternative bandwidth selections and placebo tests, confirm the validity of our findings. Additionally, we evidence stronger effects in municipalities with higher social capital, greater female labour force participation, and in northern Italy. These findings contribute to the literature on gender and political engagement, highlighting the role of local political representation in shaping electoral behaviour and the conditions under which role model effects are more pronounced.

The Entrepreneurial Urban Productivity Premium

Dr. Pontus Braunerhjelm², Dr. Emma Lappi¹

¹Aarhus University, Herning, Denmark, ²Royal Institute of Technology (KTH), , Sweden

G03-O2 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 27, 2025, 2:00 PM - 4:00 PM

Entrepreneurship is unevenly distributed across space in how much individuals engage in new business activities and what kind of firms they start. This leads to ample reasons to believe that entrepreneurship experience has differential returns in cities versus more rural areas. We evaluate the earnings differential across urban and rural areas and also know the urban wage premium, especially for entrepreneurs. We compare the returns to entrepreneurship experience across the urban-rural divide for entrepreneurs to regular wage employees. In addition, we measure the actual productivity premium of their firms across different places. We dis-entangle sorting from actual agglomeration forces by using Swedish geo-coded register data for a population of private sector entrepreneurs between 2010 and 2020. Because of the detailed nature of the data, we evaluate the urban-rural divide not only on earnings and productivity but also differentiate several types of entrepreneurship experiences. The findings show that entrepreneurs earn around 4.4 percent more in cities than in rural areas. This is around one percentage point more than the urban wage premium of employees who gain 3.3 percent more in urban areas. Even when estimating the effect of sorting, the results still show that entrepreneurs gain more from agglomeration economies. The returns to previous entrepreneurship experience are also significantly higher in cities for both the entrepreneurs and employees. On the other hand, we find no urban productivity premium for the previous experience for firm productivity.

The Digital Shift: Exploring the Nexus Between Remote Work and E-Commerce

Mr Dimitrios Manoukas¹, Dr Federica Maria Rossi¹, Mr Tomasso Cigognetti¹

¹Technical University Of Milan, Milan, Italy

G06-O4 Space and Digital Transformation, A1, August 29, 2025, 2:00 PM - 4:00 PM

The rapid increase of remote work and the growing prominence of e-commerce have significantly reshaped both professional and consumer behaviors with additional territorial effects. Advances in digital technologies enable employees to perform their tasks away from traditional office settings, thereby affecting work routines and spatial organization. At the same time, online shopping has become increasingly popular among consumers, prompting the expansion of business-to-consumer (B2C) platforms and transforming last-mile logistics. These parallel trends hold considerable implications for urban growth and regional development. By focusing on the interconnection between remote work and online shopping, this study contributes to a broader understanding of how digital shifts influence everyday life, consumption patterns, and territorial transformations.

The Multiscope Italian National Survey on Families – “Aspects of Daily Life” by ISTAT is a survey that gathers essential information on individuals’ and families’ daily activities. In its latest editions (2021 and 2022), it introduced questions about the increasing trend of working from home. By combining this information with e-commerce preferences, it becomes possible to assess the propensity of remote workers to shop online and to explore the connection between these two expanding digital trends, which are shaping the lifestyles of millions of people.

This study aims to shed light on the relationship between remote work and online shopping, analyzing the strength of this link (objective). To achieve this, an econometric model (logit model) is employed to examine the relationship between these two phenomena (methodology). Considering data about online shopping preferences and remote work ability and habits, we attempt to explore the profile of the consumers, in accordance with their territorial and demographic characteristics. These upcoming digital trends interconnect both with work-life balance and the economic context of the consumers and their locality.

Our findings provide valuable insights for scholars, logistics companies, and policymakers, helping them better understand the evolving habits of individuals in both work and consumption patterns along suggestions for future research on the impact on their respective territory.

Disentangling the effects of internal high-skilled migrations on regional economic performance: The case of Italy

Mr Giulio Castellano¹, Prof Gaetano Vecchione¹, Prof Viktor Venhorst²

¹University Of Naples Federico II, Naples, Italy, ²University of Groningen, Groningen, The Netherlands

S03-S1 Drivers and Impacts of Migration: New Insights on the Role of Labour Markets, Demographic Change, Human Capital and Networks, G6, August 28, 2025, 9:00 AM - 10:30 AM

This work intends to contribute to the literature on the consequences of regional skilled migration on origin regions. More specifically, it aims to investigate the impact of regional skilled migrations in Italy on human capital accumulation and, in the last resort, on economic growth of Southern Italian regions.

Skilled migration reduces the human capital endowment in the origin regions, with a negative effect on labor productivity and, eventually, on economic performance. In addition to this direct effect, skilled migration might also influence economic performance through an indirect (human capital) channel, as migration prospects can influence individual agents' educational choices. This transmission mechanism is formalized in a theoretical framework drawn from the model of Boeri et al. (2012) for international migrations. To test the existence of the hypothesized mechanisms, preliminary OLS estimates with fixed effects are run. Then, to allow for spatially heterogeneous effects, we interact the migration rates with a South-North dummy and a categorical variable for the degree of peripherality of provinces based on the concept of "inner areas".

Finally, an IV 2SLS strategy is adopted in order to control for the endogeneity of migration. Fixed effects are included in order to reduce the omitted variable bias. This empirical strategy is run using regional data from official statistical sources (ISTAT and Ministry of University and Research) for the period 2004-2022.

Understanding the geography and causes of housing price changes in the European Union

Dr. Riccardo Curtale¹, Mattia Marconi, Ricardo Barranco, Silvia Iodice, Filipe Batista e Silva

¹European Commission, Ispra, Italy

G22-O2 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, B6, August 27, 2025, 4:30 PM - 6:30 PM

The European Union is facing growing concern on housing price increases and affordability, particularly in urban centers. In response, the European Commission included housing affordability as one of its priorities for the 2024-2029 period, appointing a dedicated commissioner and task force. While immigration and short-term rentals are frequently cited by media and politicians as primary causes of these price hikes, no comprehensive EU-wide study has yet identified the underlying factors. In this study we aim to fill this gap by generating new evidence at the EU level, mapping housing prices and affordability at the Local Administrative Unit (LAU) level. We utilize diverse data sources, including census data, Eurostat, TripAdvisor, and insights from the ESPON House4All project, to analyze the spatial distribution and dynamics of housing prices and affordability. We aim at identifying the factors influencing housing prices, such as supply-demand imbalances, population dynamics and the magnitude and impact of unoccupied dwellings and short-term rentals. By investigating these elements, our study aims to provide a robust evidence base to inform policymakers, urban planners and stakeholders contributing to the definition of strategies for a sustainable urban development across Europe.

Resilience, Network Connectivity and Regenerative Economy: A Study in the Western Balkans

Dr. Umut Türk¹, Prof. Dr. John Östh², Prof. Dr. Aura Reggiani³, Prof. Dr. Jelena J. Stanković⁴, Dr. Ivana Marjanović⁴, Dr. Marija Džunić⁴, Dr. Marina Stanojević⁴, Dr. Marina Toger⁵

¹Abdullah Gül University, Kayseri, Türkiye, ²Oslo Metropolitan University, Oslo, Norway,

³University of Bologna, Bologna, Italy, ⁴University of Niš, Niš, Serbia, ⁵Uppsala University, , Sweden

S01-S3 The Spatial, Regional and Urban Dimensions of Circular Economy, Amphitheater II - SAKIS

KARAGIORGAS, August 27, 2025, 4:30 PM - 6:30 PM

This research examines economic resilience and network connectivity in the Western Balkans within the framework of a regenerative economy. It explores long-term population changes using open-source geospatial and population data, offering a novel approach to resilience assessment in data-scarce regions. The study investigates how network connectivity and spatial factors, such as road density, urban features, and economic opportunities, influence demographic shifts as a proxy for resilience.

Using population census data, OpenStreetMap-derived urban features, and road network distances between cities with over 50,000 residents, the study applies Weighted Least Squares regression to analyze key determinants of population change. Results indicate that cultural and financial amenities support resilience, while child-rearing facilities correlate with population decline. Road network density enhances resilience in origin cities but can hinder it in destination cities. Language similarities also play a role in sustaining population stability.

Among spatial interaction models tested, the log-normal function best captures these dynamics. The findings highlight distinct resilience patterns across cities, providing insights into urban development and policy-making. This study demonstrates the value of open-source data and advanced modeling in understanding economic resilience and demographic trends in regions with limited traditional data sources.

Environmental Innovation, Competitiveness, and Employment: Insights from Climate-Vulnerable European Regions

Dr. Francesca Rubiconto¹, Professor Bart Verspagen²

¹Wageningen University, Wageningen, The Netherlands, ²UNU-MERIT, Maastricht, The Netherlands

G03-R Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B4, August 27, 2025, 4:30 PM -

6:30 PM

Environmental innovation offers the potential to reduce emissions while fostering income and employment, particularly in regions highly vulnerable to climate impacts. This paper investigates whether environmental innovation can address the structural challenges of Southern European economies such as slowing demand, persistent unemployment and climate vulnerability. While previous literature has explored the relation between environmental innovation, competitiveness, and employment, findings remain ambiguous and often conflicting. The main challenge arises from indirect demand effects, differences between types of innovation, and regional socioeconomic structures that can influence these interactions and shape innovation outcomes. By bridging the broader literature on innovation with the emerging studies on the economic effects of environmental innovation in the specific regional context, this paper provides policy recommendations and new research directions on the nexus between innovation, competitiveness and employment in climate-vulnerable regions.

The Digital Transition and the EU Cohesion Policy: Firm-level evidence

Dr. Giulia Valeria Sonzogno¹, Prof. Mara Giua, Prof. Eleonora Pierucci, Prof. Francesco Crespi, Dr. Marco Sforza

¹Roma Tre University, Roma, Italy

S80 Challenges and Opportunities for EU Growth and Convergence: Climate Change, Digitalization, and Knowledge Diffusion, F5, August 29, 2025, 11:00 AM - 1:00 PM

The digital transition is a strategic priority for the European Union, with significant implications for firm competitiveness and territorial cohesion. EU Cohesion Policy has played a key role in financing digitalization projects through investments in digital infrastructure, advanced training, and technological innovation. Despite the scale of these interventions, there is limited research on their actual impact at the firm level. Existing studies primarily focus on macroeconomic and regional effects, leaving a gap in understanding how digital investments influence firm's digitalization, competitiveness and productivity.

Previous findings suggest that digital investments positively impact firm competitiveness, but their effectiveness varies by sector, firm size, and regional context. Firms in less developed regions benefit from digitalization but often face challenges related to absorptive capacity, institutional efficiency, infrastructures availability, and technological opportunities. This highlights the need for complementary policies that enhance local capabilities alongside financial investments.

This study addresses this gap by analyzing the impact of EU-funded digitalization projects under the 2014–2020 programming period on beneficiary firms. By focusing on the Italian case and leveraging project-level data from the OpenCoesione dataset and firm-level data on digital technology adoption, a counterfactual econometric approach is applied to assess the causal effects of cohesion policy intervention on firm's digitalization.

By providing new evidence on the firm-level effects of digital transition policies, this study contributes to the broader debate on digital transition. The results emphasize the importance of policies that align digital investments with regional needs, ensuring an inclusive and effective digital transformation.

These insights have critical implications for policymakers, suggesting that future digitalization strategies should integrate financial support with capacity-building initiatives. As Europe navigates multiple transitions—digital, green, and industrial—it is essential to design policies that maximize the benefits of digitalization while addressing territorial disparities. This research provides empirical evidence to inform more effective digital transition policies, offering valuable insights for scholars, policymakers, and practitioners working on regional development and innovation policy.

Enhancing Implementation Success in Cohesion Policy and Next Generation EU. A Machine Learning Approach

Dr. Giulia Valeria Sonzogno¹, Prof. Mara Giua, Dr. Francesca Micocci

¹Roma Tre University, Roma, Italy

S76 Innovative Economic Policy Approaches in the era of transformations. Topics, Data, and Methods,

D1, August 29, 2025, 2:00 PM - 4:00 PM

The Next Generation EU program (NGEU) mobilises an unprecedented amount of resources to foster resilience and economic recovery. However, the scientific debate on how to successfully use these resources is still limited. This paper wants to inform and guide the implementation of NGEU for the successful use of these resources by identifying which difficulties might hamper the implementation and results and how they can be mitigated. Given the similarities between Cohesion Policy and Next Generation EU in terms of aim, governance and territory of intervention, we leverage the long experience of the Cohesion Policy as a laboratory to collect evidence on what types of intervention work in practice, in which composition and for whom, and with which governance models. With particular reference to the Italian case, we employ Machine Learning algorithms for policy-oriented predictive analysis, utilizing granular data on all individual projects funded by the EU Cohesion Policy for the 2014-2020 programming period in Italy, together with relevant location-specific covariates. The granularity and extent of such data will maximise the predictive power of Machine Learning routines and their comparative advantage over traditional methods, allowing us to forecast project success - defined as the achievement of project targets, and project delay - while identifying key territorial factors and project-specific characteristics that explain outcome heterogeneity. To account for non-linearities in the data, we employ both linear and tree-based models. The comprehensive nature of the data enables the identification of heterogeneity sources across project and municipality types, providing policymakers with evidence-based guidance to refine resource allocation, and shed light on selection criteria for targeting rules.

The Geography of the Green Transition: Big Promises, Uneven Outcomes

Dr. Giulio Breglia¹, Dr. Giulia Valeria Sonzognò²

¹Gran Sasso Science Institute, L'Aquila, Italy, ²Roma Tre University, Rome, Italy

S81 Europe's New Industrial Policy: a Friend or a Foe for Regional Convergence?, F12, August 28, 2025,
9:00 AM - 10:30 AM

The green transition is a defining challenge for economic and environmental policies, yet its spatial distribution remains highly uneven, raising concerns about territorial equity. While sustainability policies aim to mitigate climate change and foster resilience, they interact with existing regional disparities, potentially reinforcing inequalities (Iammarino et al., 2019). The European Union (EU), through Next Generation EU (NGEU), integrates climate goals into post-pandemic recovery strategies, allocating 37% of the Recovery and Resilience Facility (RRF) to green projects (Commission, 2019). However, how these investments translate into territorial development remains largely unexplored. Using Italy's National Recovery and Resilience Plan (NRRP) as a case study, we classify over 92,000 green projects through a GPT-supervised clustering approach and analyze their socio-economic determinants using a multinomial logit model. Our findings reveal significant spatial disparities: metropolitan regions attract high-value investments, while peripheral and less-developed areas focus on low-value sustainability measures. These results underscore the need for place-based strategies to ensure a just transition. By integrating machine learning with spatial analysis, this study advances the understanding of sustainability policies and provides a methodological framework for assessing green transition initiatives.

From Collaboration to Knowledge Flow: Mapping Government-Funded Agri-Tech Networks

Dr. Pei-yu Yuan¹, Prof. Raquel Ortega-Argiles¹

¹University Of Manchester, Manchester, United Kingdom

S10 The Knowledge and Technological Relatedness of UK National and Regional Economies, G5,

August 29, 2025, 2:00 PM - 4:00 PM

Knowledge diffusion is fundamental to innovation, enabling actors to exchange ideas, build on research strengths, and develop new technological capabilities. However, the efficiency of knowledge exchange depends on network structure—whether it is well-connected, fragmented, or overly reliant on redundant ties. Understanding these characteristics is critical as they shape knowledge flow and overall network performance.

This study examines knowledge network connectivity using government-funded project collaboration data, with a focus on the Agri-Tech sector. The UK government has made sustained investments in Agri-Tech, from the 2013 Agri-Tech Strategy to the 2018 Industrial Strategy, which allocated £90 million to transforming food production. Despite extensive research on collaboration networks, the circulation of knowledge within them remains underexplored. By assessing network determinants, we aim to determine whether Agri-Tech knowledge networks contain sufficient, excessive, or insufficient structural bridges for effective knowledge diffusion.

Using the Gateway to Research (GtR) database, we apply an LLM-based classification to identify relevant projects through project descriptions and keywords, validated by domain experts and policy documents. Data City's keyword library is integrated to enhance classification accuracy. Firms within the Agri-Tech sector are flagged, and their involvement in projects is analyzed. A collaboration network is then constructed, where nodes represent participating organizations and edges denote project-based collaborations.

This study develops a framework for knowledge network identification, leveraging co-publications, co-patents, and citation flows. Applying network science and percolation analysis, we examine:

Network structure: Is the network fragmented or well-connected?

Bridging sufficiency: Are there enough structural bridges for interregional diffusion?

Redundancy and inefficiency: Do some connections fail to enhance diffusion?

Potential bridges: Which new interregional links could improve knowledge flow?

Using betweenness centrality, structural hole analysis, percolation threshold testing, and weighted link analysis, we identify critical, redundant, and missing bridges. Additionally, we explore how related variety—the presence of complementary knowledge domains—affects diffusion dynamics. By simulating the impact of new and removed bridges, we offer policy insights to enhance network efficiency and interregional knowledge exchange.

This study advances research on knowledge networks and spatial diffusion, providing policymakers with strategies to strengthen collaboration, ensure resilient knowledge diffusion pathways, and foster innovation.

New forms of commoning to revitalise mountain villages: examples from Alpine participatory grocery shops

Mr Loïc Giaccone^{1,2}, Ms Leïla Kebir^{1,2}, Mr Emmanuel Reynard^{1,2}

¹Institute of Geography and Sustainability, Lausanne University, Bramois, Switzerland,

²Interdisciplinary Centre for Mountain Research, Lausanne University, Bramois, Switzerland

S87-S2 Territorial Transitions: Exploring the Scene of Participatory Actions and Common, G4, August 28, 2025, 4:30 PM - 6:30 PM

Populations living in mountain regions of the Alps are facing many challenges, both environmental and socioeconomic, requiring profound transitions for those territories. On the socioeconomic side, remote villages far from urban centres are experiencing a decline of local services and, in some cases, a decline of their population as well. It is in this context that local and self-organised collective actions have recently emerged in several places in the Alps (Landel & Koop, 2018, Gros-Balthazard et al., 2024, Grison & Gros-Balthazard, 2024), some of which being described as “new mountain commons” (Gros-Balthazard et al., 2024). Commons can be defined as a model of collective resource governance, in which a community establishes its own rules for the access, use and management of a resource (Ostrom, 1990). Over the recent past, new forms of collective management of other types of resources, known as the “new commons” (Hess, 2008), have emerged also in mountain regions. In Switzerland, these new mountain commons take a variety of forms, such as self-help groups for parents, cooperatives for local goods and services production, mountain heritage restoration associations, ski-lift management organisations and participatory cafés and grocery shops (Gros-Balthazard et al., 2024). As part of the ComMount research project on new mountain commons, this work focuses on participatory grocery shops located in Swiss mountain villages. Do these initiatives help maintain or even recreate social bonds within villages, while contributing to the transition to more sustainable lifestyles? We use the concept of growth-independent social innovations and the approach of innovative milieux to analyse the characteristics of these initiatives and their contribution to local territorial development (Mayer et al., 2021, Tschumi et al., 2021). Following the methodology of the ComMount research project*, we present results from qualitative analyses of semi-structured interviews with members from three case studies of recently created participatory grocery shops located in Valais, Switzerland. Preliminary results show that these new mountain commons participate to a form of not growth-oriented local development; they participate to local economy by giving priority to local products and enable residents to obtain goods nearby while becoming involved in those initiatives.

*Mountain COMmons: questioning past and present Commons to address territorial development issues in MOUNTain areas (ComMount), Swiss National Science Foundation, grant n°212414

Mountain huts as commons? Exploring various forms of commoning in mountain huts in the Swiss Alps

Mr Loïc Giaccone^{1,2}, Ms Leïla Kebir^{1,2}, Mr Emmanuel Reynard^{1,2}

¹Institute of Geography and Sustainability, Lausanne University, Bramois, Switzerland,

²Interdisciplinary Centre for Mountain Research, Lausanne University, Bramois, Switzerland

S87-S1 Territorial Transitions: Exploring the Scene of Participatory Actions and Common, F5, August 27, 2025, 4:30 PM - 6:30 PM

Collective actions to manage resources of recent origin, known as “new commons” (Hess, 2008), have been observed in many regions of the Swiss Alps (Gros-Balthazard et al., 2024). Among the various categories of resources managed by these communities are mountain huts used for recreational activities such as hiking and mountaineering. In addition, traditional resource management institutions, historical commons, are still active in several Swiss regions (Ostrom, 1990, Haller et al., 2021), some of them managing mountain huts. Little is known about the organisations and communities that collectively manage mountain huts. This work presents an initial portrait of the characteristics of mountain huts as “commons”, here defined as a community that manages a resource (i.e. the hut) with its own set of rules (Bollier, 2020). Based on a field survey and semi-structured interviews, different forms of ownership and management of huts are studied in the canton of Valais, including both guarded and unguarded huts accessible by hikers. The results show a great diversity of cases in terms of organisation and structure, accessibility to the huts and user participation in their management, presenting various forms and levels of commoning, i.e. the social practices involved in the management of shared resources (Euler, 2018, Bollier, 2020, Agrawal et al., 2023). The traditional institutions of the historical commons in the Valais region, bourgeoisies and consortages (Haller et al., 2021), are found to be involved in many ways, either in the form of “historical commons in transition” (Angiolini, 2025) in the case of converted former pasture huts, or in the form of new commons with the creation of mountain huts dedicated to recreational activities. In some cases, particularly in huts run by volunteers, collective management seems to offer advantages in the context of the current challenges facing mountain huts, such as climate change (Miczka, 2022) and decrease of visitor numbers (Mourey et al., 2023), as dependence on profitability is less important than in commercial huts.

From Jobs to Wages: Evaluating the Complex Effects of Place-Based Policies in Brazil

Dr Denis Alves, Dr Raul Silveira Neto, Dra Tássia Oliveira

¹PPGECON/UFPE, Caruaru, Brazil, ²PIMES/UFPE, Recife, Brazil, ³SUDENE, Recife,
G20-O2 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 28,
2025, 9:00 AM - 10:30 AM

The study evaluates the impact of the FNE, Brazil's main place-based federal policy, in the state of Pernambuco from 2000 to 2017. The empirical strategy uses a recent difference-in-differences estimator with multiple time periods, along with a unique set of firm-level data that allows us to control for the influence of other policies, such as credits from FDNE and BNDES, as well as tax incentives from Sudene and Prodepe (the local development policy). The exclusive policy results, free from the influence of benefit accumulation in both the short and long term, indicate that the FNE has positive effects on job creation and payroll, although it results in a reduction in average wages. We also observe stronger effects for firms located in the semi-arid region—specifically, those farther from the metropolitan area of Recife—along with microenterprises and those in the trade and services sectors, which showed better outcomes. Furthermore, we demonstrate that combinations of place-based policies can improve results for beneficiary firms, with findings showing that these combinations, including those with non-place-based credit (such as BNDES credit), can increase average wages.

Disaster's Shadow: The Overlooked Impact of Floods, Cyclones, and Tornadoes on Violence against Women and Girls in Mexico

Ms Miriam Berretta¹, Professor Daria Denti¹

¹Gran Sasso Science Institute, L'Aquila, Italy

S43 Regions at Risk: Climate and Weather Extremes in Local Perspective, F5, August 28, 2025, 4:30 PM - 6:30 PM

This study investigates the impact of exposure to natural hazards—specifically floods, cyclones, and tornadoes—on the incidence of violence against women and girls (VAWG) in Mexico from 2008 to 2023. While the nexus between disasters and violence against women has long been denounced by international organizations, causal quantitative studies remain limited. Some studies have found an effect of droughts and earthquakes on VAWG, but to the best of our knowledge, no prior research has examined the effects of floods, cyclones, and tornadoes on VAWG using counterfactual methods.

To identify instances of VAWG at the municipal level, we utilized official hospitalization data provided by the Mexican government's health department, classified according to the 10th International Classification of Diseases (ICD-10). These data span from 2008 to 2023, encompassing 34,348 violent events across 602 municipalities. Following established literature, we selected 495 codes considered likely to be associated with episodes of VAWG. Data on disasters were taken from the Mexican National Centre to Prevent Disasters (CENAPRED) by selecting all events classified as disasters. The dataset reports 7,922 events between 2000 and 2023, across 1,578 municipalities. Other variables related to political violence, organized crime violence, social-unrest-related violence, share of female population, and share of unemployment by gender were used to run the balancing tests. The final dataset includes all the variables matched by municipality and aggregated at the monthly level.

Our study investigates the causal relationship between exposure to the above-mentioned disasters and the occurrence of VAWG by employing a staggered difference-in-difference methodology. Following the recent development of the staggered diff-in-diff, we ran a two-way fixed effects model that allows for heterogeneous treatment effects between groups or over time. The estimation considered two settings: the hit by the disaster using a disaster binary indicator, and the different intensity of the disaster (continuous treatment) according to the economic effect and deaths caused by each disaster.

Preliminary results show a significant increase of 0.41 in VAWG hospitalizations four months after the occurrence of the disaster. The results hold with different lengths of the treatment. Several factors may contribute to the delay in the observed increase. For instance, in the aftermath of a disaster, hospitals may be overwhelmed, and women may prioritize caring for their families, preventing victims of violence from seeking medical attention. Finally, incidents of violence may gradually rise, requiring hospitalization after some time.

The impact of war in Ukraine on the spread of populist and anti-EU political parties' attitudes in Poland

Dr. Anna Lewczuk¹, Dr. Kateryna Zabarina¹

¹Uniwersytet Warszawski / University of Warsaw, Faculty of Economic Sciences, Warsaw, Poland

S77 The Geography of Political and Life Discontent, G3, August 27, 2025, 11:00 AM - 1:00 PM

In our paper we aim to analyse the geographical patterns of the spread of Polish voters' tolerance for parties' populist rhetoric and anti-EU position between the lower chamber elections in 2019 and 2023. Our particular focus is on the effect of the outburst of war in Ukraine in 2022 on the spread of the abovementioned attitudes.

For the purpose of our study we follow the definition of populism proposed by Mudde and Kaltwasser (2017) highlighting that it is "a thin-centered ideology that considers society to be ultimately separated into two homogeneous and antagonistic camps, "the pure people" versus "the corrupt elite," and which argues that politics should be an expression of the "volonté Générale" (general will) of the people".

To assess the impact of the war in Ukraine on the spread of voters' tolerance for populist and anti-EU attitudes of political parties, we propose a spatial empirical model forecasted on a county level data in Poland. Based on the county level lower chamber election results and the Chapel Hill Expert Survey data we propose an index capturing the change in the intensity of voters' tolerance for parties' populist rhetoric and anti-EU position between the elections of 2019 and 2023 (the details on the index construction are presented in the paper). What is more, we proxy the impact of war in Ukraine on the voters' perception of populism and anti-EU sentiments by accounting for the distance of a given county from the Polish-Ukrainian border. We aim to provide the answer to the following research question: Is the county's proximity to the Polish-Ukrainian border correlated with voters' tolerance for populist and anti-EU attitudes of political parties? What is the sign of a correlation?

To our best knowledge it is the first study focused on explaining the micro-scale populist/anti-EU voting patterns in Poland taking into account the impact of proximity to conflict in Ukraine and using the advanced spatial econometric models. Preliminary results suggest that distance is a significant factor for both voters' tolerance for populist and anti-EU attitudes of political parties.

Youth migration and innovation in the periphery

Prof. Madalena Fonseca¹

¹University of Porto, 4150-564 Porto, Portugal

G24-O4 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 29, 2025, 2:00 PM - 4:00 PM

Most studies on innovation in the periphery focus on companies. This is understandable, since the main objective of policies aimed at strengthening innovation in the periphery is to better understand and find ways to boost the economy of these regions. In fact, whether it's technological or other innovations, the basis of studies on innovation in the periphery is the analysis of companies' behaviour. The institutional context, human capital and migration, infrastructure and other resources of the regions are not ignored, but the necessary consolidated tools to explain how these factors work and interact do not yet exist. It is necessary to continue developing methodologies to analyse these links and interactions, both quantitative, using various indicators, and qualitative.

Based on previous studies on student migration to the periphery in Portugal for access to higher education, using Ministry databases, we have arrived at the fundamental patterns of student mobility between the centre and the periphery and within the periphery itself (Fonseca, 2023; 2025). This article builds on these first studies and presents the results of a complementary, qualitative approach resulting from corporate interviews with all higher education institutions in the intermediate cities of the periphery, i.e. outside the main urban centres. The fieldwork and interviews covered top managers, rectors and presidents of institutes, directors of social action services and student representatives. The first results show that despite the importance of the student flows to the periphery, due to their size, diversity, origins and fields of study, they are not "visible" and have so far not received any special treatment or fixation policies. This study aims to open up perspectives for actions and policies to welcome and retain these students' flows in peripheral regions, considering their true potential for innovation. They are flows of talent and human capital and can recreate the attractive innovative environments of the big cities on the periphery, even if to a lesser magnitude.

Revived collaborative workspaces and the local youth: a spatial approach to case studies from Spain, Denmark, and Ireland

Mr Dimitrios Manoukas¹

¹Panteion University of Social and Political Sciences, Athens, Greece

G19-O4 Urban, Regional and Local Policy Evaluation, G3, August 29, 2025, 9:00 AM - 10:30 AM

The proposed presentation will attempt to intertwine three research topics that are often explored in the multidisciplinary fields of Regional Development and Cultural Studies: collaborative workspaces, youth, and social innovation. Based on qualitative data collected in the regions of Extremadura (Spain), Aarhus (Denmark), and the Southill area of Limerick (Ireland) where the FUNDECYT-PCTX incubator and technological park, the Institut for (X) collaborative initiative, and the Southill Hub are located, the research brings together these aspects through a spatial and place-based methodological approach. The peripheral aspect of the processes in place will also be highlighted as all spaces constitute revived or rebranded initiatives.

Based on research findings by the Cowork4YOUTH EEA program and the REMAKING Horizon Project, the presentation explores three research questions: the role of the spaces in fostering social innovation, the impact on the local youth, and the transformative effects on the region. The PhD researcher visited each of the spaces for 3 weeks and collected data through semi-structured interviews and focus groups with either young beneficiaries and trainers or stakeholders. This data will be analyzed through a spatial approach that aspires to reveal the dynamics that support youth employment and community engagement while taking into consideration the evolution of these spaces in time and their connection with local regeneration efforts. The objective is a meta-evaluation of collaborative spaces as ‘learning middlegrounds’ and their role in fostering social and digital innovation.

The Effect of Urban Rail Transit Access on the Social Integration of Ethnic Minorities: The Case of Exogamy

Dr. Orsa Kekezi¹, Dr. Andreas Diemer, Professor Carina Mood, Professor Jan Jonsson

¹SOFI, Stockholm University, Stockholm, Sweden

S14 Migrant Integration Challenges and Policies, F1, August 28, 2025, 4:30 PM - 6:30 PM

The past few decades have been characterised by a rise of residential segregation of racial and ethnic minorities in many developed economies. Sweden is no exception to this trend. This development is concerning due to potential negative effects of segregation on several outcomes such as education, employment, income, or health. In this project, we propose to examine the issue of segregation from a different yet arguably very relevant angle than what is typically considered. Literature in economic geography and economics suggests that, because of residential segregation, different groups of people may be unequally exposed to different types of amenities, particularly in urban spaces. Urban amenities, in turn, can materially influence socioeconomic outcomes beyond their consumption utility, by offering a productive return.

Building on this notion, we study the patterns and consequences of differential access to urban amenities for different social groups, focusing on ethnic minorities relative to the native majority in Sweden. Specifically, this paper relies on transit network innovations to study how improved URT access influences the integration of foreign-origin individuals with native-background ones and society more in general. We consider the case of exogamy (marriage outside one's own ethnic group), which is an instance of cross-groups social interactions that we can observe and quantify. Exogamy is a particularly stringent test for social integration, because only a small fraction of interactions across groups eventually transitions into a marriage. Any effect on exogamy we detect, therefore, implies an equal or larger effect on social ties. We restrict our analysis to Stockholm's URT, which displays significant variation over time. We define URT access as the walking time to the nearest station's entry or exit point.

Our findings will document the effect of access to an important type of urban amenity on the integration of ethnic minorities. In addition, they will inform policymakers and city planners about a potentially overlooked benefit of transport improvements --- all the more relevant as Stockholm's URTN is being expanded with 10 new stations and 20 km of extra lines.

How to coordinate cross-border mobility policies?

Mr Vilmos Oszter¹

¹KTI Hungarian Institute for Transport Sciences and Logistics, Budapest, Hungary

G14-O2 Left Behind Areas, Insularity, Inner Areas and Border Regions, B4, August 28, 2025, 9:00 AM - 10:30 AM

Border areas frequently encounter constrained public transport services, even within their own country or region. In instances where cross-border considerations are present, services are often found to be uncoordinated or even non-existent across border sections, even within the context of an EU member state or Schengen area. Mobility and transport-related policies are often confined to addressing domestic transport issues, overlooking the necessity of providing cross-border services. In an effort to address this deficit, seven project partners from six EU member states have collaborated to enhance their policy instruments, which are transport or mobility plans at the regional and national levels. These partners originate from diverse regions within the EU, encompassing both more and less urbanised, as well as developed and less developed areas, including both new and old EU member states. The identified policy gaps in the policy instruments are attributed to the following factors: the inefficiencies of public transport, and its complete absence in certain areas. A well-developed cross-border public transport system contributes to increased accessibility of mobility services to all social groups in an environmentally sustainable way. The detailed policy instrument analyses identified challenges, and proven good practice policy recommendations have been designed to resolve them. The analysis and interventions encompass technical, legal and environmental dimensions, all of which impact border permeability and thus quality of life and regional development potential.

Energy poverty: perspectives from Dutch municipalities and win-win business models

Mr Chuma Ebere¹, Dr. Erkinai Derkenbaeva¹, Dr. Sol Maria Halleck Vega¹, Prof. Eveline van Leeuwen¹, Dr. Bardia Mashhoodi¹

¹Wageningen University & Research, Wageningen, The Netherlands

G10-O5 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 29, 2025, 2:00 PM - 4:00 PM

Grid congestion and energy poverty pose significant challenges to Dutch municipalities, limiting access to affordable, sustainable energy and hindering local energy transition efforts. While national policies aim to accelerate decarbonization, they often fail to align with municipal energy needs and socio-economic realities, leaving vulnerable groups overlooked. This study investigates these gaps by conducting in-depth interviews with municipal decision-makers, identifying their challenges, priorities, and opportunities in navigating the energy transition.

Our findings reveal disparities in local governance approaches, highlighting both successful interventions and policy misalignments that contribute to inequities in the transition. We assess the effectiveness of current business models for energy transition, emphasizing the need for win-win strategies that balance economic, social, and environmental goals. By comparing municipal responses, we identify key success factors and propose optimized business models tailored to local conditions, ensuring more equitable and efficient energy transitions at the municipal level.

This study contributes to the literature by bridging the gap between top-down energy policies and local realities, offering scalable, municipality-driven solutions to address grid congestion, energy poverty, and sustainable energy integration.

The Heterogenous Effects of the EU's Cohesion Fund

Dr. Ilias Kostarakos¹, Dr. Angelos Alexopoulos², Dr Petros Varthalitis², Christos Mylonakis³

¹European Commission, Sevilla, Spain, ²Athens University of Economics and Business, Athens, Greece, ³CEMFI, Madrid, Spain

G20-O5 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 29, 2025, 2:00 PM - 4:00 PM

Recent empirical research has attempted to shed light on the impact that Cohesion policy, the largest investment initiative of the EU, exerts on regional economic performance. Despite the ever-increasing volume of research contributions, the literature has still not reached a consensus regarding the sign of the impact and its (statistical) significance.

The aim of this paper is to provide an ex-post evaluation of the regional effects of Cohesion policy, focusing on one of the least studied instruments: the Cohesion Fund. Using a novel dataset that covers the entire universe of Cohesion Fund expenditures since its inception, we draw on recent developments from the causal inference literature in order to estimate region- and time-specific treatment effects. Specifically, we adopt the matrix completion approach, a generalization of the synthetic control method of Abadie et al. (2010) that relaxes some key assumptions of well-established causal inference methods, like the differences-in-differences approach.

We find that, on average, the Cohesion Fund exerts a positive and persistent effect on the level of GVA per capita. The majority of the impact materializes within the first seven years that the region is under treatment. However, the region-specific analysis highlights that the results are quite heterogeneous, with the relatively poorer regions being the ones that exhibit the largest in magnitude effects. Moreover, we uncover a non-linear, inverted U-shaped relationship between the treatment intensity (Cohesion Fund expenditures as a share of output) and the size of the treatment effect. Lastly, our results indicate that –on average- recipients of the Cohesion Fund grew at a faster pace compared to the counterfactual scenario in which they do not receive the funds.

Labor Market Shocks and Mobility - Evidence from Administrative Data During the Pandemic

Mr Alessio Garau¹, Mr Giovanni Sulis¹, Ms Silvia Balia¹, Ms Daniela Sonedda²

¹Univeristy Of Cagliari - CreNoS, Cagliari, Italy, ²University of Insubria, Varese, Italy

S38-S2 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),

E14, August 27, 2025, 2:00 PM - 4:00 PM

During crises, labor markets transform in ways that reshape employer strategies and worker mobility. Exploiting Italy's mandatory sectoral shutdowns during COVID-19, we analyze how forced closures in non-essential industries affected workforce transitions. Using a difference-in-differences framework and the CICO dataset (13% Italian workforce sample), we track employment trajectories over 2008–2022. We find that shutdowns significantly increased transitions to unemployment, especially among physically or mentally demanding occupations, which face elevated stress and limited remote work options. Re-employment possibilities also declined, particularly for older and migrant workers. By categorizing occupations using physical and psychosocial burden indices, we reveal distinct heterogeneous patterns in how workers respond to crisis-driven disruptions. Highly educated individuals exhibit lower unemployment risk, probably because they can benefit from more remote opportunities, while migrants and residents in Italy's South encounter more significant employment challenges. These findings underscore the importance of occupational characteristics in shaping labor market adjustments and highlight remote work's protective role. Our work contributes to the understanding of how shocks impact labor market dynamics and carer paths, underscoring the interplay between occupation-related burdens and workers' characteristics.

Sensing the Integration of Cross-Border Regions in Europe from the Mobilities of People: A Big Data approach

Dr. Olle Järvi¹, Prof. Ate Poorthuis³, Håvard Aagesen², Dr. Tuomas Väisänen¹, Michaela Söderholm¹

¹University Of Helsinki, Helsinki, Finland, ²Norwegian University of Life Sciences, Norway, ,
Norway, ³KU Leuven, , Belgium

S47-S2 All Eyes on Border Regions: Enhancing Cross-Border Cooperation through Data-Driven Policy Support, Amphitheater I - SAKIS KARAGIORGAS, August 28, 2025, 4:30 PM - 6:30 PM

One of the main objectives for the EU is to enhance integration and cohesion within internal border regions by strengthening political, economic, and social ties through cross-border cooperation and governance. While institutional and economic ties across borders are well examined and understood, the perspective of people are less known. Besides potential access to cross borders, actual interactions of people and their cross-border practices are challenging to capture. Yet, these social interactions contribute to the (re)production of functional cross-border regions.

To narrow this research gap, we stem from the conceptual framework of mobility as a tool to understand society and propose to use mobile big data sources to capture mobilities of people. Mobility reveals cross-border interactions of local people, which can characterize how a border region functions across the border.

Here, we examine all internal border regions in Europe using social media data as an example to empirically examine flows of cross-border mobilities. By separating flows from both side of a border, we show how the proportion of directionality, temporal rhythms and spatial extent of cross-border flows enable to capture the interaction patterns of cross-border regions. The multilayered analysis of given interactions reveals various clusters that characterize integration structure and level of cross-border regions – e.g. higher integration levels with mutual interactions, average integration level with mixed interactions and lower integration level with one-way interactions. We conclude by addressing how digital sources, in general, and mobile big data specifically can benefit research and practice for policy and planning of cross-border regions in the European Union and beyond.

Food Sector Criticalities in Mediterranean Region: What to Measure and the Data Needed for Accounting?

Dr. Dario Cascione¹

¹Crea, Roma, Italy

S65 Accounting Sustainability in the Mediterranean Region, A5, August 29, 2025, 9:00 AM - 10:30 AM

Agriculture is one of the primary sector in the economy, necessary to ensure the food security in developing region. Productivity of this sector is measured and monitored over time at statistical level, as a key economic indicator. This sectoral perspective of the economy does not consider the present context of development and the sustainability at planet level.

The process of globalization has linked local economies in a global market and raised transnational issues, such as climate change and related migrations of fauna and flora in different regions. With these, new harmful organisms threaten some local historic crops. Some examples of structural breaks of natural resources due previously unknown diseases and parasites are evident in the Mediterranean area.

Which measurements and data are useful for policies to keep the planet's productive capacity? How should be expanded the accounting system for agriculture and the food sector to respond to the new policy needs? In this paper, in the light of some examples of real problems in the Mediterranean area, the necessary information developments will be analyzed.

Building Recovery Policies After an Earthquake: A Tale from Italy

Professor Maria Gabriela Ladu, Professor Nadia Fiorino, Dr. Alessia Mastrangioli, Dr. Riccardo Persio

¹University of L'Aquila, L'Aquila, Italy

G08-O3 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, Amphitheater I - SAKIS KARAGIORGAS, August 27, 2025, 4:30 PM - 6:30 PM

This paper investigates the impact on the labor market of the most recent earthquakes occurred in Italy in 2009 (L'Aquila), 2012 (Emilia-Romagna), and 2016 (Central Italy). In particular, we analyze sectoral specification in the affected municipalities, using a difference-in-differences approach with multiple time periods.

The novelty of this study is twofold. First, we would like to highlight the importance of the local dimension. Therefore, the analysis is conducted at the municipal level, presenting a higher granularity and accuracy. By doing so, we strive to offer a clear insight into the seismic areas that experienced the most disruption depending on the territorial specialization, as well as those that lead the recovery. On the other hand, our analysis considers both the demand and supply sides of the labor market, an approach not previously undertaken in the previous literature, to the best of our knowledge. Our identification strategy relies firstly on the Principal Component Analysis (Jolliffe, 2002) to synthesize the covariates and address multicollinearity issues and then on the difference-in-differences approach with multiple time periods (Callaway and Sant'Anna, 2021) that compares the pre- and post-earthquake situations in affected and not affected municipalities by observing a timespan from 2004 to 2021.

Findings show that the effects vary based on the level of destructiveness of the earthquake. The shock tends to alter both the sectoral distribution and other demand characteristics. Specifically, firms in sectors less affected by the reconstruction process lean to reduce their size.

Risk management systems for occupational safety and health – An attempt to evaluate the effects of incentives

Ms Elena Ragazzi¹, Ms Eva Dettmann², Ms Lisa Sella¹

¹CNR-IRCrES - Istituto di Ricerca sulla Crescita Economica Sostenibile, Torino, Italy, ²IWH, Halle, Germany

S29-S2 Counterfactual Methods for Regional Policy Evaluation, E1, August 29, 2025, 2:00 PM - 4:00 PM

The National Institute for Insurance against Accidents at Work (INAIL) provides incentives to firms to invest in occupational safety and health in Italy. Incentives are devoted primarily to small and micro firms in high-risk sectors and are granted for various measures to increase safety and health at work. During the so-called click day, eligible firms can apply for this program. After a first verification, the firms are selected according to the principle “first come – first serve”.

We exploit this design to estimate the effect of the funding of risk management systems (RMS) on the incidence of accidents and severe accidents. The policy design causes several problems of non-compliance to treatment decision, such as a comparably large number of firms that drop out on the way from being selected to the actual funding, or firms that invest with own funds when not selected. For this we use different administrative data sets of INAIL (ISI funding data, information on occupational accidents, and firm data) and enhance the data base by ORBIS balance sheet data as well as ACCREDIA certification information of RMS. The resulting rich database enables us to describe the funded and non-funded firms and to estimate the effect of funding.

The study builds on previous research (Sella, Ragazzi, Radin 2023; Sella, Ragazzi, Dettmann 2023), in which some effects were found, but the results were not robust. In this paper we apply a non-parametric IV model to control for the dropouts.

Doughnut Destinations. A New Concept for Sustainable Tourism Development Strategies?

Prof. Jan Van Der Borg¹

¹KU Leuven, Heverlee, Belgium, ²Ca'Foscari Venezia, Venezia, Italy

G15-O6 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness, Quality of Life, B6, August 29, 2025, 2:00 PM - 4:00 PM

The misallocation of tourism capital (overtourism and undertourism) that stems from these resources to being commons might find a possible interpretation following the innovative vision of a sustainable pace of economic development that was designed by Raworth (2017). She conceptualizes the state of the global economy comparing it to a doughnut.

Her theory can easily be declined into a vision of the development of a destination that combines both forms of unsustainable tourism development together with that of optimality in sustainability terms.

The doughnut destination has, very much like the global economy, two boundaries: an external one and an internal one. The “external boundary” corresponds to the maximum tourist flow that a tourist destination can support before the impacts become unsustainable. The “internal boundary” of the donut represents the threshold below which the destination is not yet benefiting socially and economically from tourism. Sustainability according to Raworth means decisively overcoming the internal boundary, but at the same time respecting the external one. Hence, pursuing sustainable tourism development for a destination means both using tourism to “be able to satisfy the primary needs of people”, but without being so intensive “as to go beyond planetary boundaries”.

The crossing of the ecological boundary presents similarities with what is known as the tourist carrying capacity or TCC (see for example Costa and Van der Borg, 1988). The exceeding of the TCC involves the emergence of a negative (environmental) damage incompatible with the sustainability of the destination. Ergo, overtourism is, therefore, to need not to overcome the external boundary of the (tourism) donut. Representing a tourist system using the metaphor of the doughnut helps to better understand the political dilemma destinations finally need to address adequately: how do you create wealth and wellbeing for the destination without harming it, and what are the real causes of unsustainable tourism.

Any other simplifying search for causes, indistinctly criticizing AIRBnB and B&Bs, low-cost airlines, greedy tourism entrepreneurs, ‘uneducated’ visitors, and powerless local politicians, often leads to a smokescreen that obscures the true, fundamental causes of unsustainable tourism development processes, and, hence, to the wrong set of tourism policies.

The iconic case of Venice helps to illustrate the way the concept of the doughnut destination may help policy makers to achieve what is called balanced tourism development.

Tourism Development and Resilience in Italian Municipalities

Dr. Giulia Iannone¹

¹Gran Sasso Science Institute, L'Aquila, Italy

S58-S2 Measuring the Social Impact of Tourism in the European Union, E12, August 28, 2025, 4:30 PM
- 6:30 PM

Tourism has proved to be both a vulnerable and resilient economic sector. While previous studies have primarily examined this duality within the tourism sector itself, they have largely overlooked the impact this can have on the wider economy. This paper seeks to address this gap by investigating the relationship between tourism development and the ability of local economies to respond to and recover from shocks. First, a conceptual framework is developed to classify different types of tourism development based on the degree of reliance on tourism within the economy and the pressure tourism places on the local territory. This framework is then applied to Italian municipalities, grouping them into distinct clusters of tourism development. Using a multinomial logit model, the study examines how these tourism development types affect economic resilience, with a focus on resistance and recovery following the Covid-19 pandemic. The findings reveal that municipalities with a high correlation between tourism reliance and tourism pressure exhibited lower resistance to the initial economic shock, but showed a stronger capacity for recovery. However, when considering overall resilience – incorporating both resistance and recovery – these municipalities were less likely to achieve full resilience compared to those with more balanced tourism development. These results suggest that tourism's characteristic of being both vulnerable and resilient extends to the broader context in which tourism has developed, serving simultaneously as a driver of recovery and a source of vulnerability for local economies.

Regionalizing the Circular Bioeconomy: A Framework for Resilient and Sustainable Regional Transformation

Dr. Denise Gider¹, Dr. Christian Klar¹, Prof. Dr. Ulrich Schurr¹

¹BioökonomieREVIER, Forschungszentrum Jülich GmbH, Jülich, Germany

S53 Promoting Circular Bioeconomy at the regional level. Potentials and challenges, Amph 2, August 28, 2025, 9:00 AM - 10:30 AM

The transition to a circular bioeconomy requires regionally tailored approaches that align with local resources, governance structures, and stakeholder dynamics. While policy frameworks such as the European Green Deal outline broad sustainability objectives, their successful implementation depends on regional adaptation and systemic coordination. To address this, the BIO2REG regionalization framework defines bioeconomy model regions as structured, geographically defined areas where circular bioeconomy principles drive innovation, sustainable growth, and socio-economic resilience.

This framework builds on the practical experience of establishing a circular bioeconomy model region in the Rhenish mining area, initiated by the Bioeconomy Science Center in 2010 and expanded through BioökonomieREVIER at Forschungszentrum Jülich, Germany. Initially developed to support regional transition in response to the lignite mining phase-out, the concept has since been refined and further developed through the Horizon Europe project BIO2REG by experts and stakeholder-driven consultations and workshops. The resulting framework offers a structured methodology to identify, categorize, and support regions in their bioeconomy transitions, recognizing varying levels of maturity—emerging, developing, and mature bioeconomy model regions.

A core aspect of this regionalization approach is its nested governance model, which integrates local, regional, national, and macro-regional strategies to ensure policy coherence and effective implementation. The concept acknowledges that regions serve as operational units possessing a degree of homogeneity in bioeconomy characteristics, such as resource availability, stakeholder composition, and market access. It emphasizes systemic transformation, linking multiple dimensions—including governance, innovation, knowledge transfer, and sustainability—while fostering interregional collaboration to scale best practices and accelerate transition pathways.

BIO2REG operationalizes this framework through targeted interventions for regions, including regional network events, interregional exchanges, and stakeholder mentoring programs, providing tools for multi-level governance alignment, knowledge transfer, and cross-sectoral cooperation. Additionally, the Multi-Criteria Assessment (MCA) tool developed by UEHR at Panteion University enables regions to assess region's bioeconomy potential.

By presenting a conceptual yet implementation-oriented regionalization framework, this submission advances the understanding of how regions can structure their bioeconomy strategies, effectively translate high-level policy ambitions into concrete regional action plans and position themselves as drivers of sustainable economic transformation within the European circular bioeconomy landscape.

The impact of the Russian invasion of Ukraine on higher education and research institutions in the European borderland

Prof. Agnieszka Olechnicka¹, Dr Adam Ploszaj

¹University of Warsaw, Warsaw, Poland

S38-S2 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 27, 2025, 2:00 PM - 4:00 PM

The paper presents the results of a study on the impact of the 2022 Russian full-scale invasion of Ukraine (the first invasion began in 2014) on the universities and other research institutions in 9 European countries bordering Ukraine, Russia, or Belarus.

Research Questions

1. What is the impact of the Russian invasion of Ukraine on the functioning of research and higher education institutions in countries bordering Ukraine, Belarus, or Russia?
2. Did the negative consequences of the Russian invasion of Ukraine have a more substantial impact on institutions with a relatively worse financial situation?

Methods & data

A survey of scholars working in higher education and research institutions in Estonia, Finland, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, and Slovakia. The survey questions were developed based on 11 individual interviews with scholars from the abovementioned countries. Respondents were invited from a random sample of corresponding authors of publications indexed on the Web of Science database. The survey was conducted online (February- March 2024). It was available in English and 8 other languages used in the 9 countries covered by the study (Estonian, Finnish, Hungarian, Lithuanian, Latvian, Polish, Romanian, Slovak). We collected 3,743 fully completed surveys (response rate of 10%), with adequate representation of all surveyed countries (Estonia 334, Finland 407, Hungary 413, Latvia 486, Lithuania 527, Moldova 123, Poland 548, Romania 465, Slovakia 440).

Findings

1. Almost every fourth respondent (22.5%) reported a negative or very negative impact of the Russian invasion of Ukraine on their research.
2. The observed impact is predominantly negative, but for some, there have also been positive effects, e.g., an increase in the number of students from Ukraine or new collaboration and research funding opportunities.
3. Scholars who are more involved in international collaboration are more likely to experience the adverse effects of the Russian invasion of Ukraine.
4. Institutions in worse financial condition are more exposed to the negative impacts of the Russian invasion of Ukraine. As a result, this external shock may deepen the inequalities in the research and higher education sector, which in most of the analyzed countries was already struggling with underfunding, brain drain, and decreasing student admissions.

Temporary Reduction in Road Supply: Traffic Congestion Adjustment and Travel Behavior Adaptation

Tainá Pacheco

¹Universitat Autònoma de Barcelona, Bellaterra, Spain

S90-S2 Transport Policies Shaping Sustainable Cities and Territories, Amphitheater II - SAKIS
KARAGIORGAS, August 29, 2025, 11:00 AM - 1:00 PM

This paper investigates the effects of a temporary reduction in road supply on traffic congestion and commuter behavior, using a natural experiment in São Paulo, Brazil. The unexpected closure of a 5 km section of the city's most important road—a ring road encircling the CBD—in 2018 provides an opportunity to assess short- and long-term traffic adjustments. Using a differences-in-differences (DiD) approach and a high-frequency dataset of identified vehicle counts from more than 1,000 traffic sensors, I show that the affected area lost approximately 5% of vehicles during the period when the overpass was blocked.

I then investigate the possible mechanisms of traffic adjustment and commuter behavior following the reduction in road supply, building on Downs (1962). The road closure led to increased congestion and traffic dispersion to alternative routes (route shifting), with little evidence of departure time adjustments (scheduling shifting) or changes in mode choice—public transportation and cycling (mode shifting).

When the affected road segment reopened, traffic did not fully return to its previous levels, indicating a persistent decline in vehicle flow. This effect is particularly strong on alternative routes, suggesting some degree of stickiness or commuters learning and adopting new routes.

These findings contribute to urban transport policy discussions, highlighting that reductions in road supply, such as street pedestrianization, may not be an effective policy to reduce car dependence. Moreover, such policies can disperse traffic to other areas, and this dispersion effect should be carefully considered in policy design.

The Importance of Municipal and Regional Actors in Establishing a Regional Green Growth Regime in Western Sweden

Dr. Anna Davidsson¹, Tomas Gustavsson¹, Professor Mattias Bengtsson¹

¹University of Gothenburg, Gothenburg, Sweden

G02-O4 Regional Growth Models, Competitiveness, and Convergence, B1, August 28, 2025, 4:30 PM - 6:30 PM

To meet Swedish and European climate goals, the automotive cluster in Western Sweden is currently undergoing a rapid transition towards electrification. This entails significant challenges for the labor market as well as for the municipalities in the region.

Drawing upon qualitative interviews, this study investigates how municipal and regional actors manage the transformation processes and the challenges it involves. More specifically, we explore the potential goal conflicts associated with green transition and the importance of political governance and collaboration at different levels. Theoretically, we draw on different conceptualizations of green transition combined with a framework on regional and green growth regimes.

The analysis stresses several challenges to manage on a municipal and regional level. These involve, for instance, goal conflicts raised by investments in the welfare sector or the industrial sector and issues of permits and financing of infrastructure for energy supply, transports and public transportation. According to the interviewees, these challenges raise the need for changed perspectives and routines for local government; for a broad coalition of actors working together toward a green transition; and of a non-ambiguous, national politics that paves way for legitimacy and acceptance for change.

The analysis further illustrates that a broad coalition exists in Western Sweden, constituting a ‘social block’ involving company representatives, politicians and public officials, working for a regional green growth regime. However, actors associated with the state level are relatively absent, and municipalities and regions must increasingly shoulder responsibilities that have previously belonged to the state. This is stressed as a main challenge for the transition to move forward. Not least because the municipalities generally lack the necessary funds for the required, large-scale investments, and because their income is more volatile compared to state finances. Also, local variations of needs, resources and the institutional setting that the municipalities operate within constitute challenges for regional collaboration.

In conclusion, the regional actors act jointly in the interests of regional and green growth. With the state being relatively absent in this quest, the financial and organizational burden is high on the municipalities, also expected to bear the risks associated with the transition. This could potentially increase local inequalities within the region, with municipalities that can, or cannot, afford the changes required to accomplish a green growth. It also enforces the danger of social aspects of the transition being neglected, pushing primarily toward green growth without consideration of it also being just and socially sustainable.

Green Energy Policies: what type of impact for the territories? An analysis of renewable energy policy making in Basilicata

Ms Viola Taormina¹

¹University Of Foggia, Rome, Italy

S40-S2 Just Transition Governance: The Challenges of Justice, Place-based strategies and monitoring mechanisms, F12, August 27, 2025, 2:00 PM - 4:00 PM

This study analyzes the renewable energy policies in the Basilicata region and develops a qualitative-quantitative framework to assess the environmental, socio-economic and institutional implications of renewable energy at regional level. The study offers a methodology that can be replicated for other regions (NUTS2), highlighting the central role of local government action in guiding the energy transition towards a development paradigm that aims at regeneration, self-sufficiency and well-being of territories.

Climate change represents an imposing challenge for regions of South Italy, the urgency is due by the multiplication of extreme natural phenomena, but also by the succession of particular international contingencies that have made energy security a priority, even for local governments. Assuming that the transition to an economic model based on the concept of sustainable growth is not in itself free of contradictions, a paradigm shift requires the active and coordinated participation of all sectors of society and effective multilevel governance.

This paper seeks to contribute to the academic discussion on energy transition evaluation, proposing a framework that integrated qualitative and quantitative variables to give a territorial point of view on the implementation of renewable energy policies at local level. A composite index will be developed, with the aim to assess and monitor regional policies in the field of renewable energy with a multidimensional approach. The variables chosen for each dimension are high-references in literature and try to capture specific aspects connected to the energy sector in three different key dimensions: environment, socio-economic and governance.

Are cities in ‘left behind’ regions’ less likely to participate European mission-led policies?

Dr. Declan Jordan¹, Professor Frank Crowley, Professor Justin Doran

¹University College Cork, Cork, Ireland

S81 Europe’s New Industrial Policy: a Friend or a Foe for Regional Convergence?, F12, August 28, 2025,
9:00 AM - 10:30 AM

The emergence of mission-orientated industrial policy has seen the development of broad stakeholder-based approaches to grand societal challenges.

Mission-orientated policies require resilient and dynamic public agencies, the mobilisation of multiple industries and stakeholders, and be based on research and innovation and technological readiness (Mazzucato and Kattel, 2023). Due to these requirements, there may be differences in the ability of some cities and regions to participate in mission-orientated policies and to benefit from the outcomes of such policies. Industrial policy that relies on a mission orientation may reinforce regional inequalities, where those regions that lag in relation to research and development, technologically advanced sectors, and political power are excluded from mission-oriented policies.

While mission-oriented policies may mobilise national and supranational resources to address global, societal challenges, the spatial dimension is intrinsic to these policy goals. The principle of subsidiarity, the spatial variation in the scale and complexion of the issue, and the local knowledge of local context are critical to success.

This paper assesses whether left behind places are less likely to engage in mission-oriented policies and investigates the underlying reasons as to why this might be the case.

To do so, this paper constructs a novel dataset comprising information on EU cities’ participation in the EU Mission for Climate Neutral and Smart Cities (EU Missions, 2024). Of 705 EU cities included in the Eurostat dataset, 196 applied for participation in the mission and 88 were selected for inclusion. This is combined with detailed regional information taken from Eurostat on regional economic and demographic factors as well as established definitions of left behind places (Velthuis et al, 2024).

Using this dataset, we apply a series of probit estimations that analyse first whether cities located in left behind regions are less likely to apply for participation and second whether these cities are less likely to be selected as participating cities. The analysis controls for other factors that are associated with city performance to identify the degree to which different classifications of left behind regions (e.g. post-industrial decline, long term lagging etc.) affect cities’ engagement in EU Missions to address climate change. We provide a nuanced understanding of the potential effect of ‘left-behindness’ on participation in mission-oriented policies, through the introduction of interaction analysis which allows us to identify the degree to which variations in regional factors, such as quality of institutions, technology, and education may mitigate participation in EU Missions.

Analyzing the sustainability of agricultural transitions on a territorial scale: a framework combining territorial metabolism and resilience

Ms Emma Teillet¹, Ms Sabrina Dermine¹, M Eric Châtelet¹

¹University of Technology of Troyes, Troyes, France

YSS4, G4, August 28, 2025, 11:00 AM - 1:00 PM

Agricultural territories are facing complex transformations linked to rising input costs, price volatility, regulatory constraints and the effects of climate change. Faced with these challenges, stakeholders at different scales are implementing agricultural system transition strategies. However, these initiatives, often limited to the scale of a single farm or a sector, produce effects that go beyond these action frameworks, without their territorial impacts always being measured. It is therefore necessary to develop new conceptual tools to analyze the sustainability of agricultural transitions on a territorial scale.

This article proposes an analytical framework based on an integrative literature review of sustainability transition studies. It draws on contributions from socio-ecological approaches, particularly those developed around the notion of resilience, and from the territorial metabolism approach. In particular, we draw on work on the territorial transformation approach and the concept of territorial capability. The latter notion is closely linked to resilience, defined as the capacity of a system to adapt to change and modify its functioning.

To test this framework, an empirical application is planned for 2025 on two agricultural systems in transition in the Aube department (France): an agricultural methanization unit and the development of a hemp sector. The study is based on semi-directive interviews with the stakeholders involved and collective workshops to co-construct a representation of territorial metabolism and establish a resilience diagnosis. The aim is to identify the interactions between these local transitions and broader territorial dynamics.

By combining territorial transformation, territorial metabolism and resilience, this article proposes an operational analytical framework for assessing the sustainability of agricultural transformations. Its empirical application aims to produce decision-support tools to help stakeholders maneuver transformations towards more sustainable territorial trajectories.

How to improve cross-border cooperation in the field of health -the case of the Greater Region, through data-driven policy support?

Dr. Marie-France Gaunard-Anderson¹

¹University of Lorraine-loterr-UniGR Centre for Border Studies, Metz, France

S47-S2 All Eyes on Border Regions: Enhancing Cross-Border Cooperation through Data-Driven Policy Support, Amphitheater I - SAKIS KARAGIORGAS, August 28, 2025, 4:30 PM - 6:30 PM

The case of the Greater Region is complex because it gathers together five regions belonging to four countries (Belgium, France, Germany, Luxembourg), but it has a long experience in cross-border cooperation. It aims to develop a coherent space, to build a common cross-border living area and reduce the border barrier role. The EU encourages the development of cross-border regions as they are part of the European integration process; they contribute to economic and social cohesion and stability beyond borders. For the past few decades, cross-border cooperation has been getting stronger in different fields, such as health. Many cross-border projects have been carried out in the field of health, above all since the pandemic of Covid19 in 2020. People can cross the border to get treatment; nurses and doctors can apply for a job on the other side of the border. The mobility of patients is increasing, but that of health professionals as well. In the Greater Region, this health mobility is due above all to the attractiveness of Luxembourg, due to better infrastructures, medical equipment and higher wages for medical staff. How can we measure health mobility? It needs data to analyze the growth of cross-border crossings in the field of health. What kind of data can we find and where? It took time to collect and analyze data in the field of health, because there are many data sources scattered between the five regions of the Greater Region. If gathering data and analyzing it is fundamental to guiding policy development strategies, the question is also how policymakers can get them and use them? They are aware of the need to have reliable data to target their actions and a solution could be the creation of a cross-border health observatory, which will be necessary in the Greater Region.

Participatory foresight for testing policy relevant R&I findings for EU resilience and future preparedness

Ms Charlotte Freudenberg¹, Philine Warnke

¹Fraunhofer ISI, Karlsruhe, Germany

S42-S2 Strengthening Societal Resilience Through Policy Experimentation, Foresight and Participatory Approaches, D1, August 27, 2025, 4:30 PM - 6:30 PM

The FutuResilience project has developed innovative, science-based co-creation labs (“Future Resilience Labs”) to test policy-relevant research and innovation (R&I) findings that contribute to strengthening societal resilience and future preparedness in dealing with crises.

Through ten geographically distributed pilot cases across Europe, various stakeholders discussed and tested evidence-based strategies tailored to their specific contexts and local needs. The goal was to reduce vulnerabilities and enhance capacities to handle different types of crises. Supported by experienced foresight experts and equipped with a foresight toolbox, the ten pilot cases applied various participatory foresight methods, such as the scenario methodology, one of the most established and widely used foresight approaches.

Scenarios are coherent and plausible images of the future. They serve as mental models of alternative possible developments, enabling reflection on future opportunities and risks and supporting robust strategy building and decision-making in the present.

Foresight, in its broadest sense, is a systematic futures dialogue among stakeholders with diverse perspectives. It helps actors to explore, anticipate, and shape the future, allowing the structured and systemic use of collective intelligence.

Foresight acknowledges the inherent uncertainty of short- to long-term future developments and facilitates reflection on various possible future trajectories. By integrating multiple perspectives and methodologies, it fosters creative and long-term thinking beyond conventional forecasts and linear extrapolations.

Foresight dialogues provide both product and process benefits. They generate distributed anticipatory intelligence, offering insights into potential threats, opportunities, and options for action, which support future-oriented and resilient decision-making.

Moreover, the interactive dialogue strengthens a system’s ability to adapt to a changing environment and unlock its full potential by fostering connections and shared understanding among diverse actors and domains.

Foresight activities are a key element of capacity building in the context of resilience. They enable stakeholders not only to observe their environment more effectively but also to detect changes at an early stage.

Most importantly, foresight mobilises the necessary capacities across different system domains, particularly within innovation systems.

The session will present and discuss the participatory foresight methods used in the FutuResilience Labs and explore how these approaches contribute to testing policy-relevant R&I findings for the resilience and future preparedness of the EU.

Dos and don'ts of using firm level data for regional analysis: Methodological challenges and an application to the ORBIS database

Dr. Kenneth Fernando Castillo-Hidalgo¹, Dr. Carolina Foglia¹, Professor Camilla Lenzi¹

¹Politecnico di Milano, Milano, Italy

S91 Microdata in Regional Science, F12, August 29, 2025, 9:00 AM - 10:30 AM

This work discusses the need for and the trade-offs emerging when employing firm-level data for regional analysis.

Specifically, this work advocates for a granular approach to economic phenomena that prioritizes firm-level data, while acknowledging both the pros and the cons of comprehensive micro-level databases, and the challenges of data representation for regional studies.

Following Kalemi-Ozcan et al. (2022), this study acknowledges the limitations of existing macro-level analyses that often overlook complex firms' behaviours and interactions and proposes the use of the Orbis database, developed by Bureau van Dijk, as a tool to increase data representativeness at the firm level. While providing comprehensive information on both financial and operational aspects of firms, including ownership structures, the use of the ORBIS database is not free of challenges regarding data availability for regional measures, which may require careful imputation methods to ensure accuracy and completeness.

To illustrate the complexity of this approach, this work proposes operational guidelines for researchers to effectively utilize micro-level data in constructing regional outcome variables and offers evidence on a specific application aimed at assessing market concentration measures across European NUTS 2 regions by 3-digit NACE level industries.

In doing so, this work offers some inputs for theoretical inquiries and a practical framework for scholars and policymakers to analyse the implications of market concentration for regional macroeconomic outcomes.

The circumpolar Arctic resource frontier: does the development of transport lead to extinction of Arctic cities?

Mr Aleksandr Polozun¹, Ms Nadezhda Zamyatina¹, Mr Ruslan Goncharov¹

¹National Research University Higher School of Economics (Russia, Moscow), Moscow, Russian Federation

G14-O1 Left Behind Areas, Insularity, Inner Areas and Border Regions, B4, August 27, 2025, 2:00 PM - 4:00 PM

Technological advancements influence Arctic cities' development. The steamship era saw the emergence of coal bunkering points along the Arctic coast; during oil reserves development was a switch to shift-based development with reliance on few base cities. Now rare earth metals dominate, yet their exploitation is unlikely to spawn new cities as previous resources did. However, in this study we focus on transportation technologies shift, which also has pivotal role in Arctic settlement system. Technological development changes the role of distance and, consequently, the principles of the spatial structure of economic activity. For example, with the development of the information society, the role of distance paradoxically did not disappear, but on the contrary, increased. Distance has become especially important for innovative industries because, as Edward Glaeser puts it in *Triumph of the City*, "ideas cross corridors and streets more easily than continents and seas".

The Arctic region seems to be the opposite of cities, a zone of maximum remoteness. However, this zone is also maximally sensitive to distance, since it is transportation accessibility that is a critical variable determining economic development. So, the Arctic economy should be no less sensitive to the development of space-crossing technologies than innovation centers. A historical review shows the anomalous impact of advances in transportation technology on the development of Arctic cities. The more advanced transportation technologies became during the 20th century, the less the need to develop Arctic cities became, and the less resilient Arctic cities became due to their increasingly narrow economic specialization.

The paper proposes zoning of the Arctic territories in terms of different territorial development models corresponding to different stages of technological development: 1) natural resource development with reliance on a relatively traditional urban network, 2) natural resource development with reliance on basic cities combined with shift settlements, and 3) modern frontier areas. The paper is based on spatial analysis of the mutual location of mining sites and settlement systems in the circumpolar Arctic. The phenomenon of modern frontier regions included in global communication systems is examined in more detail with the involvement of qualitative research (including the experience of working in shift camps and base towns of resource companies). A characterization of the modern transformations of the connection between resource projects and the settlement system in the Arctic conditions is proposed, as well as an assessment of the spatial distribution of the zone of the modern variant of the Arctic frontier.

The Dynamics of Innovation Activity in Europe over the Early 21st Century: A Tale of Concentration and Transformation

Dr. Ann-Marie Sommerfeld¹, Prof. Dr. Michael Fritsch¹, Prof. Dr. Michael Wyrwich²

¹University of Jena, Jena, Germany, ²University of Groningen and University of Jena, Groningen, Jena, Netherlands, Germany

S38-S1 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 27, 2025, 11:00 AM - 1:00 PM

We examine the dynamics of regional innovation activity within Europe in the early 21st century. Patent data show that regions in Eastern and Southern Europe lag far behind their Western European counterparts. This gap is closing very slowly over time. Such a slow convergence in innovation activity may be largely rooted in the socialist legacy and the sudden transformation of political and economic systems that occurred after the demise of socialism. However, such explanations do not hold for other lagging regions, particularly those in Southern Europe. Employing a rather novel approach, we use ranks of regions within Europe and analyze changes in ranks. This allows us to investigate regions that have risen strongly in the past 20 years ('leapfroggers'). Rural regions with low population density and an under-established manufacturing sector seem to contribute to the persistence of low levels of innovation activity.

The socio-economic implications of trade across European regions

Dr. Alberto Tidu¹, Prof. Stefano Usai¹

¹Università di Cagliari - CRENoS, Cagliari, Italy

S38-S6 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 29, 2025, 9:00 AM - 10:30 AM

During the last half a century, open economies have become more and more prevalent, with even partial forms of autarky disappearing from almost every corner of the globe. Nonetheless, the socio-economic implications of trade are still far from being fully identified. A major problem with the otherwise conspicuous literature that has been produced so far is that the geographical unit of analysis has traditionally been the country. The main reason behind this limitation is that - until recently – data on the exchange of goods and services at the regional level was very scarce. As a consequence, it was not easy to confirm whether those associations that are usually assessed at the national level also hold at the regional level. Regions belonging to the same country often exhibit very different trade patterns and are characterised by very different social and economic indicators. The availability of a comprehensive dataset allows us to explore the association of trade levels in 2017 with changes in gross domestic product per capita, wages and unemployment rate in EU Nuts-2 regions in the following years. This is fundamental to understanding the actual implications of trade as it concerns not only economic growth, but also the distribution of its effects and the spatial and social inequalities that it might generate.

Can land use and parking regulation reshape a city's structure? Evidence from São Paulo, Brazil

Tainá Pacheco

¹Universitat Autònoma de Barcelona, Bellaterra, Spain

G19-O3 Urban, Regional and Local Policy Evaluation, G3, August 28, 2025, 9:00 AM - 10:30 AM

Urban policies influence the balance between agglomeration benefits and congestion costs, shaping how cities develop. Land use regulations can encourage density, fostering economic and social interactions, while transportation policies affect whether congestion offsets these benefits. Higher density has been associated with various outcomes, including productivity, wages, crime, travel speed, pollution, and overall well-being. At the same time, congestion leads to negative externalities such as employment losses, reduced productivity, environmental degradation, and road safety concerns.

This paper examines whether land use and parking regulations can reshape a city's structure without worsening congestion. In 2014, São Paulo introduced a Transit-Oriented Development (TOD) policy, which allowed higher density around high-capacity transit networks while limiting on-site parking requirements. Previously, developments were required to include at least one parking space per housing unit or per 35 square meters of commercial space. The reform enabled developers to build at greater densities without mandatory parking, with Floor-to-Area Ratios (FAR) reaching up to 4.0 near transit hubs, compared to a citywide limit of 2.0.

Prior research has shown that developers responded to the reform with a short-term increase in applications for multi-family construction permits in areas where higher densities were permitted (Anagol et al., 2023). In the medium term, an increase in housing availability (1.9%) and a reduction in house prices (0.5%) were observed in neighborhoods where densification was allowed. However, it remains unclear whether the increase in construction translated into greater population density. Additionally, the welfare gains estimated by the authors depend on the magnitude of congestion effects.

Using the same identification strategy and policy shock as Anagol et al. (2023), this paper examines whether TOD and zoning reforms successfully attracted more residents to areas with greater public transit access, increasing population density without raising congestion costs. The findings will contribute to discussions on the effectiveness of land use policies in managing urban expansion. Policymakers may draw insights into whether TOD initiatives can achieve sustainable growth while avoiding unintended congestion effects. Additionally, this research may inform future regulatory designs that seek to balance density incentives with transportation infrastructure capacity.

Passenger Flows Between Romania and Republic of Moldova as a Determining Factor in Cross-Border Cooperation: A Statistical and Econometric Approach

Ms Ana-Maria Marcu¹, Mr Adrian Domenteanu¹

¹Bucharest University Of Economic Studies, Bucharest, Romania

S07 Future of EU Cohesion Policy Post-2027. In Search of an Effective Response to Major Challenges of Our Time, G4, August 27, 2025, 11:00 AM - 1:00 PM

Through this article, the authors aim to analyze the phenomenon of cross-border cooperation between Romania and the Republic of Moldova, through a rigorous statistical and econometric analysis of air passenger flows recorded between the two countries over the past decades.

To achieve the final objective—identifying how the evolution of passenger flows influences changes in cross-border cooperation between Romania and the Republic of Moldova—the research objectives include identifying the determining factors of cross-border mobility and assessing the impact of passenger flows on economic, social, and cultural cooperation between the two countries. The analysis also incorporates a comparative component, distinguishing between different categories of passenger flows, namely those from regular flights, charter flights, and other travel purposes such as tourism or business.

Regarding the research methodology, the study proposes a rigorous methodological approach based on the gravity model and other statistical techniques, offering an innovative and relevant reference framework for developing effective public policy measures to stimulate cross-border cooperation. This is particularly important in a dynamic geopolitical context, where understanding mobility flows is crucial for promoting sustainable and mutually beneficial cooperation between all involved states. Thus, the study relies on a combination of quantitative, parametric, and non-parametric methods, with a focus on the gravity model, which is frequently used to analyze the relationships between two variables. To ensure a rigorous validation of results and a high degree of accuracy, the data have been processed using multiple methods and techniques, including: Multifactorial linear regression, to determine the existence and direction of a causal relationship between socio-economic factors and passenger flows, Pearson's linear correlation coefficient or non-parametric methods, such as Yule's coefficient (for binary/alternative variables) and Kendall's or Spearman's rank correlation coefficients, Clustering analysis, a tool used to differentiate categories based on shared characteristics of the analyzed objects and, also, Time series analysis, to examine how the phenomenon has evolved over time and to make predictions—using both mechanical and analytical forecasting methods—to estimate the trend of the analyzed variable.

Finally, after analyzing the influence of these flows on bilateral relations between the mentioned states, the last chapter is dedicated to conclusions and recommendations, formulated by the authors, aimed at optimizing cross-border mobility and stimulating cooperation between Romania and the Republic of Moldova, in order to maximize the potential identified through the analysis.

Cool Noons: a bottom-up approach to climate change adaptation for sustainable tourism

Ms Lu'u Dauxais¹

¹Avitem, Marseille, France

S79 Viable Solutions Towards Sustainable Tourism in Mediterranean Tourism Destinations, F5, August 28, 2025, 9:00 AM - 10:30 AM

Summer 2022: Lisbon 43°C - Athens 45°C - Syracuse 48°C... Experts agree that summer 2022 offers us a foretaste of the future Mediterranean climate: a climate with more extreme conditions and where heat waves are set to increase. Under these conditions, how can we imagine, conceive and realize public spaces adapted to the reality and the projections of climate changes?

Thanks to the Cool Noons project, five pilot cities (Marseille, Lisbon, Imola, Budva and Dubrovnik) will be developing and testing solutions to improve thermal comfort for residents and tourists while at the same time redesigning urban spaces with the goal of better adapting to climate challenges.

As climate change adaptations and challenges concern all of us, how do we ensure the consideration of all? What kind of tools to measure and integrate inhabitants' points of view?

Since the challenges of climate change are complex, responses, far from being simple and one-size-fits-all - the "monoculture of thought" - must be exploratory, collective and creative. The presentation wants to address the results of the Cool Noons project and reflect on perspectives for the building of the culture of ecological transition and sustainable tourism: "involving the citizen, from the vision to the end-use", through tools like surveys, workshops and online picture competition. The ecological transition and sustainable tourism implies a cultural shift from all, as much as the culture and the tourism fields need to shift to the ecological transition.

A revised classification of Italian Inner Areas: a new approach to monitoring services accessibility and territorial development

Prof Angela Stefania Bergantino², Dr Nicola Caravaggio¹, Dr Giorgio Ialenti¹, Dr Mario Intini², Prof. Giuliano Resce¹

¹University of Molise, Campobasso, Italy, ²Università degli studi di Bari "Aldo Moro", ,

S89-S1 Empirical Evidence and Policies for Sustainable and Resilient Cities and Territories, G4, August 28, 2025, 4:30 PM - 6:30 PM

The classification of Italy's inner areas has long served as a cornerstone for territorial policies aimed at addressing spatial disparities and improving service accessibility in peripheral regions. This study revisits and enhances the framework established by the National Strategy for Inner Areas (Strategia Nazionale Aree Interne – SNAI), originally defined in 2014 and updated in 2020. By providing a tool for real-time monitoring and proposing a more nuanced methodology for classifying inner areas, the present research aims to better inform policymakers on infrastructural and service-related challenges faced by non-urban municipalities. The expanded approach considers not only the traditional metric of travel time by car to the nearest urban center but also differentiates distances to key essential services – hospitals, educational institutions, and railway stations – by using the actual location of the municipal town hall rather than the geometric centroid. These methodological innovations yield a more realistic and detailed picture of service accessibility. Notably, when applying the 2020 thresholds to 2025 data, the proportion of municipalities classified as inner areas increased from 48.5% to 60.4%, signaling that peripheral municipalities have grown in number despite the allocation of approximately one billion euros since 2014. This counterintuitive finding underlines the necessity for more focused interventions and enhanced resource allocation. The study discusses the implications for territorial cohesion, the equitable distribution of public resources, and the potential for developing predictive models to guide future infrastructure development.

Unpacking the invention and the adoption of Artificial Intelligence. A taxonomy of European regions

Professor Roberta Capello¹, Dr. Carolina Foglia¹, Professor Camilla Lenzi¹

¹Politecnico di Milano, Milano, Italy

S35 The Geography of Innovation: Advancing Knowledge on Industrial Districts and Clusters, E1,
August 29, 2025, 11:00 AM - 1:00 PM

The fast development of Artificial Intelligence (AI) in recent years and the widening of AI applications in a variety of domains have raised concerns about its impact on market restructuring and the concentration of power in the market and across space.

Based on a large-scale matched patent-firm dataset sourced from Bureau Van Dijk product ORBIS-IP including AI patents filed at the European Patent Office between 1977 and 2020, identified through text mining techniques, this paper reconsiders this statement by proposing a conceptual distinction between entities participating in the invention of AI technologies and those involved in its development and commercialisation.

Based on this distinction, the paper aims to offer a taxonomy of AI invention and development at the regional level, and to highlight whether (and which types of) regions previously at the margins of the current technological landscape could approach the AI technological frontier.

This exploration sheds light on how niche realities can scale up and become significant players in the AI era, thus offering new reflections for policy fostering regional innovation and transformation.

Gender and innovation: Do women inventors prefer certain locations?

Mr Rahmi Can Yamanoglu¹, Dr Gloria Cicerone¹, Prof Alessandra Faggian¹

¹Gran Sasso Science Institute, L'Aquila, Italy

S27-S2 Gender Equality in Regions in Europe and Beyond, D12, August 29, 2025, 9:00 AM - 10:30 AM

Migrant inventors have long been recognized as key contributors to regional innovation and the advancement of technological specializations through the transfer of embodied knowledge, skills, and professional networks to their respective regions (Miguelez, 2018; Miguelez and Morrison, 2023). Despite heralding the rise of vast opportunities for receiving regions, such as economic growth, knowledge spillovers, and cross-border collaborations (Bahar et al. 2020; Oettl and Agrawal, 2008), the migrant inventor cohort is neither uniform nor value-free. Moreover, their skills alone are not the sole determinant of their opportunities. Their career trajectories are deeply shaped by gender and citizenship, which influence their migratory patterns, residential choices, and access to social, financial, and professional resources. Notably, previous research has shown that migration provides better opportunities for female inventors in patenting and innovation (Ferrucci et al., 2020) and has highlighted the need to examine these dynamics further. In this study, we recognize this complex interplay and use USPTO patent data spanning 1990 to 2011 for cross-country analysis. We identify migrant inventors and, through name-gender identification of over 75,000 records, determine their gender. We then critically examine the role of gender in determining inventor flows and explore whether and why women inventors favor certain countries. Our aim is to expand our understanding of high-skilled migration at the intersection of gender and innovation and to elucidate the varying effects of national policies on gendered inventor flows.

References

- Bahar, D., Choudhury, P., & Rapoport, H. (2020). Migrant inventors and the technological advantage of nations. *Research Policy*, 49(9), 103947.
- Ferrucci, E., Lissoni, F., & Miguelez, E. (2020). Coming from afar and picking a man's job: Women immigrant inventors in the United States. *Bordeaux Economics Working Papers*, Université de Bordeaux.
- Miguelez, E. (2018). Inventor diasporas and the internationalization of technology. *The World Bank Economic Review*, 32, (1), 41-63.
- Miguelez, E., & Morrison, A. (2023). Migrant inventors as agents of technological change. *The Journal of technology transfer*, 48(2), 669-692.
- Oettl, A., & Agrawal, A. (2008). International labor mobility and knowledge flow externalities. *Journal of International Business Studies*, 39, 1242-1260.

Circular Economy Innovation and Material Scarcity in the Icelandic Fishing Industry

Dr. Rannveig Edda Hjaltadóttir¹, Dr. Dolores Modic¹

¹Nord University, Mo I Rana, Norway

S17 Regional Science in Turbulent Times: Embracing Circularity through Multi-stakeholder Engagement, G5, August 27, 2025, 2:00 PM - 4:00 PM

Circular Economy (CE) and innovation are often presented as a key to economic growth while supporting material loops, synergies, and sustainable use of resources. With growing emphasis on CE in policy and business development, there are few extensive cases of CE innovation and business model development at the system level, industry, supply chain or regional levels. This article deals with the case of the Icelandic fishing industry and how the quota system enforced in 1983 as a response to the decline in the Atlantic cod around the island has driven CE innovation in multi-stakeholder engagement and the sustainable use of the resources. The main research question is thus: how has the Icelandic fishing industry used CE Innovation and business model development as a response to an external shock? The research is based on a qualitative dataset, including interviews, observations and secondary sources from firms and industry-level actors. The article focuses on a single case of a processing factory in northern Iceland and their co-development with supply chain actors at regional and national levels in developing systems for CE business models and innovation. Our findings show that the over 50% cut in the tonnage of cod and the allocation of yearly amounts to each ship has driven innovation and CE in the fishing industry in three main stages. First-level responses focused on securing the quality of the fish landed, innovation to ensure a higher yield of fillets and marketing efforts, and increasing material efficiency and prices. In the second stage, development is centred on products using heads, livers, and other parts, pushing the yield of each fish to 55%. The third stage focused on the full use of whole fish, with a national average of 92% in 2024. The shock presented by the quota system limiting access to raw materials has thus been a strong driver towards CE in the industry, influencing the whole supply chain and every aspect of the Business model of our case firm. Material scarcity thus drives innovation and growth through material efficiency and technology, as well as building national markets for producing high-value products from previously wasted fish parts.

Unlocking Growth in all Types of Regions – A Firm-Level Perspective

Mr Alexandre Lehoux¹, Mr Alexander Lembcke¹, Mme Hyejin Lee¹

¹Oecd, Paris, France

G02-O1 Regional Growth Models, Competitiveness, and Convergence, B1, August 27, 2025, 2:00 PM - 4:00 PM

Among the 13 OECD countries with a GDP per capita below the OECD average in 2000, ten had narrowed the gap by 2020 (OECD, forthcoming). The pace of convergence has varied widely across regions within countries, and in some cases, regional disparities have widened. Understanding what drives these regional growth differentials is crucial to unlocking their full economic potential and fostering convergence both across and within countries.

This presentation will showcase firm-level evidence from a broader OECD project currently under development, which aims to provide insights into how policymakers can promote growth in all types of regions without compromising aggregate economic performance. The first part of the presentation will establish both the growth and productivity gap existing among regions by examining micro-level data on firms across and within a subset of OECD countries, with an emphasis on showing how major events, such as the Great Financial Crisis, have been potentially key drivers in widening the gap. More precisely, this first part will leverage both balance sheet information and firms' characteristics to construct industry-by-region facts about their level of productivity (e.g., total factor productivity, misallocation), financial strength (e.g., leverage ratio, interest coverage ratio), and foreign direct investment (FDI).

The second part constructs similar measures but focuses on documenting start-up rates and venture capital investment using Crunchbase and Dealroom data. This section aims to provide a detailed analysis of entrepreneurial activity across regions by examining key indicators such as the rate of new business formation, start-up survival rates, and the amount and distribution of venture capital funding.

The final part builds on the findings from both exercises by correlating the constructed indicators with regional-level variables to identify the key mechanisms driving economic disparities. It explores a range of potential factors, including differences in regional infrastructure (e.g., access to universities, transport networks, and digital connectivity), institutional quality (such as governance effectiveness and regulatory frameworks), and the broader business environment. Additionally, it examines how industry composition interacts with local policies, including how sectoral specialisation, firm size distribution, and the presence of high-growth industries influence the effectiveness of regional policies. By integrating these elements, this section aims to provide a comprehensive understanding of the mechanisms that shape regional economic performance and offer insights into policies that can overcome the lagging growth faced by certain regions.

Stay or go? Norwegian settlement policy and probability of refugees' emigration. Quasi-experimental evidence

Prof. Liv Osland¹, Researcher Henrik Lindegaard Andersen

¹Western Norway University Of Applied Sciences, 5528, Norway

G09-O1 Migration, Mobility Patterns and Impacts Across Space, B1, August 27, 2025, 11:00 AM - 1:00 PM

Over the past few decades, millions of people have been compelled to flee and seek safety in other countries, and over time, many states have developed or plan to develop policies that are more restrictive, temporal, and which may also encourage voluntary returns. We study the emigration of refugees, who were settled in Norway under a spatial dispersal policy. Under this policy, refugees are settled administratively in municipalities by the authorities. The policy implies that refugees cannot freely choose their initial residing municipality, and there are restrictions regarding residential mobility within Norway. The quasi-experimental nature of the policy allows us to study the impacts of local contextual factors, measured, on the decision to emigrate from Norway, both in the short and the long run. Moreover, we also study individual factors which may be related to emigration patterns. Our results indicate that families who are settled in the most rural areas are more likely to emigrate from Norway. A lack of economic integration is a strong predictor of emigration, whereas having children significantly increase the probability of staying. We also find that emigration rates vary by legal status and over time, as emigration are mainly occurring during the first 2-3 years in the host country. However, overall emigration is a rare event, except for cohorts of refugees who initially had a temporary protection status.

The impact of industrial change on subjective well-being: evidence from European regions

Ms Christina Papavasileiou¹, Prof Spyridon Stavropoulos¹

¹University Of Patras, Patras, Greece

G15-O6 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness,
Quality of Life, B6, August 29, 2025, 2:00 PM - 4:00 PM

In this study, we examine the impact of long-term industrial change on the subjective well-being in European regions. More specifically we examine how industrial development in regions has an impact on the subjective well-being of individuals, controlling for individual-level characteristics, such as occupation, age, gender, education, and marital status. We apply an ordered probit model for the analysis for a long period (1975-2023). This allows us to study the impact of long-term changes in sectoral composition, such as the rise of new industries, on the subjective well-being of the European population. For the analysis, we use microdata from the Eurobarometer complemented with regional data from Cambridge econometrics. In particular, we examine the heterogeneity in well-being changes across occupational classes.

Shaken Up or Still Studying? Student Performance after the Central Italy Earthquake.

Dr. Davide Di Marcoberardino¹, Prof. Marco Cucculelli¹

¹Università Politecnica Delle Marche, Ancona, Italy

G24-O3 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 29, 2025, 11:00 AM - 1:00 PM

Natural hazards and disasters have diverse impacts on populations worldwide in different ways, including significant effects on students and educational systems. While the effects of COVID-19 on students have been extensively explored, less attention has been given to the impacts of disasters, particularly in West-European countries. This study investigates the effects of the 2016 Central Italy earthquake on the learning outcomes of primary school students using standardized test scores at the NUTS-3 level provided by INVALSI. Using a quasi-experimental design, we analyze the data through a dual methodological approach that combines Synthetic Difference-in-Differences (SDID) and event study methodologies. The findings reveal a significant negative impact on the test scores of second-year primary school students, while effects on fifth-year students are not statistically significant. Notably, the negative impact persists for approximately two years, highlighting the enduring educational consequences of disasters.

Towards a biophilic city. Resources, accessibility, and perception of green urban areas in Poland

DSc Krzysztof Rogatka¹, Mr Mateusz Kowalski²

¹Nicolaus Copernicus University in Toruń, Faculty of Earth Sciences and Spatial Management, Department of Urban Studies and Sustainable Development, Toruń, Poland, ²Nicolaus Copernicus University in Toruń, Doctoral School of Social Sciences Academia Rerum Socialium, Toruń, Poland

G19-O6 Urban, Regional and Local Policy Evaluation, G3, August 29, 2025, 2:00 PM - 4:00 PM

Over half of our planet's population lives in cities - landscapes strongly transformed by humans, struggling with many problems. The most crucial ones include the negative effects of climate change. Over the last decades, new visions of urban development have been created to reverse these negative effects. One such vision is a biophilic city where one does not visit nature; one lives in nature.

This paper presents the author's original research, the aim of which was to determine: resources, accessibility, and perception of green urban areas (GUAs) in Toruń (Poland). According to the author, these three elements are the initial determinants of the biophilicity of cities. Using the 3-30-300 concept, research assumptions were constructed regarding the first two elements: (1) the share of GUAs in the total area of the city and each urban unit is at least 30%; (2) the share of the zone 300 m to the nearest GUAs in the total area of the city and each urban unit (after excluding GUAs themselves from the total area) is at least 50%. The assumption regarding (3) perception is the strong attachment of city inhabitants to nature and the high assessment of GUAs.

To verify the assumptions, geospatial analyses were performed in the QGIS software. The research area constitutes the city of Toruń, divided into twenty urban planning units (UPUs). Data from publicly available sources were used for the analyses, e.g., Urban Atlas (UA), and Open Street Map (OSM). The research's time scope covered the years 2018-2022. Additionally, a survey was conducted among city inhabitants (N=525), which concerned the perception of green areas (February-March 2024).

The analyses confirmed the research assumptions (1) and (2) for the entire city area. The constructed theses have not been confirmed in relation to all UPUs. It should be concluded that the resources and accessibility of GUAs in Toruń are generally good - they exceed the established limit values of indicators. However, unevenness in their distribution was observed. There are UPUs with very high indicators, and small resources and poor accessibility of GUAs characterize others. As for assumption (3), it was also not completely fulfilled. The city's inhabitants were strongly attached to nature, but GUAs' assessment should be considered average.

Regulation and (eco)innovation: a causal inference approach

Dr. Nadiia Matsiuk¹, Prof Giulio Cainelli, Prof Roberto Ganau

¹University Of Padova, Padova, Italy

G03-O2 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 27, 2025, 2:00 PM - 4:00 PM

In this paper we propose a simple model of the relationship between regulation and two types of innovation: eco innovation, aimed at reducing environmental impact of firm products or activities, and conventional innovation, with no such impact in mind. In our model, government environmental regulation leads to eco-innovation, which in turn affects conventional innovation through firms' innovative capability and R&D. We then proceed to test whether our model is supported by the Community Innovation Survey (CIS) data through causal inference methodology. We find prevailing support for our hypotheses, with regulation having a positive effect on both eco- and, indirectly, conventional innovation. Our results have a clear message for policy makers: regulation, that seeks to decrease environmental impact of economic activities, tends to increase the overall innovative performance of firms.

The Role of Territories in the Success of Circular Economy Revolution

Dr. Alessandro Cusimano¹, Dr. Federico Fantechi¹, Prof. Fabio Mazzola¹

¹University Of Palermo, Palermo, Italy

S76 Innovative Economic Policy Approaches in the era of transformations. Topics, Data, and Methods,
D1, August 29, 2025, 2:00 PM - 4:00 PM

The Circular Economy (CE) revolution aims to reshape the European production structure through the strategic use of EU public funds (ERDF, Cohesion, etc.) within the broader framework of enhancing regional and territorial competitiveness. Unlike many green policies and programs that primarily focus on reducing environmental impact—often at the expense of economic growth—CE initiatives are designed to mitigate environmental harm while simultaneously restructuring the economic landscape for positive medium- to long-term outcomes. This dual approach is expected to foster territorial growth in employment, competitiveness, and GDP.

This study hypothesizes that the positive impacts of CE initiatives may be contingent upon specific regional and territorial characteristics and endowments. To test this hypothesis, we leverage a comprehensive multilevel dataset. This dataset includes microdata on economic actors, providing detailed information on firm performance, investment behaviours, and innovation activities. Additionally, we incorporate georeferenced information on various infrastructures such as waste management facilities, power plants, recycling centres, and transportation networks. These geospatial data allow us to analyse the heterogeneity of territories exploiting the spatial distribution and accessibility of critical infrastructure that supports CE activities.

Moreover, we integrate data on local labour markets, including employment rates, skill levels, and workforce demographics, to understand how human capital influences the effectiveness of CE policies. Regional characteristics such as GDP per capita, industrial composition, and environmental quality indicators are also included to capture the broader economic and ecological context. By combining these diverse data sources, we create a robust analytical framework to assess the heterogeneity of CE policy impacts across different territories.

Our analysis employs a counterfactual design supported by Machine Learning tools to evaluate the differential impacts of public investments in CE programs (sourced from OpenCoesione) on the performance of beneficiary firms. This approach allows us to isolate the causal effects of CE initiatives and identify the conditions under which they are most effective. We find significant variation in the impacts of CE policies, highlighting the importance of tailored territorial strategies to maximize the benefits of the CE revolution.

Our findings underscore the need for relevant policy measures and investments at the territorial level to exploit the potential of CE revolution fully. By understanding the specific regional and territorial factors that influence the success of CE programs, policymakers can design more effective interventions that promote sustainable economic growth and environmental sustainability across diverse regions.

Exploring localization patterns in Italy

Dr. Alberto Tidu¹, Prof. Stefano Usai¹

¹Università di Cagliari - CRENoS, Cagliari, Italy

G16-O2 Statistical And Econometric Methods of Urban and Regional Analysis, G1, August 27, 2025,
2:00 PM - 4:00 PM

This paper aims to map the spatial distribution of economic activity in Italy and its evolution during the last decade. To attain this purpose, we rely on Marcon & Puech's M – a distance measure that allows us to overcome the Modifiable Areal Unit Problem and the related biased featured by conventional measures based on pre-determined geographical units. Indeed, whereas early measures of localization dealt with the relative specialization of particular pre-defined geographical areas (typically administrative partitions of some larger territory of interest), distance measures escape those constraints and produce indices based on distances between pairs of firms or establishments. We are able to fully exploit M's potential by working on an extremely detailed and accurate dataset: Frame SBS – Territoriale. This dataset is a part of a larger integrated system of registers on firms and establishments, covering the entire country. Indeed, Frame SBS Territoriale censuses every establishment in Italy, providing information about geographical location, industry, added value, revenue, costs, employment and export propensity, amounting to almost five million establishments and over 17 million workers for each available year. Notably, this dataset is not limited to manufacturing activities, but also covers service industries which are often left out of the picture for lack of data.

We believe that a comprehensive quantitative study in such sense is lacking, and we are also deeply convinced that its development through distance-based methods provides much more meaningful results than more conventional measures would. The availability of a quantitative measurement of agglomeration for Italy is by and of itself a significant attainment, but an even more interesting results is the opportunity to understand how geographic patterns are changing and what is driving them. Indeed, our computations do not produce only figures and numbers, but also maps that graphically show how different territories are contributing to the industry overall level of spatial concentration. Finally, the availability of a multitude of other firm- and plant-related variables and multiple years allows us to explore how the spatial localization of an industry is associated with other characteristics, such as value added or its propensity to export and how these relationships change through time.

Sustainable transition and Cohesion Policy: A regional-level indicator for measuring competitiveness and sustainability

Dr. Andrea Conte¹, Dr. Anabela Marques Santos

¹European Commission - JRC - Joint Research Centre, Seville, Spain

S57-S2 JRC Session - Understanding the Territorial Patterns of Climate Discontent, Amph 2, August 29,
2025, 9:00 AM - 10:30 AM

The transition to a competitive and sustainable economy is central to achieving the European Union's (EU) long-term environmental and socio-economic goals. The EU's cohesion policy plays a key role in fostering such transitions by supporting regional development while addressing regional disparities. The evaluation of the cohesion policy requires innovative approaches to address the evolving socio-economic and environmental challenges that shape regional disparities.

This paper contributes to this debate by introducing a novel indicator that measures regional progress towards a competitive and sustainable economy. Based on previous work by Santos et al. (2023), the indicator captures the share of employment in sectors that are both more competitive and greener, but instead of classifying sector-regions using only an absolute threshold, we also include an additional sector specific criterion. In this way, the indicator captures a region's economic performance and environmental sustainability in both absolute and relative terms.

Using NUTS 2-level regional data from 2008 to 2022, we apply this indicator to assess patterns of industrial transition across EU regions. A novel sectoral-regional dataset combining data from Eurostat and Orbis is used to measure competitiveness (productivity measured by gross value added per employee) and sustainability (greenhouse gas emissions relative to gross value added). The analysis highlights regional heterogeneity in transitioning pathways, emphasizing the influence of sectoral specialization. The indicator provides policymakers with useful insights for targeted support under cohesion policy. The findings underline the heterogeneity in regional transitions, emphasizing the need for tailored strategies to maximize the policy's impact in fostering a just and sustainable transition. This contribution also addresses key challenges in policy evaluation by proposing a multifaceted approach that combines sustainability and competitiveness metrics.

Spatial Disparities in Healthcare Provision and Mortality: The Effects of Debt Rescheduling Plans in Italy

Prof. Silvia Balia¹, Prof. Rinaldo Brau¹

¹University of Cagliari, Cagliari, Italy, ²CRENoS, Cagliari and Sassari, Italy

S38-S1 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 27, 2025, 11:00 AM - 1:00 PM

Italy's Debt Rescheduling Plans (DRPs) aimed to reduce healthcare deficits but raised concerns about unintended effects on resource availability and service quality. This study finds a persistent increase in municipal mortality, stabilizing around 3% from the fourth year post-DRP. The disproportionate reduction in nearby hospital beds and doctors, particularly in less central areas, is identified as a key mechanism. These findings suggest severe trade-offs between efficiency and prompt healthcare access due to service centralization.

Parental role models, entrepreneurship, and poverty: The Influence of Parental Employment Choices on Children's Career Outcomes using UK GEM Data

Dr. Neha Prashar¹, Dr Ines Alvarez Boulton

¹Aston University, Birmingham, United Kingdom

G03-O1 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 27, 2025, 11:00 AM

- 1:00 PM

Intergenerational transmission of employment preferences has been a subject of interest in labour economics and entrepreneurship. Prior research has shown there is a strong link between parental role models and a children's decision to become an entrepreneur (Hoffmann, Junge & Malchow-Møller, 2014). If the parents are self-employed, they may endow their children with the necessary soft skills and values needed for entrepreneurial self-employment. However, it is still unclear how the relationship between parental self-employment, training, and an individual's decision to become an entrepreneur varies depending on regional disparities/deprivation. Entrepreneurship and self-employment outcomes are also influenced by exogenous regional factors, such as deprivation, for instance by reducing the overall likelihood of entrepreneurship (Thompson, Jones-Evans & Kwong, 2012). Thus, it is important to understand how and whether regional factors may impact the relationship between self-employment and an individual's decision to follow into their parents' steps by becoming an entrepreneur.

Using individual level data from the UK Global Entrepreneurship Monitor (GEM), we analyse whether children of self-employed parents are more likely to pursue entrepreneurship than children of solely wage-employed parents and examine how regional deprivation may affect these outcomes. We apply multilevel logistic regression analysis to estimate the likelihood of children adopting entrepreneurship, using parental career outcome (mother and father) as the independent variables. Furthermore, UK GEM data also provides information on whether the individual was involved in the running of their parent(s) business, nuancing the analysis to assess how prior exposure impacts their own decision to opt for entrepreneurship.

Provisional analysis shows that if either parent was self-employed in their own business, their child is more likely to also be self-employed in some capacity. Furthermore, prior training in working within their parent's business significantly impacts their own self-employment outcomes.

This working paper contributes to the broader literature on the importance of parental role models on shaping career trajectories and how these relationships are impacted by regional deprivation levels. It also holds important implications for policymakers as it shows the significance of having role models and mentors in the likelihood that a person becomes an entrepreneur. It emphasises the need to develop entrepreneurial programmes where these are most needed.

Hoffmann, A., Junge, M., & Malchow-Møller, N. (2015). Running in the family: parental role models in entrepreneurship. *Small Business Economics*, 44, 79-104.

Thompson, P., Jones-Evans, D., & Kwong, C. (2012). Entrepreneurship in deprived urban communities: The case of Wales. *Entrepreneurship Research Journal*, 2(1).

Uncovering Inequality in the Twin Transition: A Topic Modeling Analysis of EU Policies

Ms Eleni Kalantzi¹, Prof. Christina Kakderi¹

¹Aristotle University Of Thessaloniki, Thessaloniki, Greece

S88-S3 Twin Transition and its Unequal Geography, B2, August 28, 2025, 4:30 PM - 6:30 PM

Since 2019, the European Commission (EC) has placed transition to green forms of production and consumption and digital transformation at the core of its strategic vision for growth. This commitment is evident in major policy documents such as the European Green Deal, the Digital Strategy, and the New Industrial Strategy for Europe, which set the foundation for the EU's twin transition. As the EU continues to prioritize green and digital transition, it is important to understand how the two policy streams engage with inequality dimensions that may emerge or be exacerbated due to the twin transition. This study aims to analyse the policy discourse surrounding the green, digital, and twin transitions in the European Union (EU) by applying topic modelling to a dataset of 100 EU policy documents. The main objectives are to identify key thematic areas, assess their alignment with EU strategies and classify policies into green, digital, or twin categories. The dataset consists exclusively of official EU policy documents retrieved from EUR-Lex, the EU's legal database. These include communications, white papers, regulations, directives, council conclusions, proposals and reports, ensuring a comprehensive and authoritative representation of EU policy priorities. The methodology employs Natural Language Processing (NLP) techniques for text preprocessing, including tokenization, lemmatization, stopword removal, and Term Frequency-Inverse Document Frequency (TF-IDF) filtering to enhance data quality. We perform topic modelling to uncover the dominant themes of each document, and specifically Latent Dirichlet Allocation (LDA) and BERTopic, using both statistical modelling and AI-driven embeddings to improve interpretability. Extracted topics are then classified into green, digital or twin using machine learning-based classification methods. As a final step, validation techniques such as coherence score analysis, manual review and supervised classification models are applied to ensure the accuracy and reliability of results. The paper manages to uncover underlying themes, priorities, and gaps in policy discussions, revealing how policies attempt to mitigate or manage different types of inequalities related to green and digital transformations.

Setting the local scene for just transition. The *modus operandi* of the intermediary organisations.

Dr. Marcin Baron¹, Dr. Artur Ochojski¹, Dr. Adam Polko¹

¹University of Economics in Katowice, Katowice, Poland

S87-S2 Territorial Transitions: Exploring the Scene of Participatory Actions and Common, G4, August 28, 2025, 4:30 PM - 6:30 PM

The transition toward a sustainable and climate-resilient economy requires inclusive, community-driven approaches, particularly in regions historically dependent on carbon-intensive industries. This study explores the role of intermediary organizations (IOs) in facilitating bottom-up initiatives within the framework of the Just Transition Fund (JTF) in Silesia, Poland—the largest JTF recipient in the European Union. Grounded in Gray's 4P framework (Purpose, Process, Partnerships, and Products), the research investigates how IOs conceptualize and implement just transition projects, their motivations, and the perceived impact on local communities.

The study employs a mixed-method approach, analyzing 68 funded projects through publicly available data, complemented by in-depth interviews (IDIs) with key IO representatives and a follow-up survey to cross-validate insights. Preliminary findings indicate that IOs primarily rely on tacit knowledge and prior experience in designing projects but face challenges in mobilizing public engagement. The just transition narrative is often perceived as a top-down mandate, generating limited enthusiasm among residents. Consequently, IOs strategically embed transition messaging within existing socio-economic structures to increase acceptance and participation.

Key themes emerging from the research include the significance of place-based leadership, the integration of grassroots-led initiatives with broader governance frameworks, and the role of IOs in bridging knowledge gaps between policymakers and communities. While IOs recognize the potential of their projects in fostering awareness and incremental socio-economic changes, they remain cautious about their direct impact on broader economic restructuring. The findings contribute to the broader discourse on just transitions by highlighting mechanisms for enhancing community-driven engagement, ensuring that transition policies align with local needs and aspirations.

By examining the experiences of IOs in Silesia, this study provides valuable insights into the operational challenges and opportunities for intermediary organizations in just transitions across Europe. It underscores the necessity of participatory governance and sustained knowledge exchange to achieve equitable and locally embedded climate transitions.

Natural Disasters and the Green Occupational Aspirations of Young Adults

Mr Andreas Bühler¹, Prof. Dr. Patrick Lehnert¹, Prof. Dr. Harald Pfeifer^{2,3}

¹University Of Zurich, Zürich, Switzerland, ²Federal Institute for Vocational Education and Training (BIBB), , Germany, ³ROA at Maastricht University, , Netherlands

G08-O4 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, Amphitheater I -
SAKIS KARAGIORGAS, August 29, 2025, 9:00 AM - 10:30 AM

Understanding adolescents' aspirations for green occupations (i.e., occupations that contains skills that contribute to the green energy transformation) is important for ensuring an adequately skilled workforce to mitigate climate change. Therefore, we examine how exposure to natural disasters influences adolescents' aspirations for green occupations through increased environmental awareness. We argue that individuals who experience natural disasters are more likely to behave pro-environmentally and thus to aspire for green occupations. Combining individual-level data on occupational aspirations, job content data to measure the greenness of occupations and administrative data on disaster events, we find that young adults who were exposed to a natural disaster aspire to occupations with a higher share of green job contents. This relationship holds when we control for individual background and individuals' cognitive abilities through, math and science test scores. We also find that such exposure is related to environmental awareness, suggesting that environmental awareness acts as one channel through which natural disasters shape occupational aspirations. Additionally, we run a placebo test with disasters that are not related to climate change and show that these disasters are not related to the greenness score.

Gambling: a story of remarkable stability in fast-changing high streets and the role of online gambling

Prof. Emmanouil Tranos¹, Dr Luning Li², Ms Mirah Zhu¹

¹University of Bristol, Bristol, United Kingdom, ²University of Glasgow, Glasgow, UK

S45 Spatial Aspects of Well-being, Addiction and Crime, F1, August 27, 2025, 4:30 PM - 6:30 PM

High Streets, the main commercial streets in towns and cities, have undergone significant transformations due to the evolving urban retail landscape. Despite these changes, this study demonstrates that the presence of gambling venues in Great Britain remained remarkably stable between 2014 and 2023. Using Points of Interest data, we constructed a panel dataset of gambling shops on high streets. Employing simple autoregressive models estimated with random forests, we predicted annual gambling frequencies during 2015–2023 using 2014 frequencies as the sole predictor. Our results show a predictive accuracy of 91.8% by 2019, which remained robust at 86.2% in 2023, even after the disruptions caused by the COVID-19 pandemic. This highlights the notable stability in the frequency of gambling shops on high streets. Additionally, we developed a two-tiered analytical framework that confirmed this stability across different types of local authorities and high streets. Given the geographically bounded negative externalities of gambling, these findings provide a comprehensive understanding of the evolving spatial footprint of gambling shops. They also offer broader insights into how retail environment characteristics influence the resilience of leisure businesses in diverse urban contexts, contributing to ongoing discussions on high street revitalization.

Going a step further, we employ a large survey to assess whether accessibility to such 'brick and mortar' gambling shops is associated with online gambling behaviours. The underpinning argument is that gambling shops could act as advertising points for gambling activities and, therefore, proximity to such outlets can be associated with increased online gambling behaviour. The survey data allow us to create such proximity and gambling accessibility indicators for the survey participants. We then build multilevel models to assess the potential link between online gambling behaviour and accessibility to gambling shops. Our early findings illustrate an absence of such a relationship. Instead, we observe a bimodal gambling population with online gamblers not being attracted by and affected by accessibility to brick and mortar gambling shops.

Mapping the Uneven Environmental Costs of Logistics: Evidence from Italy's Expanding Transportation Industry

Mr Arsène Perrot¹

¹Gran Sasso Science Institute, L'Aquila, Italy

G05-O1 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 27, 2025, 11:00 AM - 1:00 PM

Italy's logistics network is expanding rapidly, fuelled by the growth of e-commerce and global supply chains, and going through important structural changes, from a highly fragmented sector characterised by SMEs specialising in basic services to a consolidated one with global players. This paper investigates the environmental consequences of this expansion, focusing on the impact of new logistical centres on PM10 concentration, a key indicator of air pollution. It explores the uneven origins and spatial distribution of these impacts, considering the role of different actors, including global and local companies, and the influence of location decisions and co-location with various industries.

The analysis leverages a Difference-in-Differences approach with staggered treatment and Instrumental Variable estimates, utilising data on land usage, employment, and air quality from Copernicus-ERA5. It also uses data from Orbis-Bureau Van Dijk to identify global actors, and a co-location index to understand the presence and influence of different actors.

This research aims to reveal potential trade-offs between economic development and environmental sustainability, highlighting the unequal distribution of costs and benefits associated with logistical infrastructure expansion. It sheds light on market failures and the complex interplay between political and policy rationales for development, individual consumer choices and their environmental consequences. By understanding the spatial distribution of these negative externalities, the study helps inform place-sensitive policy interventions aimed at mitigating the uneven environmental impacts of logistics.

Climate Change and Migration Intentions: The Role of short-term climate shocks and long-term climate trends

Dr. Lena Kuhn¹, [Dr. Antje Jantsch](#)¹

¹Leibniz Institute For Agricultural Development In Transition Countries (IAMO)), Halle, Germany

G08-O5 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, A1, August 29,
2025, 11:00 AM - 1:00 PM

Between 2015 and 2020, emigration from Western Balkan countries increased by nearly half a million people, driven by economic hardship, political instability, and conflict. Recently, environmental factors, particularly climate change, have emerged as significant migration drivers, especially in rural agricultural areas. Rising temperatures, shifting precipitation patterns, and extreme weather events negatively impact livelihoods. However, individuals' perceptions of climate change vary based on socio-economic and cultural contexts, influencing migration decisions differently than objective climate data.

Despite growing research on climate-induced migration, Southeast Europe remains underexplored, with limited studies utilizing remote sensing data to assess climate shocks' effects. This study addresses gaps in understanding whether cumulative climate shocks and long-term trends impact migration intentions differently than isolated climate events. It also examines discrepancies between subjective climate perceptions and objective climate measures in shaping migration decisions.

Using a probit model, the study analyzes data from the RuWell (Rural Well-being in Transition: Multidimensional Drivers and Effects on (Im)Mobility) project, a 2024 household survey in Albania, Kosovo, Moldova, and Romania. The individual-level data was complemented with current and historical precipitation and temperature data (~10km spatial resolution) from the ERA5-Land product. Based on this data, also SPEI values were calculated along the Hargreaves method. Additionally, night-time lights were added to approximate economic development in the respective regions. This data was obtained from the Annual Global VIIRS Nighttime Lights dataset offering a spatial resolution of 465 meters per pixel.

Findings indicate that cumulative climate stress over five years has a stronger association with migration intentions than recent extreme events, while perceived climate trends show no significant correlation. These insights are crucial for designing adaptive policies that mitigate migration pressures and enhance rural resilience.

Do More Competitive EU Regions Offer Better Public Services for Firms?

Ms Iryna Lagodna¹, Mr Burak Turkgulu

¹World Bank Group, Washington, United States

G02-O3 Regional Growth Models, Competitiveness, and Convergence, B1, August 28, 2025, 9:00 AM - 10:30 AM

Public services play a crucial role in shaping regional business environment and competitiveness. In turn, various factors of competitiveness may likewise influence the quality and efficiency of public services in the regions. This study investigates the relationship between different factors of regional competitiveness and the provision of public services for firms in the EU regional context. Using the data from the Subnational Business Ready (Subnational B-READY) reports, published in 2024 by the World Bank Group, and the EU Regional Competitiveness Index 2022 (RCI 2022), published by the European Commission, we run OLS regressions with fixed effects for 39 EU regions at NUTS2 level. The empirical analysis confirms strong correlation between the regions' overall competitiveness and provision of public services for firms. These findings indicate that increasing competitiveness of regions will likely incur improvements in the public services for firms, which in turn lead to more enabling business environment. Furthermore, our findings establish that quality of public services for firms is significantly and positively associated with most individual factors of competitiveness, measured by the RCI 2022, such as infrastructure, labor market efficiency, market size, level of higher education and lifelong learning, as well as innovation and business sophistication. When discussing the positive relationship between an increase in innovation capacity of regions and enhancement and digitalization of local public services, we draw on specific examples of innovative approaches in public service provision in specific regions, identified in the Subnational B-READY studies. The analysis also reveals that two other important competitiveness factors, institutions and technological readiness, do not directly impact public services for firms at the regional level once country differences are considered. These results suggest that institutions and technological readiness are largely shaped at the national level, and country-wide reforms in these areas may be more effective in fostering better public service provision than isolated regional improvements.

Ballot Design, Mayor's Dilemma: How Electoral Rules Shape Governance

Mr Guglielmo Cori¹, Dr Marco Di Cataldo¹

¹Ca' Foscari University of Venice, Venezia, Italy

S29-S1 Counterfactual Methods for Regional Policy Evaluation, E1, August 28, 2025, 4:30 PM - 6:30 PM

Can a simple electoral rule influence politicians' behavior? In Italian municipalities, a threshold of 15,000 inhabitants determines whether mayoral elections follow a single-round or a run-off system. But does this institutional shift affect the strategic choices of incumbent mayors seeking re-election? Existing literature highlights a transmission circuit linking electoral rules to political competition and, consequently, to policy outcomes. However, the extent to which these electoral mechanisms influence political behavior at the local level remains an open question. This study explores how electoral rules shape local policy decisions, specifically assessing whether incumbent mayors adjust their governance strategies in the years leading up to elections in response to differing electoral incentives. Do varying electoral environments prompt incumbents to strategically reallocate resources in order to strengthen their consensus and maximize their chances of re-election? Understanding these dynamics is crucial for evaluating the broader impact of institutional design on political accountability and efficiency in resource distribution. By examining municipalities' impegni (future planned expenditures) and applying a regression discontinuity (RDD) approach around the 15,000-inhabitant threshold, this analysis investigates whether different electoral systems generate measurable differences in local choices. The objective is to identify systematic patterns that may enhance the likelihood of re-election for incumbent mayors, shedding light on the strategic behaviors that are induced by varying electoral frameworks.

Analysis of the use and impact of the Nature Trails Network of Spain. An exploration based on new data sources.

Dr. Gustavo Romanillos¹, Valentina Tagliari¹, Dr. Borja Moya-Gómez¹, Enrique Santiago-Iglesias¹

¹Universidad Complutense de Madrid, Madrid, Spain

S58-S2 Measuring the Social Impact of Tourism in the European Union, E12, August 28, 2025, 4:30 PM
- 6:30 PM

As sustainability emerges as a core principle of European tourism, Spain's Nature Trails Network (Red de Caminos Naturales de España) exemplifies an initiative that fosters eco-tourism while generating positive social and economic impacts. Since 1993, the Spanish Government has repurposed over 10,800 km of disused infrastructures, transforming them into sustainable tourism assets. These trails support rural development by redistributing visitors away from overcrowded destinations, preserving cultural and natural heritage, and fostering local employment in tourism and hospitality sectors.

This study aims to assess the economic and social impact of the Nature Trails Network between late 2019 and August 2024. It seeks to complement previous research by incorporating new data sources to overcome past limitations. The study's objectives include collecting qualitative and quantitative data on the network's impact, providing updated insights for policymakers, and developing an interactive online dashboard for dynamic visualization and analysis of results.

The research methodology is structured into two stages. The first stage involves surveys conducted with trail managers, incorporating data from pedestrian and cyclist counters and Geographic Information Systems (GIS). The second stage employs alternative data sources, such as social media activity (Flickr and Wikiloc), web-based analytics (Google Popular Times, Foursquare), and geospatial data to analyze usage patterns, seasonality, and tourist behaviors. This approach builds upon methodologies from previous studies to enhance understanding of the network's spatial and temporal usage dynamics.

The study analyzed 69 selected trails, with survey responses covering 38% of them. Due to sample size limitations, the findings primarily focus on insights derived from new data sources. The interactive dashboard developed for this study integrates a mapping tool, control panels, and real-time data visualizations, enabling users to explore trail-specific statistics dynamically. Findings reveal seasonal variations in trail usage, with peaks in autumn and spring for inland routes and in summer for coastal trails. Weekends and public holidays witness higher activity, and visitors tend to prefer short- to medium-length hikes. The study also identifies key points of interest and visitor clustering, offering valuable data for infrastructure planning and management.

This research highlights the importance of integrating diverse data sources for a comprehensive assessment of tourism trends. Although the study faces limitations regarding data availability, it provides significant insights into the Nature Trails Network's role in sustainable tourism. The findings support informed decision-making for optimizing trail usage and enhancing rural development, demonstrating the potential of technology-driven analyses in tourism management.

Analyzing Scholarly Impact of Cooperatives in Circular Economy and Eco-Innovation Using Fuzzy-Set Methodology with Bibliometric Insights

Ms Asia Guerreschi¹, Professor Christoph Kiefer²

¹University Of Ferrara, Ferrara, Italy, ²(CSIC) Consejo Superior de Investigaciones Científicas, Madrid, Spain, ³(SEEDS) Sustainability Environmental Economics and Dynamics Studies, Ferrara, Italy

S20 Circular Economy and Eco-Innovation in the Cooperative Movement, Amphitheater I - SAKIS
KARAGIORGAS, August 29, 2025, 9:00 AM - 10:30 AM

The transition to a circular economy (CE) and the integration of eco-innovation (EI) principles are pivotal in addressing global sustainability challenges. Cooperatives, given their unique socio-economic structures, are well-positioned to spearhead this transition. This study builds upon prior bibliometric analysis on cooperatives in CE and EI to assess the underlying dynamics and research gaps within the field approached by the project Climate Circular Coop (Coletti et al, 2024) and a bibliometric analysis (Guerreschi & Díaz López, 2023). A fuzzy-set Qualitative Comparative Analysis (fsQCA) methodology, is applied to examine the impact of scholarly research in fostering environmental sustainability, focusing on how these organizations integrate CE and EI in their operational frameworks.

The bibliometric analysis (Guerreschi & Díaz López, 2023) revealed three intellectual clusters centred around industrial ecology, recycling, and waste management while highlighting a growing but underexplored intersection between CE and EI in cooperative studies. However, little is known about the factors that lead to the successful adoption of eco-innovation within these clusters. Using the fsQCA approach (Castelló-Sirvent, 2022), this study explores multiple pathways that cooperatives can follow to implement CE and EI initiatives and the impact of these studies using truth tables that value conditions such as journal impact, standardized citations per year, age of the articles, and link to sustainability.

By integrating fuzzy-set theory into the bibliometric findings, this research addresses key gaps in the impact of the scholarly research and how these can be approached by various stakeholders. The anticipated results are expected to clarify the impact of specific conditions, expressed in the scholarly research, under which cooperatives thrive in adopting CE and EI strategies, potentially guiding future policymaking and cooperative governance structures. Additionally, the study could provide novel insights to fostering more effective collaborations between cooperatives, businesses, and policymakers.

Land Use, Deforestation, and Greenhouse Gas Emissions from Biofuels Policies in Brazil

Prof. Edson Domingues¹, Ms Madhu Khanna², Ms Aline Magalhaes¹

¹Federal University of Minas Gerais, Belo Horizonte, Brazil, ²University of Illinois Urbana-Champaign, Champaign, UNited States

G20-O2 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 28, 2025, 9:00 AM - 10:30 AM

Brazil has several biofuel policies, including RenovaBio, alongside new policies related to climate change (Plano Clima, June 2024) and energy transition. In addition to the reduction targets agreed upon during the COP21 Paris Agreement, Brazil has recently announced a policy for zero deforestation in the Amazon by 2030. There is no coordination among the various policies. Recently (2024), measures to increase the blending of diesel with biodiesel and ethanol with gasoline have raised questions about the impact on the demand for soybeans (in the case of biodiesel) and sugarcane (in the case of ethanol), and consequently, on the pressure for land expansion and deforestation. Therefore, there may be a trade-off between the expansion of renewables and forest conservation, namely, between energy matrix decarbonization and deforestation reduction. We apply a detailed inter-regional Computable General Equilibrium model for Brazil to evaluate these policies and scenarios. Economic impacts such as deforestation and GHG emissions are also assessed.

Assessing the social acceptability of restoration solutions in coastal wetlands: results from the RESTORE4Cs project

Dr. Lisa Sella¹, Prof. Francesca Silvia Rota², Mr. Nicola Pollo³, Ms Elena Ragazzi¹

¹IRCrES-CNR - Istituto di Ricerca sulla crescita economica sostenibile, Torino, Italy,

²University of Turin, Department of Economics & Statistics "Cognetti de Martiis", Torino, Italia,

³University of Modena and Reggio Emilia, Modena, Italy

S15 Regional Climate Change Adaptation, G5, August 27, 2025, 4:30 PM - 6:30 PM

Climate change represents a global challenge that policymakers urgently need to address by means of integrative frameworks and targeted local solutions that hamper climatic resilience and territorial sustainability. The scientific community can develop inter- and trans-disciplinary approaches that integrate knowledge from different fields and involve stakeholders in co-designing these solutions. In environmental land management, for instance, a growing interest is paid to the effects that land-use change decisions produce on carbon sequestration, greenhouse gasses emissions abatement, and other ecosystem services.

In a socio-ecological perspective, social sciences play a crucial role in understanding the relationships that link socio-economic dynamics and land-use patterns in the perspective of climate mitigation and adaptation. Local stakeholders are fundamental for the successful implementation of nature restoration actions aimed at preserving ecosystem services: their perceptions and preferences can determine both the feasibility and effectiveness of the restoration investments. Thus, the analysis of the social acceptability of different management options becomes more and more crucial. However, many restoration projects fail to deal with the aim of social acceptability assessment in a way that integrates socio-economic analyses and bio-geo-physical research structurally.

This paper provides both a conceptual framework to analyse the social acceptability of restoration options, and an application to coastal wetlands based on the Horizon Europe project RESTORE4Cs (<https://www.restore4cs.eu/>). The project investigates alternative restoration strategies in six coastal wetlands across Europe (Portugal, Spain, The Netherlands, Romania, Lithuania, France). The paper focuses on several factors that can influence stakeholder preferences and social acceptability and methods for measuring them in the context of wetlands.

Assessing Economic Constraints and Cost-Benefit Analysis Framework of Solar Parks and Energy Storage Infrastructures

Dr. Nikolaos Kalyviotis¹, Dr Alfredo Cartone², Dr André Carrascal-Incera³, Dr Giorgos Stamatopoulos¹

¹Department of Economics, School of Social Sciences, University of Crete, Rethymno, Greece,

²Department of Economics, School of Economic, Business, Legal and Sociological Sciences, G.

d'Annunzio University of Chieti-Pescara, Pescara, Italy, ³Department of Economics, School of

Economics and Business, University of Oviedo, Oviedo, Spain

G05-O2 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August

27, 2025, 2:00 PM - 4:00 PM

The cost-benefit analysis for solar parks and energy storage infrastructures encompasses multiple components, each with its own considerations. The superstructure of the solar systems, composed of primary and secondary elements, necessitates a multilevel evaluation, inclusive of a geotechnical study to ascertain the foundation methodology. Cost-effective solar systems' foundation types, such as direct ramming, are favored for soft soils, whereas pre-drilling is appropriate for rocky terrains. Corrosion protection is crucial, with Batch Hot-Dip Galvanizing (HDG) offering superior protection for piles in extreme soil corrosion conditions, while pre-galvanized elements provide a more cost-effective, albeit less durable, solution. Inverters, whether centralized or decentralized, should be assessed based on site layout, grid agreement, and owner preferences. Larger transformers in production substations are more cost-effective for projects exceeding 10MWp. The selection of earthing materials is driven by considerations of corrosion between metals, with galvanized steel being cost-effective for pile ramming and copper or copper-plated solutions recommended for concrete micro piles. Cost-efficient earthing solutions are based on the material used; however, local regulations, insurance policies, and owner requirements must be taken into account. Energy batteries are cost-effective for capacity market applications, whereas power batteries are suitable for grid support services. These comprehensive evaluations ensure that each component of the solar park and energy storage system is optimized for cost-effectiveness while maintaining functionality, safety, and compliance with technical standards and local regulations.

The market is trending towards larger storage systems utilizing energy batteries, which are more standardized and cost-effective. Batteries facilitate price stabilization by absorbing energy during low-price periods and releasing it during high-price periods (price arbitrage). This function stabilizes prices during high demand by substituting high-cost thermal units and supports clearing prices by mitigating discharges during overproduction conditions through increased demand. The energy simulation for Greece highlighted the necessity to develop storage stations to absorb the energy produced within the domestic energy system. The supply-demand mismatch caused by high levels of solar-generated electricity, known as the 'duck curve,' can be mitigated by energy storage.

The objective of this research is to evaluate the participation of energy storage infrastructures in energy markets for system balancing and to model the economic relationships engendered by the significant fluctuation of the residual load curve in relation to the performance characteristics of Energy Storage Systems. Ultimately, the characteristics of an economic limit must be defined to prevent the creation of inflation due to energy storage, either at specific times or overall.

Biodiversity, Risk, and Price Dynamics in EU Fisheries: A Spatial and Temporal Analysis

Ms Itsaso Lopetegui¹, Professor Ikerne del Valle¹

¹University of the Basque Country (UPV/EHU), Bilbo, Spain

G16-O4 Statistical And Econometric Methods of Urban and Regional Analysis, F5, August 29, 2025,

2:00 PM - 4:00 PM

This paper investigates the relationships between diversity, risk, and prices in the fisheries sector in the EU, focusing on 23 distinct sub-ecosystems, each representing a fishing country. To measure biodiversity, we employ several indices, including the Berger-Parker Index, Simpson's Index, Concentration Ratio, and Shannon Index, which provide insights into the sustainability and resilience of fisheries across the sub-ecosystems as each member-state operates within a unique marine sub-ecosystem composed of diverse fish species, which may also change over time. The study also incorporates an analysis of risk, using a financial left-tail risk measure to capture downside risk. This serves as a sub-ecosystem level proxy for the inherent risk in fishing activities, providing an empirical and probabilistic measure of worst-case losses, which is crucial for understanding the economic vulnerability of fisheries.

We explore price trends of fish landings within the sub-ecosystems to assess market behavior, and evaluate the efficiency of each sub-ecosystem by comparing output to input levels. To measure technical efficiency, we employ a Cobb-Douglas Stochastic Production Function, alongside a Bias-Corrected Data Envelopment Analysis (DEA) with environmental variables. The DEA framework utilizes a second algorithm for bias correction, estimating efficiency scores in both input- and output-oriented models while accounting for exogenous environmental factors. Additionally, the paper examines spatial autocorrelation to identify regional hotspots or coldspots in both biodiversity and market performance, uncovering patterns of geographic interdependence.

A key objective of the research is to explore the temporal and spatial dynamics of these indices. Specifically, we analyze whether diversity, risk, and prices change over time or vary across sub-ecosystems. To do so, we apply both parametric (e.g., ANOVA) and non-parametric (e.g., Kruskal-Wallis) statistical tests to identify significant differences between sub-ecosystems and over different time periods. This approach allows us to assess the stability or variability of these metrics, highlighting potential shifts in market conditions or ecological health.

Theoretically, lower diversity is associated with higher concentration, dominance, and dependency of the fishing sector on the dynamics of dominant fish species, thereby increasing the risk of potential collapse. Furthermore, efforts to enhance efficiency may reduce diversification, potentially leading to greater income variability and financial risk. Our findings reveal notable differences in diversity, risk exposure, and price trends across EU fisheries, with significant spatial variability. These results offer valuable insights for policymakers and stakeholders, providing a basis for more targeted and informed interventions aimed at ensuring long-term sustainability and economic stability in the fisheries sector.

Comprehending the varied spatial polarization between traditional and emerging Indian metropolises

Ms Shraddha Pandit¹, Dr. Arindam Biswas¹

¹Indian Institute Of Technology, roorkee, Roorkee, India

YSS4, G4, August 28, 2025, 11:00 AM - 1:00 PM

This study examines the divergent patterns of spatial polarization in Indian cities in the post-reform period. It considers empirical evidence from traditional (e.g., Mumbai, Delhi) and emerging metropolises (e.g., Bangalore, Hyderabad, and Ahmedabad). Leveraging Consistent and Corrected Nighttime Light (CCNL) data – a novel methodological approach to overcome India’s urban data limitations, we analyze the varied polarization patterns across the five cities. The study incorporates spatial autocorrelation analysis to identify statistically significant high and low values of night light pixels within the urban contiguous areas and trace their evolution over five time points to interpret spatial polarization. It also employs relevant policy and document analysis of the spatially polarizing cities to analyze how their city-specific neoliberal spatial policies interacted with their historical economic structures and socio-political factors to shape the polarization outcomes. The analysis reveals that Mumbai, Ahmedabad and partially Hyderabad exhibit spatial polarization at the urban agglomeration (UA) scale, whereas Delhi and Bangalore mostly portray peripheral marginalization with urban expansion. The study substantiates that polarization stems from the city-specific neoliberal policy tools, historical economic structure and socio-political divide. The study reveals that while neoliberal reforms drive significant urban spatial divides through deindustrialization, place-based politics and global image building, the possibilities of cities experiencing spatial polarization are mediated by city-specific spatial policy tools, their pre-existing economic profiles, and place-based ethnocentrism. The study methodologically advances understanding of inequality research by validating the use of nighttime light (NTL) data for spatial polarization studies in data-scarce contexts like India. It combines cluster analysis with policy studies to unfold the dynamics of spatial polarization of both traditional and emerging Indian metropolises.

Keywords:

Spatial polarization, Indian metropolis, Consistent and Corrected Nighttime Light Data, Policy reforms, Neoliberalism, Spatial policies.

Who is willing to pay for resilience? An evaluation of households' appreciation of electricity system security in Italian regions

Ms Elena Ragazzi¹, Dr Ugo Finardi¹, Ms Jeanne Vallette D'Osia¹

¹CNR-IRCrES - Istituto di Ricerca sulla Crescita Economica Sostenibile, Torino, Italy

S62 A Changing World: Balancing Economic Growth with Sustainable Energy Transitions, E12, August 29, 2025, 11:00 AM - 1:00 PM

This proposal focuses on cybersecurity as a key element on energy system resilience. The energy transition is deeply transforming the electricity system. This change does not only affect the share of sources and the competitive structure of the market. It has also consequences for the management of the system, introducing new vulnerabilities that may be exploited by cyberattacks. Cybersecurity (CS) regulation is advocated by literature for the electricity sector due to market failure, but lack of information may result in bad regulation.

This paper is focused on the estimation of the value of cybersecurity for citizens, which is important to assess priorities and to avoid overinvestment, with consequences on the cost of energy.

We will adopt a discrete choice experiment approach to elicit the value of CS for respondents who probably do not have competencies nor experience to express directly a value. Results are based on a wide survey on a sample (770 respondents) representative of the Italian population, administered in December 2024.

The survey data-base, which includes also data on the place where the respondent lives, will be complemented with geographical information. Particular attention will be given to the spatial aspects of the problem, both verifying if WTA varies in different geographical data (macro-areas, regions) or types of territories (inner areas, urban vs rural areas). The influence of space-based variables, such as quality of service indicators, malcontent indicators, institutional quality descriptors, will be assessed as well.

Social Housing and Social Diversity in France

Mr Rémi Peltier¹

¹Université Grenoble Alpes, Grenoble, France

G10-O4 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 29, 2025, 11:00 AM - 1:00 PM

Access to affordable housing remains a major challenge in many developed countries. In this context, social housing plays a crucial role in public policies by ensuring regulated rents and expanding affordable housing supply. However, its spatial distribution significantly influences residential segregation. In France, the concentration of social housing is a key driver of segregation, prompting policy measures to promote social diversity. The Solidarity and Urban Renewal (SRU) law, particularly Article 55, mandates municipalities to meet minimum social housing quotas to enhance spatial equity.

This study investigates the effects of newly built social housing under the SRU law on neighborhood characteristics and social diversity. Unlike previous research, which primarily examines social housing distribution at the municipal level, we focus on the specific impact of new units and their tenants. Using a staggered Difference-in-Differences (DID) approach and leveraging a natural experiment from the 2013 reform, we analyze how the SRU law influences neighborhood socioeconomic composition. Our methodology relies on three datasets covering municipal-level compliance, social housing geolocation, and household demographics. We assess neighborhood attractiveness, segregation, and social mix using income-based indicators. By distinguishing between SRU-driven housing and other social housing developments, this research provides new insights into the law's effectiveness in fostering social diversity.

Regional market concentration and income redistribution

Dr. Roberta Capello¹, Dr. Kenneth Castillo-Hidalgo¹, Dr. Giovanni Perucca¹

¹Politecnico di Milano, Milan, Italy

G02-O1 Regional Growth Models, Competitiveness, and Convergence, B1, August 27, 2025, 2:00 PM - 4:00 PM

Literature has provided strong evidence on the association between increasing market concentration and the emergence of ‘superstar firms’ in industries highly exposed to technological change and globalization (Autor et al., 2020; Harrison, 2024). As a consequence, firms are able to raise markups at relative advantage of the remuneration of capital over labor, with a relevant impact on functional income redistribution. Studies in this field have addressed this issue from an industrial, spatially neutral perspective, where the intensity of the effects of increasing market concentration on functional inequalities exclusively depends on the economic sectors in which firms operate.

This study aims to provide a regional approach to address this issue, accounting for the relevance of territories. The motivation for this is twofold: First, locational choices of ‘superstar firms’ are not spatially blinded, but favor localizations in which they can benefit from agglomeration economies. Second, the intensity of functional income redistributive effects in favor of capital owners is expected to be higher in regions where ‘superstar firms’ (hence, capital) are concentrated. We test this hypothesis by using data on EU companies and market concentration measures for highly disaggregated industries.

Our findings support the existence of territorial heterogeneity in the intensity of the effects of market concentration. While relative capital remuneration increases with raising market concentration, the effect is significantly higher in those regions where ‘superstar firms’ are located. Moreover, market concentration, does not only affect disparities between capital and labor owners, but also between regions with different industrial compositions. These results shed light on the relevance of the regional dimension of inequality, neglected in previous studies.

Towards the integration of territorial governance in functional urban areas: lessons learned from Poland

Dr. Dagmara Kociuba¹

¹Maria Curie-Skłodowska University, Lublin, Poland

G21-O1 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 27, 2025,
2:00 PM - 4:00 PM

The implementation of new territorial instruments of the EU Cohesion Policy for 2014-2020, in particular Integrated Territorial Investments (ITIs), has obliged countries and regions to develop an institutional framework and management rules in new areas of intervention - functional urban areas (FUAs), which was not tied to the existing administrative divisions. This has been a particular challenge for countries that have no experience or tradition of implementing such solutions. One of them was Poland, a beneficiary of more than 30% of the ITIs funds. The purpose of the paper is to present the path to the integration of territorial governance in functional urban areas in Poland. Based on the experience of implementing ITIs in 2014-2020, a detailed analysis was conducted on the issues of devolution of competences, creation of coalitions of actors involved, integration of inter-municipal cooperation in horizontal and vertical dimensions, and introduction of multi-level governance rules. This laid the basis for developing of models of territorial governance in FUAs. The study provides new insights for research on the introduction of new approaches to building formal and legal frameworks, cooperation principles and management structures in FUAs, especially with regard to the changing geographical scale of policy intervention areas, and the role of leadership in this process. The results can be used for contextual comparative research.

Foresight and Participatory Approaches for Enhancing Urban Resilience to Climate Change: The Urban Laboratory in Murcia, Spain

Dr. Fernando Miguel García Martín¹, Dr. Jesús Ochoa Rego¹, Mr Matías Nieto Tolosa¹, Mr. Miguel Hurtado Hernández¹

¹Universidad Politécnica De Cartagena, Cartagena, Spain

S42-S1 Strengthening Societal Resilience Through Policy Experimentation, Foresight and Participatory Approaches, D1, August 27, 2025, 2:00 PM - 4:00 PM

The adaptation of urban environments to the effects of climate change represents a key challenge for the European Union. The urban laboratory developed in the city of Murcia (Spain) within the FUTURESILIENCE project has focused on neighbourhood-scale adaptation measures to address two of the main climate change effects in southern Spain: the increasing risk of flooding and the intensification of heat waves in urban heat islands. The objective was to strengthen resilience by highlighting the necessary changes in governance systems to tackle this challenge. To achieve this, key factors for the development of adaptation policies and future scenarios were identified using foresight techniques. This process took place in participatory sessions with key technical decision-makers at the local and regional levels in the fields of environmental management, urban planning, emergency response, and public health, as well as with social stakeholders. Finally, the effectiveness of various policies in different scenarios was assessed through another participatory session. These policies were drawn from experiences implemented in other European research projects as well as from regional and national policies. As a result, a logical framework was developed to categorize policies based on their scope of action: data collection to identify vulnerabilities, development of adaptation strategies and plans, design of adaptation projects based on Nature-Based Solutions, emergency management, and evaluation of adopted policies. Furthermore, the assessment of actions across different scenarios highlighted the need for a dynamic approach, where strategies and policies must be periodically reviewed as climate change adaptation measures are implemented.

Socio-Digital Inequalities in the Cultural Field: Towards a Unified Research Framework in Cultural Participation Studies

Prof. Predrag Cveticanin¹, Prof Inga Tomic Koludrovic², Mr Mirko Petric³

¹University of Nis, Nis, Serbia, ²Institute of Social Sciences Ivo Pilar, Split, Croatia, ³Institute of Social Sciences Ivo Pilar, Split, Croatia

S56-S2 Digitalization and Inequality: Territorial Disparities and Policy Effectiveness, Amph 2, August 29, 2025, 11:00 AM - 1:00 PM

Socio-Digital Inequalities in the Cultural Field: Towards a Unified Research Framework in Cultural Participation Studies

In this paper, we propose a unified research framework for studying the impact of social and digital inequalities on four types of cultural practices: offline art-related practices, offline everyday cultural practices, online art-related practices, and online everyday cultural practices. Based on empirical evidence of cultural participation from a large-scale research project carried out in nine European countries, we demonstrate the benefits of sidestepping what we see as a strange disconnect between the research traditions studying inequalities in the offline and online spheres separately. We propose the term “socio-digital inequalities” and explain the methodology used to study it in the case at hand. The results of our comprehensive survey and qualitative research indicate that only the inclusion of both online and offline practices and socio-digital inequalities in the analysis does justice to the complexity of contemporary cultural participation and provides a reliable basis for policymaking. Keywords: socio-digital inequalities, online and offline cultural participation, policymaking, Europe

Rural Proofing: Applying the rural diversity compass for Policy Assessment

Ms Giulia Martino², Prof. David Miller¹, Mr Olivier Chartier², Ms Roxana Vilcu², Ms Elena Fao², Ms Brigit Zomer², Dr. Jonathan Hopkins, Ms Luise Koeppen³

¹James Hutton Institute, Aberdeen, United Kingdom, ²Ecorys, Brussels, Belgium, ³University of Groningen, ,

S55-S1 Taking into Account Diversity to Shape just Rural Futures: Novel Indicators for Resilient and Inclusive Development, Amph 2, August 27, 2025, 11:00 AM - 1:00 PM

The Cork 2.0 European Conference on Rural Development (European Union, 2016) identified ten policy orientations to guide innovative, integrated and inclusive rural and agricultural policy in the European Union (EU). It proposed that rural proofing be used to ensure this is reflected in EU policies and strategies. The process of rural proofing should enable greater multi-level governance and stakeholder co-ordination, reflecting the value of two-way exchanges, from top down and bottom-up perspectives, regarding problems and proposed solutions.

One aim of the Horizon Europe GRANULAR project is the development of tailored rural policies, for which a rural proofing approach is adopted, tested and implemented in the project's set of Living and Replication Labs (Living Labs - GRANULAR (ruralgranular.eu)). A checklist-type approach has been adapted which integrates the GRANULAR Rural Compass and its functionalities and components with the actions and activities of the LTVRA Action Plan. The checklist elements are grouped under the headings of the four pillars, or action areas, of the Long Term Vision for Rural Areas: Stronger, Connected, Prosperous and Resilient. The approach enables the narratives on rural proofing to be developed with a view to their articulation with respect to the framework of the LTVRA.

A rural proofing tool has been compiled in MS Excel the outputs of which comprises include a narrative summary, descriptions of the types of impacts, quantitative and qualitative estimates of the magnitude of such impacts (positive or negative), and narratives of means of mitigation. The tool has been tested in Living Labs across Europe feedback from which was used to revise the rural proofing framework, linking the LTVRA and the Rural Compass as elements against which to test potential effects of the policy or initiative. European Commission DG AGRI also shared perspectives on the role of outputs from rural proofing in aiding delivery of economic, social and territorial cohesion across public policies.

Rural proofing of selected policies and initiatives is being undertaken by Living and Replication Labs over winter 2024/25. The outputs and experiences of using the rural proofing will provide evidence for use in informing the development of skills and approaches to integrating rural issues in EU policy-making across departments as envisaged by the European Commission.

Rural attractiveness in Europe: An econometric analysis of regional determinants

Mr Michael Wögerer¹, Ms Dejana Golic¹, Mr Tamas Krisztin¹

¹International Institute For Applied Systems Analysis (IIASA)), Laxenburg, Austria

S55-S1 Taking into Account Diversity to Shape just Rural Futures: Novel Indicators for Resilient and Inclusive Development, Amph 2, August 27, 2025, 11:00 AM - 1:00 PM

This study explores the factors driving population change in European NUTS3 regions between 2011 and 2021. The aim is to understand what makes regions attractive for inward migration and lowers emigration, with a focus on rural regions. For this purpose a Bayesian spatial durbin model with stochastic search variable selection priors (BSDM-SSVS) is used to analyze a novel dataset capturing a variety of potential determinants including economic sectors such as agricultural and knowledge-intensive industries, environmental factors like temperature and precipitation change, and spatial neighborhood effects. Gibbs sampling from the BSDM-SSVS framework allows for efficient inference on the key determinants of population changes by systematically identifying the most relevant explanatory variables. Results show that the agricultural sector is linked to lower population growth due to limited economic diversification, while Knowledge-Intensive GVA enhances rural attractiveness by providing opportunities for skilled labor and innovation. Variables measuring climatic change negatively affect the rural appeal. The study underscores the importance of considering spatial dependencies in policy design, highlighting how neighboring regions can influence one another's demographic dynamics. These insights provide policymakers with evidence to develop more effective interventions that enhance the sustainability and vitality of rural areas, addressing both economic and environmental challenges to mitigate population decline.

Rural Proofing: Rural Proofing: lessons learnt from testing in Living Labs

Ms Giulia Martino¹, Mr Olivier Chartier¹, Dr David Miller², Dr Michael Kull³

¹Ecorys, , Belgium, ²James Hutton Institute, , United Kingdom, ³LUKE Natural Resources Institute Finland, , Finland

S55-S2 Taking into Account Diversity to Shape just Rural Futures: Novel Indicators for Resilient and Inclusive Development, Amph 2, August 27, 2025, 2:00 PM - 4:00 PM

Rural proofing aims at ensuring that public policies recognize and address the unique needs of rural areas in general, and heterogeneity within rural areas. It aims to minimise unintended negative consequences and enhance positive impacts. While this approach has been implemented in various forms globally, the European Union has committed to integrating rural proofing as part of the Long-Term Vision for Rural Areas (LTVRA).

Building on the EU's commitment to rural proofing, the GRANULAR project has developed a structured methodology to operationalize this approach.

Aligning with the LTVRA pillars, the methodology uses the GRANULAR Rural Compass to systematically assess the diverse rural challenges and opportunities. The GRANULAR framework consists of 27 elements grouped under the four LTVRA pillars (Stronger, Connected, Prosperous, and Resilient Rural Areas). It enables stakeholders to conduct bottom-up assessments of policies, considering economic, social, and environmental dimensions. Importantly, the methodology is designed to evaluate rural-urban disparities and to account for the diversity within rural areas themselves. Given the significant variations across EU rural territories, the tool is built to capture these nuanced differences, recognizing that rural areas face distinct policy challenges.

The presentation will outline the key steps implemented by the GRANULAR living and replication labs (e.g. Finland and the United Kingdom). Their experiences enable the highlighting of the its adaptability of the framework to different governance contexts and levels (local, national, EU). Initial insights from the Finnish Lab demonstrate the GRANULAR framework's adaptability to different governance contexts. The proofing exercise involved iterative steps in which the scientific partner laid the groundwork, local actors brought place-based insights, and national authorities validated the findings. This iterative process ensured that the policy choice and interpretations resonated at multiple governance levels, showcasing the methodology's capacity to bridge local realities with national policy frameworks. The approach enriched the proofing process and demonstrated the methodology's flexibility across governance levels, fostering learning and continuous improvement.

In the Rural Scotland (UK) lab the initiatives explored with the tool are being linked to local and Scottish level plans, with discussion about what can be done post-ante and how it can be deployed ex-ante.

The results of the rural proofing by the living and replication labs will be used to demonstrate how the GRANULAR methodology can support policymakers in assessing rural impacts and integrating rural perspectives into decision-making at all governance levels - thus promoting multi-level governance.

From Intentions to Migration: Investigating the Impact of Entrepreneurial Aspirations on Brain Drain in Greek Uni-Cities

Dr. Dimitrios Ierapetritis¹, Dr Thomas Georgiadis¹, Dr Yannis Psycharis¹

¹Panteion University of Social and Political Sciences, Athens, Greece

S67-S1 The Role of Higher Education Institutions in Unlocking Regional Innovation Potential and Overcoming Structural Disparities, G6, August 29, 2025, 11:00 AM - 1:00 PM

Brain drain has become a key topic in public discourse and a focal point for political actions at the European national and regional levels. It describes the emigration of highly skilled and educated persons that have left their countries and regions to study abroad and do not return after their graduation, often in pursuit of better job career opportunities and improved living standards. Concurrently, the receiving countries and regions benefit significantly from the use of these skilled human resources, leading to a "brain gain" phenomenon, as a result of highly skilled migration. The present article examines the factors that influence the decision of graduates and their willingness to stay or leave the region of graduation, based on the results of field research of 260 University students conducted in Greek University cities. Methodologically, the field research focusing on two groups of Greek regions, those known as brain drain regions and those that manage to maintain their status as brain gainers, it investigates first, the willingness of students to stay or leave their region of study. Second, it examines the relative importance of economic, social and political factors that influence students to stay or leave their region of study. Third, it explores students' entrepreneurial intentions and examines how these aspirations influence their decision to remain in their study region to establish a business.

Modes of Innovation Intermediaries and Territorial Governance of Regional Innovation : Comparison of "pôles" and "filières" in Normandy

Dr. Yihan Wang¹, Pr. Sébastien Bourdin¹, Dr. Fabien Nadou¹, Dr. Emmanuelle Faure¹, Dr. Romain Gibert¹

¹Metis Lab, EM Normandie Business School, Caen, France

S35 The Geography of Innovation: Advancing Knowledge on Industrial Districts and Clusters, E1,
August 29, 2025, 11:00 AM - 1:00 PM

Innovation intermediaries are the public or private organizations that support innovation activities by facilitating knowledge sharing and collaboration among various stakeholders in a regional innovation ecosystem. They play the crucial roles in the territorial governance of regional production and innovation activities, whereby different parties or actors of various natures contribute to working out—sometimes through discussion, and sometimes through conflict—common projects for the future development of the territories. By coordinating innovation projects and organizing social events, innovation intermediaries stimulate technological and market knowledge diffusion and strengthen the ties among stakeholders of regional innovation ecosystem.

Meanwhile, the geographical proximity of stakeholders and the organized proximity in innovation cooperation affect the business model of innovation intermediaries, in turn, they play different roles in territorial governance mechanism. Nonetheless, limited research has been done on how different types of innovation intermediaries affect regional innovation in the territorial mechanism based on geographical and organized proximity of stakeholders.

This research studies how different modes of innovation intermediaries affect territorial governance of regional innovation. Specifically, we focus on two types of public innovation intermediaries in France - "pôles de compétitivité" (pôles) and "filières d'excellence"(filières). Whereas they both gather multiple stakeholders in the regional innovation ecosystem that collaborate on common interests, they play different roles in the territorial governance of regional innovation. The "filières" are both more territorially rooted and more focused on connecting local stakeholders on specific sectors. In contrast, the "pôles" establish cross-sectorial collaborations among stakeholders in different regions.

In this research, we compared the modes and roles of "pôles" and "filières" in the territorial governance of regional innovation in Normandy, France. Specifically, we focus on the geographical location of affiliates, the organizational logic and their functions in intermediation of both types of public innovation intermediaries. Based on a survey of members from both mechanisms, as well as interviews with local actors, this study will define the specific characteristics of each territorial governance model. Thereafter, we compare how these two types of innovation intermediaries balance cooperative and competitive dynamics in regional innovation and affect the network structure of partnerships

These findings will contribute to the literature on the territorial governance of innovation intermediaries and provide insights for policymakers responsible for their management and coordination, which can present challenges within the framework of Regional Innovation Systems.

Active ageing and primary prevention policies: Counterfactual impact evaluation of a physical activity program

Dr. Lisa Sella¹, Dr. Valentina Lamonica¹, Mr. Nicola Pollo²

¹IRCrES-CNR - Istituto di Ricerca sulla crescita economica sostenibile, Torino, Italy,

²University of Modena and Reggio Emilia, Modena, Italy

S66 Sustainable Health: Progress Towards Universal Health Coverage as a Sustainable Development Goal (SDG 3.8) across the Globe, B3, August 29, 2025, 11:00 AM - 1:00 PM

A sedentary lifestyle is very common especially in the elderly population of industrialized countries. Medical studies highlight the relationship between increased sedentary lifestyle and diseases such as diabetes and obesity. Furthermore, they detect the importance of physical activity to prevent vascular and metabolic diseases. Knowledge on the effects of sedentary lifestyle have pushed European healthcare systems to experiment with specific physical activity interventions for elderly people, in order to support active ageing, and to reduce the pressure of this specific population on the national healthcare system. In fact, active healthy ageing becomes a fundamental goal in order both to improve the quality of life and to save health care costs through the promotion of positive experiences, awareness, and empowerment in population.

The study presented here is an experiment conducted in collaboration with the local health authority (LHA) of a specific area of the Piedmont region (Italy), in order to test the effectiveness of a physical activity program to support active ageing. The study evaluates the impact of a protocol of anaerobic exercises to be carried out in groups, specifically designed for elderly subjects suffering from chronic diseases and aimed at modifying their lifestyle for the prevention of disability. The research project has a twofold objective: to analyse the socio-psychological and physical benefits of the protocol, and to develop a cost-benefit analysis. The research focuses on three main indicators connected to states of sedentary lifestyle: the use of pharmacological prescriptions (e.g. anti-inflammatory drugs, gastroprotectors, etc); the use of medical-health services (e.g. psychiatric visits, physiotherapy services, etc.); and psycho-physical wellbeing. The final aim of the study is to provide strategic information for planning activities to promote active ageing in the LHA and to extend the recommendation of the protocol to the regional authority.

Methodologically, the experiment is conducted on 120 sedentary people, aged 64 or more, and with chronic conditions affecting the musculoskeletal system in a non-acute phase. They were randomly divided into a treated and a control group: the treated attend free physical activity for 9 months (a full sports year), the control group is involved in a training on healthy lifestyles. Since the project is still ongoing, the contribution will focus on the research design, the qualitative-quantitative strategy for data collection, and the preliminary results. In the end, we expect to find a significant impact on both the physical and the social well-being of the treated units.

Empirical Analysis of Quantity and Quality of Rural Entrepreneurship in France, Germany and UK: Understanding Key Enabling Factors

Prof. Massimiliano Guerini¹, Massimo Colombo¹, Lena Föner², Hanna Hottenrott³, Daniel Souza¹, Simone Sasso⁴

¹Politecnico di Milano, Milano, Italy, ²ZEW – Leibniz-Zentrum für Europäische Wirtschaftsforschung, Mannheim, Germany, ³TUM School of Management, München, Germany, ⁴European Commission – JRC, Sevilla, Spain

S61-S1 Innovation, Entrepreneurship and Industrial Dynamics in Rural Areas, Amph 3, August 27, 2025,
2:00 PM - 4:00 PM

Entrepreneurial activity is a vital component of the development of a country's economy. We study the characteristics of entrepreneurship in rural areas across France, Germany and the UK, assessing both the quantity and quality of entrepreneurial activity. Our analysis is based on business registry data in the selected countries covering the period from 2009 to 2023. We identify a number of critical factors shaping rural entrepreneurship. Additionally, we explore the impact of inter-regional spillovers from nearby urban areas. The findings provide valuable insights for policymakers and practitioners, informing strategies to foster high-potential ventures in rural regions.

Sales for Whom? -Analysis of Sale Transactions of Agricultural Land Owned by the Treasury: The Case of Turkey

Ms Nur Kardelen Öztürk¹

¹Gebze Technical University, İstanbul, Türkiye

G12-O4 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 29, 2025, 11:00 AM - 1:00 PM

This study critically analyzes the transformation of ownership structures and management regimes governing treasury-owned agricultural lands in Turkey, with a focus on the socio-economic and sectoral implications of legislative reforms enacted between 1995 and 2012. Employing a mixed-methods approach, the research synthesizes longitudinal data from the General Directorate of National Real Estate (2005–2021) and legal-textual analysis to evaluate how laws No. 4070 (1995), 4706 (2001), and 6292 (2012) reconfigured property rights, prioritizing fiscal revenue generation over welfare-oriented land distribution. Empirical findings reveal a paradoxical trend: while the aggregate area of treasury-owned agricultural lands fluctuated—peaking at 21.17 billion m² in 2013—their proportional share within total treasury assets diminished significantly, declining from 45% to 35% in unit count and 13% to 6% in areal coverage by 2021. Post-2016, under Law No. 6292, privatization accelerated, yielding record sales revenues of 271 million TL by 2021. However, this surge coincided with a contraction in agricultural output (14% decline, 2014–2021) and a reduction in registered farmers, underscoring systemic inefficiencies in linking land tenure reforms to sectoral productivity.

Thematic analysis highlights three critical outcomes: (1) Escalating land valuations post-2007 disproportionately excluded smallholders from acquisition processes, fostering non-agricultural land conversions in high-value regions; (2) Lease mechanisms generated marginal state revenue (peaking at 2.92 million TL in 2011), whereas easement rights (up to 49-year usage permits) emerged as a lucrative fiscal instrument, privileging short-term capital inflows over sustainable agrarian practices; (3) The 2012 legislative framework, though streamlining privatization, exacerbated socio-spatial inequalities by insufficiently addressing farmer livelihoods or production bottlenecks.

This study contributes to debates on land governance by interrogating the tension between neoliberal agrarian policies and food security imperatives. It advocates for transparent, equity-centric reforms that harmonize legal frameworks with smallholder inclusivity and ecological sustainability, offering regional insights pertinent to emerging economies navigating similar agrarian transitions.

Is staying a career risk or a hidden opportunity? International graduates and their career outcomes in Dutch regional labour markets

Mr Steven Kema¹, Dr Viktor Venhorst¹

¹University Of Groningen, Groningen, The Netherlands

S03-S1 Drivers and Impacts of Migration: New Insights on the Role of Labour Markets, Demographic Change, Human Capital and Networks, G6, August 28, 2025, 9:00 AM - 10:30 AM

Understanding how university graduates navigate local labour markets is important for the economic futures of regions. The presence of a highly educated workforce generates knowledge spillovers and human capital externalities (Corcoran and Faggian 2017; Faggian and McCann 2009), which in turn enhance productivity and facilitate high-technology activities (Consoli, Vona, and Saarivirta 2013). Human capital remains one of the strongest predictors of sustained economic vitality (Abel and Deitz 2012), and so graduate labour mobility not only shapes individual career trajectories but also has broader implications for regional economic competitiveness and development.

A particularly relevant group within labour mobility research is international graduates—individuals who pursue higher education in a country different from their country of origin. After graduation, these individuals face a range of mobility decisions: they may remain in their study region, relocate within the host country, or leave the country altogether. Despite its increasing policy relevance, empirical research on the underlying mechanisms of international graduate labour market entry remain underexplored (Calonge et al. 2023), particularly from a regional perspective.

Empirical evidence suggests that graduates who change location fare better than those who do not change location or industry, but those who change both location and industry do worse in the short term, both in terms of lower earnings and lower career satisfaction (Abreu, Faggian, and McCann 2015). International graduates are a special case however, as their labour market integration is influenced by both advantages, such as diverse skill sets, and disadvantages, including language barriers, visa difficulties, and weaker local professional networks (Nikou, Kadel, and Gutema 2023; Gutema, Pant, and Nikou 2023; Calonge et al. 2023).

Our work aims to address the existing research gap by quantitatively examining the career outcomes of international university graduates in the Netherlands at a regional level. Do international graduates that stay in their university region have worse career outcomes than graduates who opt to move to another region within the country after graduation?

For the analysis we utilize a rich administrative dataset from the Dutch Central Statistics Bureau (CBS) that contains all persons registered in the Netherlands, including personal information, place of residence, educational background, country of origin, work history (including salary, contract type, sector). The goal of our work is to contribute to a more comprehensive understanding of graduate labour market integration and its broader implications for regional economic development.

Growing without Cohesion (Funds)

Prof. Vassilis Monastiriotis¹

¹London School of Economics, London, United Kingdom

S81 Europe's New Industrial Policy: a Friend or a Foe for Regional Convergence?, F12, August 28, 2025,
9:00 AM - 10:30 AM

Over the last 20 years a large literature has developed evaluating the effects of Cohesion Policy on regional growth and convergence. While the literature has told us a lot about whether and how Cohesion Funds work (Mohl and Hagen, 2010; Becker et al, 2012; Fratesi and Wishlade, 2017; Di Cataldo and Monastiriotis, 2018), attention on *how* regions grow - with or without Cohesion Funds - has been at best limited. In this paper we pursue a comparative examination of the long-term regional growth processes found across the European economic space (i.e., examining the drivers of regional growth) and examine how these vary across groups of regions with different types (or 'doses') of 'treatment' in terms of Cohesion Policy. To do so, we borrow methodologically from the wage-decomposition techniques typically utilised in the applied labour economics literature. We specify an extended growth equation which we estimate separately for different groups of regions and then implement a detailed Blinder-Oaxaca decomposition in order to identify the contribution of two different components to each group's growth performance: an 'endowment' component, which accounts for differences in performance due to differences in endowments (e.g., regional level of education or investment) and a 'productivities' component, which accounts for differences in performance that are due to the productivity of each of the different endowments considered. This analysis helps us unveil the fundamental differences in the growth process between Cohesion Policy's beneficiary and non-beneficiary regions. Drawing on this, we engage in a critical discussion of the 'suitability' of EU Cohesion Policy to support balanced growth across the EU, within the context of the wider EU industrial policy objectives (digital and green transitions, economic sovereignty, strategic autonomy).

Analyzing the Interaction of Climate Change and Urban Development Using Spatial Statistical Methods: The Case of Istanbul

Ms Dilara Aydin¹, Ms Tüzin BAYCAN²

¹Istanbul Technical University, Istanbul, Türkiye, ²Istanbul Technical University, , Türkiye

S75 Cities Under Pressure: Building Resilience and Adapting to Climate Challenges, G5, August 27,
2025, 11:00 AM - 1:00 PM

The relationship between climate change and cities is complex and mutual. Cities contribute to climate change as they serve as hubs for activities such as energy production, transportation, construction, and industry, which are closely associated with high carbon emissions. On the other hand, climate change poses threats to cities through rising sea levels, extreme weather events, heatwaves, flood risks, wildfires, urban heat island effects, droughts, inadequate infrastructure, decreasing water resources, loss of green spaces, air quality issues, negative impacts on human health, and increased energy consumption. Extreme climate events, particularly in densely populated metropolitan areas, lead to substantial economic losses and social disruptions, affecting both livelihoods and infrastructure. It is essential to implement urgent action plans developed on a scientific and democratic basis to address these emerging threats. The research aims to analyse the interactions between climate change and urban development. First, district-level carbon emissions were calculated using natural gas consumption data according to the IPCC Guidelines for the National Greenhouse Gas Inventory. Following the commitments introduced by the Paris Agreement, the greenhouse gas emissions status of Istanbul's districts between 2016 and 2022 was analyzed using spatial statistical methods, specifically Hot Spot Analysis (Getis-Ord Gi*) and Cluster-Outlier Analysis (Anselin Local Moran's I). After analyzing the relevant climate change variable (greenhouse gas emissions), a regression analysis was conducted using the Ordinary Least Squares (OLS) Model to examine the relationship between dependent and independent variables. The independent variables include average household size, water consumption, the average number of vehicles recorded by transportation sensors, the number of structures within basin areas, urban settled areas, agricultural land, green spaces, reserved areas, industrial zones, and forested areas. The Global Moran's I statistic was used to measure spatial autocorrelation. The 2022 data were obtained from the IMM Open Data Portal, IMM YAYSIS, the Turkish Statistical Institute and through consultations with relevant departments of the Istanbul Metropolitan Municipality (IMM). The OLS model and spatial statistical methods used in this study have demonstrated that the interactions between climate change and urban development parameters in Istanbul's districts are strong and significant. The model revealed that factors such as urban density, water consumption and reserved areas have varying impacts across different districts. In this context, the recommendations presented in the study serve not only as solutions to existing problems but also as a crucial roadmap to guide Istanbul towards a more sustainable future.

AI-Based Geospatial Analysis for Identifying Resilient Development Areas in Seismic-Prone Gemlik, Bursa

Mr Mehmet Ronael¹, Mrs Pınar Gökçe¹, Mrs İsra Hatipoğlu¹, Mr. Cihan Mert Sabah¹

¹Istanbul Technical University, Istanbul, Türkiye

G25-O3 Enriching Research and Policy Methods in Regional Science: Digital Tools, Artificial Intelligence, Participatory Methods, Mapping Techniques, Stakeholder Involvement, Amph 3, August 29, 2025, 2:00 PM - 4:00 PM

Urban areas worldwide face a pressing challenge: balancing expansion with resilience against seismic activity. Given its location on a fault line and history of earthquakes, Gemlik, a district in Bursa, Turkey, serves as an ideal case study for addressing this issue. This research employs advanced geospatial methodologies, particularly a Weighted Overlay Analysis using Geographic Information Systems (GIS), to enhance earthquake-resistant urban planning.

To achieve this, the study introduces an innovative method that integrates the Analytical Hierarchy Process (AHP) with AI-driven simulations. A key contribution of this research is the use of AI-driven role-playing entities to represent diverse human archetypes—such as farmers, white-collar professionals, and developers—within the AHP framework. Unlike traditional approaches that rely on human participants, these AI entities provide varied perspectives, enhancing the objectivity and efficiency of the decision-making process. Through a rigorous analytical model, they evaluate key environmental and physical factors, including elevation, slope, aspect, land use, soil classification, erosion levels, geological structure, proximity to transportation networks, and access to urban amenities. By assuming distinct roles, the AI-driven entities assign variable weights to these factors in a manner similar to human experts.

This study has two primary objectives. First, it seeks to identify optimal locations for future urban development in Gemlik that minimize earthquake risks, thereby enhancing the city's resilience. Second, it serves as a pioneering pilot project, demonstrating the feasibility and effectiveness of AI integration in urban planning. By combining the precision of AI-driven analysis with the nuanced perspectives of simulated human stakeholders, this research presents a novel framework for tackling complex urban development challenges in an era of rapid technological advancement and urbanization pressures.

Institutional innovation from a transformative perspective for agroecological transition: A case study of a regional natural park project.

Mr Léo Mocquelet¹, M Frédéric Wallet², MS Rachel Levy³

¹INRAE And LEREPS, Toulouse, France, ²INRAE , Toulouse, France, ³LEREPS, Toulouse, France

S87-S1 Territorial Transitions: Exploring the Scene of Participatory Actions and Common, F5, August 27, 2025, 4:30 PM - 6:30 PM

This communication analyzes the process of institutional innovation at work in a Regional Natural Park (PNR) project under development in the Gers region, aimed at facilitating the agroecological transition. It seeks to explore the ability of the PNR team members to innovate and build cohesion through a multi-stakeholder consultation approach.

The study is based on an analysis of territorial governance as a lever for establishing trust-based relationships and fostering knowledge coordination among actors. To this end, the concept of institutional innovation is used, referring to the processes of transforming institutions to address socio-economic challenges (AlMalki et al., 2023). The research question focuses on understanding how the implementation of a territorial project in partnership with various stakeholders enables institutional innovation from a transformative perspective in favor of the agroecological transition. The underlying hypothesis is that the establishment of a multi-stakeholder consultation process fosters institutional innovation, thereby facilitating the transition to agroecology.

To address this research question, the primary methodology adopted is participant observation, used to study four meetings organized by the PNR with farmers. This method is complemented by a preliminary diagnostic phase. Preliminary results highlight the establishment of coordination processes, as well as the mechanisms and tools mobilized by the PNR. They emphasize the diversity of the actor system, their representations, and the asymmetries between participants. The results also explore the most consensual topics and, conversely, the most divisive ones. Additionally, they shed light on mechanisms of collective construction, collective learning, knowledge capitalization, and the reorientation of participants' perspectives. This dynamic of collective construction has led to adjustments by the PNR members, such as the integration of new themes and the expansion of consultations to groups outside the initial framework.

For Whom the Knowledge is Produced? An evaluation of Turkish Regional Planning Theses in the Context of Global Agenda

Melek Gökmeydan Söyler^{1,2}, Zeynep Erdoğan¹, **Arda Tuncer**¹, Çiğdem Üstün^{1,2}

¹Bursa Technical University, Bursa, Türkiye, ²Istanbul Technical University, Istanbul, Türkiye

G24-O3 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 29, 2025, 11:00 AM - 1:00 PM

Internationalization of research enables research to be shared among peers in a wider community which provides new ideas, increased scrutiny and subsequently, higher quality. At the same time, its increasing adoption over the decades has brought about questions about for whom scientific knowledge is produced, especially in social sciences. Self-reinforcing mechanisms embedded in academic publishing have been forming a core-periphery structure and leading researchers in developing countries to face a dilemma: Whether to prioritize local or international subjects of interest in their research. As a result, a unique type of ‘publish or perish’ has emerged for these researchers. While globally adopted practices in higher education are forming the basis for publishing internationally, sufficient response to local needs may not emerge either due to adoption of globally popular but unfitting theories and practices developed in the core or complete disinterest towards the local/national level as a subject.

Regional planning is not exempt from these trends. This study seeks to understand the case of regional planning in Turkey with respect to the wider trends taking place in social sciences around the world. Towards this goal, the study makes a comparison between the subjects of regional planning and studies theses in Turkey and those of articles published in leading journals in this field as an indicator of international agenda. This comparison is prepared for three distinct periods, 1980-2001, 2002-2009 and 2010-2022, based on the digital availability of national-level dissertation data from 1980s onwards and breaking points concerning the regional planning in Turkey. Co-occurrence network analysis and trend analysis are used on the abstracts of theses and author keywords of articles to compare the most used keywords. Bibliometric analysis tool based on R, “biblioshiny”, is used for the analysis purposes in this regard.

The results highlight that regional planning research in Turkey has primarily been following the national agenda compared to the international one. While this means the research is responding to local and national needs, it also requires further research into whether expertise over global issues as well as theories and practices is lagging or not in Turkish regional planning academia. National scientific communities need to find a ‘goldilocks zone’ (neither too hot nor too cold) to be both on the forefront of global scientific agenda and responsive to local and national needs.

Depopulation and Vulnerability of Historic Centers in Southeastern Spain: A Territorial and Sub-Municipal Perspective

Mrs. Rocío Pastor Lamberto¹, Dr. Fernando Miguel García Martín¹

¹Universidad Politécnica De Cartagena, Cartagena, Spain

G14-O2 Left Behind Areas, Insularity, Inner Areas and Border Regions, B4, August 28, 2025, 9:00 AM - 10:30 AM

This research explores negative economic and demographic dynamics in specific areas that persist even in growing regions, such as those in the Spanish Mediterranean. It focuses on the southeastern provinces (Alicante, Murcia, and Almería) and, in particular, on medium-sized cities located in inland areas with heritage-rich historic centres. These urban centres face a dual vulnerability dynamic. On the one hand, they experience territorial vulnerability, as they grow at a slower rate compared to large cities and coastal areas. On the other hand, their historic centres suffer from sub-municipal vulnerability, due to the concentration of population and economic activity in more modern urban areas. To assess these dynamics, urban centres are characterized based on their territorial location, morphology, and heritage values. Socioeconomic indicators are analysed at both the municipal and sub-municipal levels, including population, unemployment rates, economic activity, industry, construction, and services. The comparison between different types of urban centres reveals common patterns of depopulation in cities with significant heritage value. The analysis of these two scales of vulnerability allows for an evaluation of how historic centres are affected, posing challenges to their conservation and endangering their cultural value. The results identify left-behind areas at a sub-municipal scale that are embedded within broader regional dynamics. Understanding these processes is crucial for designing conservation and rehabilitation strategies for historic centres, thus contributing to their long-term sustainability.

Exploring the Drivers and Barriers of Youth Entrepreneurship in European Uni-Cities: A Comparative Analysis of Central and Southern Europe

Dr. Dimitrios Ierapetritis^{1,2}, Dr. Alina Schoenberg², Dr. Thomas Georgiadis¹, Dr. Yannis Psycharis¹

¹Panteion University of Social and Political Sciences, Athens, Greece, ²IMC Krems University of Applied Sciences, Krems, Austria

S67-S2 The Role of Higher Education Institutions in Unlocking Regional Innovation Potential and Overcoming Structural Disparities, G6, August 29, 2025, 2:00 PM - 4:00 PM

Recent studies have indicated that the promotion of youth entrepreneurship, in addition to its role in mitigating youth unemployment, is a key driver of innovation and economic development. This has prompted Universities to actively promote entrepreneurship among students shaping entrepreneurial mindsets and providing support services to graduate start-ups. The present paper based on the findings of field research of 420 University students, conducted in University cities across Central and Southern Europe (carried out in Uni-Cities of Austria and Greece) sets out to examine the key drivers and barriers that promote or inhibit the entrepreneurial tendencies of young graduates. The analysis of these results has led to the formulation of policy proposals to support youth entrepreneurship in European regions.

Key Factors in Healthy Ageing: A Regional Analysis

Ms Eva Výrostová¹

¹Faculty of Economics and Administration, Masaryk University, Brno, Czech Republic

G07-O2 Spatial Attributes of (de)Population, Ageing, Loneliness and Demographics, D1, August 28,
2025, 4:30 PM - 6:30 PM

The proportion of older people in European countries is increasing, impacting various aspects of society, including health and social systems, social infrastructure, productivity, economic growth, and quality of life. Promoting healthy ageing can enhance the labour supply, reduce early retirement, alleviate pressure on health and social care systems, and enable older individuals to contribute meaningfully to their families and communities. Consequently, healthy ageing is a significant area of research.

Healthy ageing is a multifaceted concept that includes the absence of chronic diseases, good mental and physical functioning, normal cognitive function, and active social participation. The WHO defines healthy ageing as “the process of developing and maintaining the functional ability that enables wellbeing in older age.”

This research study aims to evaluate the determinants of healthy ageing at a regional level, focusing on the social and physical environment while controlling for personal characteristics (e.g., age, gender, income, education, socio-economic and marital status). We combine individual-level data from the Survey of Health, Ageing and Retirement in Europe (SHARE) with Eurostat data. The study aims to identify key drivers contributing to healthy ageing, and discuss their policy implications.

The work was supported from ERDF/ESF project Ageing of the population and related challenges for health and social systems (AGEING-CZ) (No. CZ.02.01.01/00/23_025/0008743).

Inflation Persistence and Club Convergence: A Regional Analysis of the Brazilian Case

Mr Cleomar Gomes da Silva¹, Ms. Sinara do Valle¹

¹Federal University of Uberlândia (PPGE-UFU), Uberlândia, Brazil

G02-O4 Regional Growth Models, Competitiveness, and Convergence, B1, August 28, 2025, 4:30 PM - 6:30 PM

This paper investigates the dynamics of regional prices in Brazil, focusing on inflation persistence and convergence, for the period January 2003 - November 2024. Time-Varying Parameter models and Club Convergence estimations are applied to analyze the regional inflation rates of the following cities: Belem, Belo Horizonte, Brasilia, Curitiba, Fortaleza, Goiania, Recife, Salvador, Rio de Janeiro, Sao Paulo, and Porto Alegre. Regional inflation is also disaggregated into nine components: food and beverage, housing, household items, clothing, transportation, health and personal care, personal expenses, education, communication. The “food and beverage” component is also broken into “food at home” and “food away from home”. The results reveal significant heterogeneity in price dynamics among Brazilian cities, with low inflation persistence in Sao Paulo, Salvador, Belem, and Brasilia, and high persistence in Curitiba. The Covid-19 pandemic increased inflation inertia in Recife, Belo Horizonte, Rio de Janeiro, and Curitiba, but not in Fortaleza. Overall convergence is not observed in the regional headline CPI-IPCA inflation rates, but only clubs characterized by the transitional divergence and turn-around phase. However, when the regional sectoral disaggregated inflation rates are analyzed, global convergence is found in the household items and transportation components, whereas the transitional divergence and turn-around phase is detected in the behavior of the communication, food and beverages, and food at home components. This transitional divergence and turn-around phase, which can be seen as a type of weaker convergence, is also the pattern observed in the convergence clubs formed by the other regional sectoral inflation rates, except in one case. It means that, even though Brazil is a country of continental dimensions, its inflation rate components have some idiosyncrasies that eventually make them converge in some way.

Understanding the Differences in Regional Business Environments: Lessons from the Initial Phase of Subnational Business Ready in the European Union

Mr Burak Turkgulu¹, Mr Mihir Nikhil Madhekar¹, Ms Penelope Demetra Fidas¹

¹World Bank, Washington, United States

G02-O2 Regional Growth Models, Competitiveness, and Convergence, B1, August 27, 2025, 4:30 PM - 6:30 PM

Subnational Business Ready is a new demand-driven World Bank product which provides actionable data for policy makers on the local business environment. The data provides granular measures for quality of the regulatory framework, availability of public services, and operational efficiency in the topics of business entry, business location, utility services, dispute resolution, and business insolvency. This study presents findings from the data collected for 40 cities in six EU member states as part of the initial phase of the Subnational Business Ready in the EU project funded by the European Commission's DG REGIO. The data show that even though the measured cities perform well in general, there is appreciable variation in overall performance across the cities in four of the five topics both within and across borders. At a more granular level the data shows that while the regulatory frameworks are consistent within countries and quite homogenous across them, most of the measured variation is attributable to differences in operational efficiency (based on expert and firm-level data) and availability of public services. The observed variation indicates that there are ample opportunities for cross-city learning to provide better local business environments. Additional econometric analysis uncovers that higher population may explain better availability of public services on average within a country, and more surprisingly, higher income levels are significantly associated with lower operational efficiency within a country. These findings might be explained by the facts that larger cities respond to higher demand by providing better public services, but in higher income cities, public services are more costly to supply, and the firms are more willing to both pay and wait for those services anticipating higher returns. As a results, policy makers in higher-income cities can potentially have social efficiency gains from initiatives that promote more efficient service provision.

Unlocking Synergy through Territorial Compass of Cooperation: Evaluating Cross-Sectoral Collaboration in the Transition to a Circular Economy

Prof. Zbigniew Przygodzki¹, Ph.D Jagoda Adamus¹

¹University of Lodz, Lodz, Poland

S17 Regional Science in Turbulent Times: Embracing Circularity through Multi-stakeholder Engagement, G5, August 27, 2025, 2:00 PM - 4:00 PM

Coherence and synergy of stakeholder activities in local development can be considered at the level of goals and results of activities. This is a basic condition for including an integrated approach in development processes. The transition towards a circular economy requires the involvement of all groups of partners responsible for forming the circular cluster: companies, academia, society and regional and local government. This involvement requires monitoring and coordination. Such coordination should be the government's responsibility at the local and regional levels. Integration of activities induces synergy and is a function of the speed of change and the relevant dynamics of territorial development. This element is particularly important regarding systemic change, i.e. the evolution of a free market economy, operating under a linear production model, into a circular economy. However, it should be emphasised that integrating activities on a territorial scale (circular territorial cluster, CTC) does not necessarily mean direct cooperation between partners. The most important thing is that the activities of individual partners, to the greatest extent possible, affect the solution to the challenges of the other partners. Hence, the article aims to identify the scope of impact of the projects implemented by individual CTC stakeholders on the realisation of the other partners' challenges and objectives of the projects. In other words, the study aims to identify the extent of the interplay of ongoing projects for building a circular economy. The article also presents the tool, Territorial Compass of Cooperation, by which this identification is possible, indicating the desired direction of intervention to strengthen the convergence of territorial development stakeholders.

Storming the Ballot Box. The Effect of Extreme Weather on Electoral Outcomes in Italy

Dr. Carlo Caporali^{1,2}, Cecilia Castaldo¹, Alessandro Palma¹

¹GSSI - Gran Sasso Science Institute, L'aquila, Italy, ²NOVA - School of Business and Economics, Lisbon, Portugal

S43 Regions at Risk: Climate and Weather Extremes in Local Perspective, F5, August 28, 2025, 4:30 PM - 6:30 PM

Our paper addresses this gap and sheds light on the complex dynamics between a changing climate and collective behavior by conducting a large-scale investigation of the causal impact of extreme weather events on electoral outcomes (turnout and electoral preferences) in Italy from 2004 to 2022. Our results show that exposure to extreme weather events shortly before an election significantly decreases voter turnout in regional, national, and European elections, while increasing electoral participation in municipal elections. Additionally, we find that green parties gain electoral support relative to both left-wing and right-wing coalitions.

Does Immigrant Integration Foster Positive Attitudes towards Immigration? Evidence from the UK

Dr. Rachael Kei Kawasaki¹

¹European University Institute, Fiesole, Italy

G10-O1 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,

August 27, 2025, 11:00 AM - 1:00 PM

Many critics of immigration argue that immigrants fail to integrate, forming parallel societies. Conversely, in areas with more negative attitudes, immigrants may face greater social exclusion, limiting their opportunities in the labor market, housing, and social life. While previous research has examined the determinants of attitudes and the drivers of integration separately, little quantitative work has explored how these factors interact—whether integration fosters more positive attitudes or whether negative attitudes hinder integration.

This paper addresses this gap by investigating whether people in areas with more integrated immigrants develop more positive attitudes toward immigration over time. Using panel data from the British Election Study and longitudinal data from Understanding Society, it employs a hybrid three-level multilevel model to disentangle the effects of individual characteristics, local area context, and immigrant integration on attitudes. By doing so, this study aims to determine whether and to what extent immigrant integration influences public attitudes. These findings will offer empirical evidence on whether fostering integration can reduce anti-immigrant sentiment, informing policies that promote social cohesion and counteract social divisions.

A Toast to Health? The Unintended Impact of Pesticides in Italy's Prosecco Region

Professor Alessandro Palma¹, Mr Giuliano Marco Federico Rolle¹, Professor Daniela Vuri²

¹Gran Sasso Science Institute, L'aquila, Italy, ²DEF Tor Vergata, Rome, Italy

S43 Regions at Risk: Climate and Weather Extremes in Local Perspective, F5, August 28, 2025, 4:30 PM - 6:30 PM

The rapid growth of Prosecco wine production in the Veneto Region (Italy) has intensified pesticide use, raising urgent concerns about maternal health and child neurodevelopment. Although prior epidemiological studies have identified links between prenatal and early-life pesticide exposure and adverse birth outcomes, limited evidence exists on its long-term cognitive effects in high-income European countries.

This study addresses that gap by analyzing how municipal-level pesticide restrictions—enforced under Regional Executive Resolution DGR no. 1379/2012 of the Veneto Region—impact children's health at birth and their later-life cognitive development. The policy-driven staggered introduction of pesticide restrictions has generated variation in exposure levels across municipalities and over time. The findings indicate that reduced in-utero and early-life pesticide exposure is associated with higher mathematics scores in early grades, highlighting the importance of perinatal environmental factors in shaping human capital. These results underscore the critical role of strict environmental regulations in safeguarding vulnerable populations. They also suggest that sustainable pest management not only benefits public health but contributes to improved educational trajectories

Transition to organic farming in Brazil: local matters

Dr. Alexandre Florindo Alves¹

¹State University Of Maringá, Maringá, Brazil

G12-O2 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 27, 2025, 2:00 PM - 4:00 PM

The study deals with the transition to organic agriculture in the Northwest region of the State of Paraná (Brazil), focusing on challenges and marketing aspects. The first contribution is to provide additional local knowledge, which is widely recognized due to regional and local specificities. Second, it contributes by bringing some results that can be described as rare in the scientific literature, mainly related to marketing issues. The main objective of the study is to identify relevant aspects faced by producers during the transition to organic production. It is worthwhile because this process has regional characteristics, and knowledge of them can assist both new producers entering the transition process and policy makers. The research was conducted with seven out of seven family-owned certified small farms in one municipality, using two rounds of interviews. This approach enabled the inclusion of producers who were in transition at the time of the first round, but had achieved formal certification by the time of the second round. Recent certification (less than 2 years) allowed for a more accurate collection of information when producers had a fresher memory of the transition process. Organic production consists mainly of leafy vegetables. Production destinations (final consumers or not) are mainly local (in the community) and include residents (direct sales or street markets), markets/supermarkets, restaurants, hospitals and government programs. The route to these destinations can be direct or through a cooperative. The properties are mainly located in peri-urban areas. Key findings include stability or decrease in productivity during the early stages of transition and issues related to agricultural practices and use of inputs. Marketing has faced obstacles such as the lack of price premium during the transition period, the difficulty of selling certified products at organic prices due to the size of the local market, and problems with contractual rigidity when selling to government programs. Despite small or no price premium, market access is easier once certification is achieved. Despite the challenges of the transition process, the outlook for organic production in the region is promising. The study also suggests improvements in public policies and provides recommendations for future research on costs and certification.

Road infrastructure and freight capacity as factors of regional divergence in Mexico

Dr. Maritza Areli Velazquez Villalpando¹, Dr. Rubén Macías Acosta²

¹Center for Economic Research and Teaching, Toluca, Mexico, ²Autonomous University of Aguascalientes, Aguascalientes, City, México

G05-O1 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 27, 2025, 11:00 AM - 1:00 PM

The paper analyzes the impact of road infrastructure and freight capacity on regional divergence in Mexico. It highlights how the availability and quality of infrastructure influences economic development, trade connectivity and regional competitiveness. The research highlights that some regions, mainly in the center and north of the country, have logistical advantages that favor national and international trade, while others, especially in the south-southeast, face limitations despite having roads.

Previous studies on the relationship between infrastructure and economic development in Mexico and Latin America are reviewed, concluding that investment in infrastructure is key to growth, but not sufficient without an adequate logistics strategy. The methodology used is quantitative-descriptive and correlational, evaluating the extension and density of roads, freight transport capacity and industrial profile of each state.

The results indicate that infrastructure alone does not guarantee industrial development or trade integration. The need for public policies that promote the efficient use of existing infrastructure and new strategic investments to reduce regional inequality is emphasized. Finally, the potential of nearshoring in Mexico is highlighted, underlining the importance of adequately connecting development poles with centers of consumption and international trade.

In a bid to estimate real wage differentials: a place of urban (dis)amenities and heterogeneity of consumption

Ms Uliana Koriugina¹

¹National Research University Higher School Of Economics, Moscow, Russian Federation

G23-O3 Labor Markets, Unemployment, Gig Economy, Digital 'Nomads', Amphitheater II - SAKIS
KARAGIORGAS, August 29, 2025, 2:00 PM - 4:00 PM

Scholars in urban economics have prominently paid attention to the questions of, firstly, wage differentials across labour markets, study of which was further continued in study of aspects of urban wage premium, and, secondly, the interarea differences that are found not only in price levels but also in non-price consumption, i.e. in consumption of available urban amenities. While researchers studying urban wage premium focus on the sources of the premia that underlie in agglomeration economies, they usually account for cost of living differentials applying price indices. Whereas researchers exploring differentials of cost of living emphasize that price indices do not fully reflect utility levels of workers as the latter may have different consumption levels and heterogeneity in tastes. That creates a gap in the field: while there have been major contributions to the understanding of urban wage premium, little is said about whether real urban wage premium reflects the real wage differentials, or not. We need further exploration of interarea differences in available goods and amenities, as it would allow not only to adjust wages to area price and non-price costs but also to explore the effects agglomeration has on aggregated costs of living.

This work aims to propose a new approach of interarea differentials estimation applying RLMS-HSE microdata for Russian urban and non-urban areas. Our methodology, on the one hand, is based on the limited available microdata about workers characteristics, their consumption and local price levels. On the other hand, RLMS-HSE data allows us to obtain detailed consumption characteristics, as well as available area amenities and living conditions, all of which we can apply to estimate costs of living with account for heterogeneity in tastes. Then we provide estimations of the real urban wage premium for Russian cities of different sizes applying several OLS regression models that include price and non-price area costs.

Boom & Bust era is over(?) Future of Arctic frontier regions in the 6th technological paradigm.

Mr Aleksandr Polozun¹

¹National Research University Higher School of Economics (Russia, Moscow), Moscow, Russian Federation

G14-O3 Left Behind Areas, Insularity, Inner Areas and Border Regions, B4, August 29, 2025, 9:00 AM - 10:30 AM

Urban scholars (Christaller, Lösch) view cities as interconnected hubs exchanging goods, services, and information. From Fujita's to Krugman's work, economic geography highlights the importance of concentration—ideas, innovators, and consumers—for sustaining innovation. High-speed roads link cities, while internal spaces like coworking centers foster local collaboration, enhancing global economic prospects.

Things are quite different in the Remote North, a part of the Russian Arctic and the Far North, which is characterized by conditions of extreme remoteness from the main settlement zone and the sparseness of the network of settlements. Remote cities have worse conditions of development precisely because they fall out of the hierarchical network of settlements. In this paper we will study remote cities in the Far North. So where do cities in the Far North come from?

Far Northern cities emerge near oilfields, but field-based urbanization typically occurs during the 3rd Kondratiev wave, marked by high transportation costs that make local production cheaper than importing goods. However, under rotational development models, such as the Yamburg camp established in 1982, cities are unnecessary for field operations.

Today we are increasingly encountering news and publications about the predominant role of rare earth metals. It is quite common to hear the opinion that rare earth metals are the new oil. Will the active development of these resources have the same multiplicative effect as was boom in gold, oil and gas production?

The study is based on the analysis of population dynamics in the cities of the Russian Far North in connection with the beginning of field development and tests the hypothesis: in modern conditions, the commissioning of a field no longer has a multiplicative effect on the development of a city. It is planned to compare census data on the population of cities in the Far North of the Russian Federation and data on the start of field development taken from the websites of mining companies and Rosgeolfund. In most cases, data from major resource companies such as Gazprom, Rosneft, Lukoil, Novatek, etc., including their subsidiaries, for the period from 1991 to the present will be used.

As a result, we will attempt to answer the question of what can stop or slow the extinction of northern cities and is it true that the era of the frontier is gone from northern territories forever?

The role of innovation on Tourism firms' performance: a regional approach

Prof. Joana Costa¹, Prof. Rui Costa¹, Prof. Adriana Miki¹

¹Universidade de Aveiro, Aveiro, Portugal

S58-S2 Measuring the Social Impact of Tourism in the European Union, E12, August 28, 2025, 4:30 PM

- 6:30 PM

Innovation plays a critical role in shaping the performance of tourism firms, still, its impact is heterogeneous across the rural-urban divide. Urban areas, with high population densities, established infrastructure, and access to knowledge networks, offer a fertile environment for tourism firms to innovate and scale. Conversely, rural tourism firms face structural constraints and adverse environments but can leverage innovation to capitalize on their unique resources and niche markets. In urban areas, tourism firms benefit from agglomeration economies. Their proximity to academia and other firms fosters knowledge spillovers and facilitates collaborations that drive innovation. These innovations can help firms differentiate themselves in competitive markets, raising efficiency. Rural tourism firms also stand to gain substantially from innovation, notwithstanding their innovation dynamics often differ. They rely on natural landscapes, cultural heritage, and local traditions, which opens avenues for product innovation through experiential tourism. The rural-urban divide also shapes the types of innovation tourism firms pursue. Urban firms tend to prioritize technological and process innovations, whereas rural firms may focus more on social and organizational innovations. The paper explores the heterogeneous impact of innovation in tourism firms in Portuguese municipalities, based on a purposefully built database. A survey was run to gather information about innovation practices of Tourism firms which was later combined with economic and financial data from ORBIS. Empirical evidence supports the existence of regional heterogeneity, controlled for specific firm characteristics. The empirical evidence further reinforces the centrality of policy intervention, to bridge the innovation gap. On the one hand, urban firms may need incentives for sustainable practices to mitigate over-tourism, while rural firms can benefit from infrastructure improvements and digital literacy programs. Reassuring knowledge transfer between urban and rural firms, through innovation hubs or tourism clusters can foster mutual learning and promote balanced regional tourism development. Innovation is a vital driver of tourism firms' performance, with context-specific opportunities and challenges across the rural-urban divide. The strategic adoption of innovative actions aligned with the uniqueness of the environments, will enhance competitiveness, promote sustainable growth, and contribute to regional economic vitality.

Exploring the link between circular economy behaviours and resilience in rural and urban communities: A national survey analysis

Dr. Bogdan-Constantin Ibanescu¹, Dr. Alexandra Gheorghiu¹, Dr. Sebastien Bourdin, Dr. Alexandru Banica¹

¹Alexandru Ioan Cuza University/Centre for European Studies, Iasi, Romania

S01-S1 The Spatial, Regional and Urban Dimensions of Circular Economy, Amphitheater II - SAKIS

KARAGIORGAS, August 27, 2025, 11:00 AM - 1:00 PM

The recent discourse on resilience has highlighted its significance at regional, but also, individual, and community levels, prompting discussions on the drivers of resilience capacity across various systems. While regional resilience studies have predominantly explored the relationships between resilience capacity, innovation performance, accessibility, and economic strength, individual resilience research has largely focused on psychological factors. However, some studies have begun to investigate whether individual and community resilience can also be linked to behavioural indicators, most importantly, circular economy behaviours, suggesting a broader approach to understanding resilience. The relationship between circular economy behaviours, such as recycling, reusing, or resource conservation, and resilience has gained, therefore, some scientific traction. Circular economy behaviours are designed to minimize waste and make the most of available resources, thus contributing to sustainability and environmental health (Ghisellini et al., 2016), but also to fostering resilience (Walker & Salt, 2012). It is believed that individuals engaged in circular behaviours are more likely to exhibit resilience due to their proactive approach to resource management and problem-solving (Luthar et al., 2000). Circular behaviours require a mindset oriented towards sustainability and future planning, which is closely related to psychological resilience—the capacity to cope with and recover from stress or hardship (Masten, 2018). Moreover, communities that embrace circular economy principles tend to be more resilient as they foster social cohesion, reduce dependency on external resources, and promote local economic development (Klein et al., 2003; Kirchherr et al., 2017). Thus, the integration of circular economy behaviours is hypothesized to enhance both individual and community resilience by fostering sustainability, reducing vulnerability to resource depletion, and enhancing social capital (Rockström et al., 2009). Our research aims to explore these relations, examining the differences between rural and urban areas and the implications for policy and community development.

This study employed a cross-sectional survey methodology to investigate the relationship between circular economy behaviours and resilience among individuals and communities in a national context. The survey targeted a representative sample of over 1200 respondents from Romania, ensuring a balanced representation of both rural and urban areas, as well as across age groups, gender, and regions.

The findings of this study reveal a significant positive correlation between engagement in circular economy behaviours and individual resilience scores. Furthermore, the analysis highlighted notable differences between rural and urban respondents, which raised the question of the access to dedicated resources and infrastructure, as main drivers of circular behaviours.

Subregional disparities in Russia: impacts of local growth centers and administrative border position factors

Mr Yuri Kulchitsky¹, Ms Uliana Koriugina¹

¹National Research University Higher School Of Economics, Moscow, Russian Federation

G14-O1 Left Behind Areas, Insularity, Inner Areas and Border Regions, B4, August 27, 2025, 2:00 PM - 4:00 PM

A broad spectrum of research addresses disparities and the processes of divergence and convergence at the subregional level. The dependence of municipal growth on local factors and distance from local growth centers has been well-documented using data from Europe, Russia, and China. While it is widely recognized that areas near state borders often face challenges in economic development, the impact of administrative border proximity at the subregional scale remains relatively underexplored. In highly centralized countries with limited subnational autonomy and strong reliance of municipal growth on regional policies, regional differences often emerge as significant factors, related to the mechanisms of financial support and subsidies as well as to the infrastructure development policies. Previous studies have highlighted that regional administrative borders can act as barriers to municipal growth. Such barriers are particularly pronounced for municipalities located near local growth centers, which could otherwise benefit from spillover effects, proximity advantages and shared market opportunities.

This study provides estimations of a generalized linear modeling framework with spatial dependence, integrating local Moran's indices and incorporating spatial factors related to border position and proximity. Key parameters include growth rate of production, average monthly wages, population density, and several proxies representing regional policy effects within municipal territories. The proposed method allows to identify municipalities experiencing reduced economic growth due to their border position, signaling the presence of barriers or inadequate targeted support. Results of a study offer a basis for refining regional policy interventions and contribute to a deeper understanding of how administrative divisions and institutional factors influence the development of local economies. Moreover, the findings highlight potential gaps in national and regional policies, suggesting the need for adjustments to federal and regional programs and subsidies to better support affected municipalities.

The Resilience and Fragility of Türkiye's Transportation and Storage Supply Chain in Response to the Kahramanmaraş Earthquakes

Dr. Semanur Soyuyigit¹, Dr. Suat Tuysuz², Dr. İbrahim Tuğrul Çınar³, Professor Tüzin Baycan⁴

¹Kirklareli University, Kirklareli, Türkiye, ²Erzincan Binali Yıldırım University, Erzincan, Türkiye,

³Eskisehir Anadolu University, Eskisehir, Türkiye, ⁴Istanbul Technical University, Istanbul, Türkiye

G01-O7 Urban, Regional, Territorial and Local Resilience, B5, August 28, 2025, 4:30 PM - 6:30 PM

This paper aims to analyse the transportation and storage industry supply chain in Türkiye, which was severely impacted by the two destructive earthquakes in early 2023, through the lens of complex network tools. To achieve this, we utilized inter-provincial trade data from 2019, released by the Ministry of Industry and Technology. The findings revealed that the supply chain network of the transportation and storage industry is highly interconnected and dense. However, this interconnectedness follows a power-law distribution and is statistically heterogeneous, indicating the presence of a few super-hubs within the supply chain. Centrality analysis based on the HITs algorithm highlights the significance of the earthquake-affected provinces in the transportation and storage industry supply chain in Türkiye, in terms of both demand and supply. Furthermore, an examination of the right and left eigenvector centralities reveals that the provinces in the region are systemically important within the chain. We also identified four trade communities within this supply chain, with ten provinces affected by the earthquakes belonging to the same community. We interpret this as a factor that increases the vulnerability of the supply chain network to disaster shocks. Aggregating the entire earthquake-affected region, the centrality analysis indicates that the region is both fragile and systemically important for Türkiye's transportation and storage supply chain.

This study is prepared within the scope of 1001 - Scientific and Technological Research Projects Support Program of TÜBİTAK (Project ID: 223K626).

Structural change, job loss and worker mobility

Ms Jemina Kotila¹, Prof. Jaakko Simonen¹, Prof. Philip McCann²

¹University of Oulu, Oulu, Finland, ²University of Manchester, Manchester, United Kingdom

G09-O1 Migration, Mobility Patterns and Impacts Across Space, B1, August 27, 2025, 11:00 AM - 1:00 PM

At the beginning of the millennium, the Oulu region in Northern Finland was home to one of the most significant technology clusters in the country. In its prime years, the high-tech sector of the region employed nearly 14,000 workers, and the majority of the workers represented the manufacturing industries. However, the high-tech sector of the region went through a sudden structural change in 2008–2013, and especially the electronics industry suffered a dramatic decline: its employment shrank from almost 6,000 in 2008 to less than 3,500 in 2013 causing major turbulence to the local labour markets. We focus on approximately 2,500 employees in the electronics industry who lost their jobs during 2009–2014 and were forced to adapt through industrial and/or regional mobility. We provide a longitudinal analysis of the adaptation processes within and across regions and industries using exceptionally comprehensive, high-quality microdata FOLK from Finland. FOLK start from the end of 1980s and include virtually all individuals living in Finland, offering a unique possibility to investigate individual labour market outcomes, adaptation processes, and career paths in the long run. We contribute to the literature by investigating the role of previous work history in the adaptation process using logistic regressions. Preliminary results show that many of the individuals had substantially long work histories within high-tech manufacturing before displacement. Experiencing industrial mobility has been more common compared to regional mobility in the past. This trend is also visible right after the redundancy, as most of the re-employed displaced workers remain in the Oulu region, and this share only increases over time. Many workers in the Oulu region find initially jobs within high-tech services, but later the shares in high-tech manufacturing and outside the high-tech sector grow. Workers who leave the Oulu region appear to also leave high-tech manufacturing and end up working in high-tech services or outside high-tech industries.

The Role of Participatory Tools in Foresight for Spatial Planning

Prof. Elias Grammatikogiannis¹, Prof. Maria Giaoutzi²

¹Harokopio University, Assistant Professor, Athens, Greece, ²National Technical University of Athens, Athens, Greece

G18 Voting Patterns, Participation, Discontent, Representation, Euroscepticism, B4, August 29, 2025,
11:00 AM - 1:00 PM

In recent years participatory planning has gained significant importance in promoting the dialogue between policy makers and stakeholders, however, citizen's involvement has been still facing a range of interesting challenges. Despite the advantages introduced by the recent boosting in technological developments for the elimination of the barriers in the field, no corresponding progress follows as to the effectiveness of citizen involvement in decision-making processes in spatial planning. In this context is worth exploring the role of participatory tools in Foresight, as one of the most important stages in planning, since it may greatly contribute to the effectiveness of the process, by rounding strict technocratic frameworks and increasing citizen's awareness.

Therefore the present paper aims at highlighting the potential contribution of the participatory tools in the foresight process in spatial planning, by presenting in the first part the role of participation in foresight processes, while in the second part the toolbox of available participatory approaches likely to be used for increasing the effectiveness of the foresight process. In the third part the potential patterns of involvement of participatory tools in the foresight process will be presented, while in the fourth part a set of cases from EU projects will be discussed as to their policy implications for planning. Finally, useful conclusions of good foresight practices involving participation are drawn, in order to strengthen the effectiveness of foresight in spatial planning.

Comparative Analysis of the Spatial Accessibility to Services in the Peri-urban Areas of Post-socialist States: Vulnerability or Opportunity?

Mr Oliver-Valentin Dinter^{1,2}, Mr Alexandru Banica¹, Mr Cristian-Manuel Fosalau¹, Mr Abdelillah Hamdouch², Mr Corneliu Iatu¹, Karima Kourtiti¹

¹Alexandru Ioan Cuza University of Iasi, Iasi, Romania, ²University of Tours, Tours, France

S06-S1 From Vulnerability to Opportunity: Building Resilient and Liveable Cities through Sustainability and Digitalisation, E12, August 27, 2025, 4:30 PM - 6:30 PM

The socialist regimes in Eastern Europe imposed strict urban planning, with the state being the only actor in this process, while private property was almost non-existent. This determined compact urban spaces focused on industrial development and collective housing. Following the transition to a market economy, decentralization and the withdrawal of state control resulted in permissive local authorities and multiple private actors driving development, without a clear legislative framework. In Romania and Poland, peri-urban areas have experienced a chaotic and unsustainable growth which was dominated by residential developments, as a response to housing demand. These areas are characterized by numerous socio-spatial inequalities, manifesting limited access to essential services despite their attractiveness determined by lower real estate prices and perceived tranquility.

This study examines socio-spatial inequalities in peri-urban areas of six case studies—Szczecin, Bydgoszcz and Lublin in Poland, as well as Timișoara, Cluj-Napoca and Iași in Romania—using the concept of the 15-minute city. By mapping accessibility to services categorized according to Maslow's hierarchy of needs, a 15-minute city proximity index was computed to identify vulnerable territories. The analysis also correlates accessibility patterns with real estate prices to understand how service provision impacts area attractiveness. Data sources include high-resolution Global Human Settlement Layer (GHSL) population rasters, Google Maps API for service locations and ratings, and web-scraped real estate prices.

Findings reveal significant inequalities in service accessibility within peri-urban areas, shaped by local and national factors. Policies tailored to each study area's unique characteristics are proposed to mitigate these disparities and enhance resilience. Future research will involve interviews with stakeholders to better understand motivations and propose solutions at local and national levels aimed at fostering sustainable development patterns and improving quality of life.

UK and European Comparisons of City and Regional Risk-Pricing Responses to Economic Shocks

Prof. Philip McCann¹, Dr Michiel Daams², Dr Paolo Veneri³, Dr Richard Barkham⁴

¹University of Manchester, Manchester, United Kingdom, ²University of Groningen, Groningen, Netherlands, ³Gran Sasso Institute, L'Aquila, Italy, ⁴CBRE Dallas, Dallas, USA

G02-O2 Regional Growth Models, Competitiveness, and Convergence, B1, August 27, 2025, 4:30 PM - 6:30 PM

This paper will examine data from more than 15,000 large scale commercial real estate investments in the office, retail and industrial sectors to identify how the UK and European investment markets responded to economic shocks, namely the 2008 global financial crisis, the 2016 Brexit vote, and the 2020-2021 Covid-19 lockdown crisis. We compare different types of comparator city and regional groupings in the UK and in different parts of Europe and we examine how the city and regional investment yields and risk premia respond to these shocks. We also examine how QE quantitative easing affected different types of cities and regions in terms of their investment yields and risk premia. We consider, in particular, how the trends in investment yields and risk premia were affected by the major economic shocks of the 2008 global financial crisis, the 2016 Brexit vote, and the 2020-2021 Covid-19 lockdown crisis, and we examine how the different responses to these crises affected different types of cities and regions in different ways. As part of our research, we will construct synthetic controls for different types of cities and regions, each built on different periods spanning one or more of these shocks. Finally, by considering the patterns and trends of city and regional investment yields and risk premia across different types of places, we aim to provide on the regional effectiveness of monetary policy.

The General Equilibrium Effects of Urban Air Quality Policies : Application to the Grand Paris LEZ.

Ms Eva Gossiaux¹, Mr Mohamed Bahlali²

¹Paris School Of Economics, Université Paris 1 Panthéon-Sorbonne, Sciences Po Paris , Paris, France,

²Aix-Marseille School of Economics, Marseille, France

G19-O6 Urban, Regional and Local Policy Evaluation, G3, August 29, 2025, 2:00 PM - 4:00 PM

Urban air pollution poses multifaceted challenges with substantial health, economic and social repercussions. Although previous research has examined its impacts, the impacts of air pollution and air quality policies on urban spatial structure remains an understudied area, requiring an integrated approach. This paper advances understanding by integrating realistic atmospheric dispersion into a novel and unified urban equilibrium model of location and travel mode choices, incorporating the interdependence of location choices, economic activities, commuting patterns, and pollution. The distribution of pollution emissions, represented by residential areas, firms and the commuting flows between them, is determined endogenously in the model, affecting in turn the attractiveness of certain areas and resulting in heterogeneous pollution exposure.

Using several sources of microdata and transportation surveys, we calibrate this model to assess the impact on air quality and spatial structure of the Grand Paris Low Emission Zone (LEZ), a policy restricting highly polluting vehicles in the strongly monocentric metropolitan area. The results highlight that the LEZ significantly reduces the average exposure to NO_x pollution but also reveal the potential of the LEZs to induce relocation patterns, influencing pollution emissions and exposure differentially between geographic areas. The population density increases in the LEZ area and particularly within Paris, due to higher commuting disutility and lower ambient pollution. However, employment follows the opposite trend though the magnitude of the variations are much smaller. The welfare analysis reveals a 13\% aggregate welfare loss when accounting for relocation, contrasting with a 1\% welfare gain in a naive model accounting for travel mode switch but ignoring relocation responses. This underscores the importance of incorporating general equilibrium effects in policy evaluation. In addition, the analysis shows that policies that aim to reduce air pollution levels in highly polluted areas can have positive and negative spillover effects on neighboring areas. Finally, counterfactual exercises suggest that complementary transport policies, such as fare adjustments and infrastructure expansion, could mitigate the economic costs induced by the LEZ.

Measuring Tourism Pressure on Italian Destinations: A Vulnerability Analysis at Provincial Level

Dr. Alessandro Buongiorno¹, Prof. Angela Stefania Bergantino¹, Prof. Mario Intini¹

¹University Of Bari "Aldo Moro", Bari, Italy

S89-S2 Empirical Evidence and Policies for Sustainable and Resilient Cities and Territories, G4, August 29, 2025, 2:00 PM - 4:00 PM

Over the past 30 years, international arrivals have more than tripled, reaching 1.5 billion tourists. The growth in tourism has been steady over time, despite adverse events that only temporarily reduced the number of travellers. After the Covid-19 pandemic crisis, international demand has demonstrated extraordinary resilience, fully recovering 2019 levels globally by 2024. Considering this significant increase in tourism demand, more and more destinations are experiencing congestion, often exacerbated by the media, which highlights the frustration expressed by residents due to the unregulated, uncontrolled growth of tourism. Commonly used metrics to monitor tourism pressure on destinations fail to anticipate discontent because they have numerous limitations and often are inadequate for accurately estimating the phenomenon. These shortcomings are particularly evident when it comes to addressing the widespread issue of excessive tourist concentration, both temporally (seasonality) and spatially (a few popular sites within much larger territories).

This study highlights the main limitations of commonly adopted indicators for monitoring tourist flows and presents a methodology that addresses the issue of tourist concentration using a more comprehensive approach to evaluate the phenomenon. We developed a new synthetic indicator that combines aspects related to the volume of tourist flows (pressure) with their temporal dynamics, simultaneously considering, for the first time, the degree of concentration of tourist flows. Concentration often emerges as the primary cause of the negative impacts of tourism on local territories and services, as well as the discomfort experienced by the local population, beyond the mere number of visitors.

This methodology was tested in a wide and diverse territorial context, namely the 107 Italian provinces, through an empirical analysis involving extensive data collection and analysis at the provincial and municipal levels across the country. The results of the analysis demonstrate that this methodology can be highly effective in monitoring the vulnerability of tourist destinations exposed to excessive tourism pressure. It goes beyond generic assessments of tourist volume, typical of mass tourism, by delving into other critical aspects, such as demographic dynamics linked to the tourism economy and demand concentration phenomena.

The informative value of the indicator, which can be easily applied to various territories, provides precise policy guidance for administrators, industry professionals, scholars, and local social actors interested in fostering harmonious and balanced tourism development. It supports a governance and regulatory approach in a sector that still holds considerable potential for economic and social diversification and development.

Looking for trust in all the wrong places: Territorial predictors of trust in local authorities during a crisis

Dr. Bogdan-Constantin Ibanescu¹, Dr. Alexandra Gheorghiu¹, Dr. Mioara Cristea

¹Alexandru Ioan Cuza University/Centre for European Studies, Iasi, Romania

G13-O2 Social Capital, Territorial Capital, Institutions and The Commons, F5, August 27, 2025, 2:00 PM
- 4:00 PM

Trust can be a powerful predictor of human behaviour in modern societies, as represents the glue that maintains long-term and beneficial social relationships between both individuals and groups. Trust in national and local authorities can differ based on several factors, such as the level of proximity between citizens and authorities, the scope of responsibilities of the authorities, and the complexity of issues they deal with. Research suggests that people tend to have higher levels of trust in local institutions compared to national institutions. For example, a study conducted in the US (Pew Research Center, 2020) found that 68% of Americans had a favourable view of local government, while only 31% had a favourable view of the federal government.

While local and regional authorities in many European countries were given more responsibilities, our understanding of the factors that shape citizens' support for these levels of government remains limited. As such, we were interested in examining the level of trust in local institutions in a representative sample of Romanian citizens and its potential historical, social, political, and economic predictors. We also focused on the territorial characteristics (rural versus urban, economic prowess, responsibilities of various territorial policymakers) that may explain the variations in trust.

Our sample included 1205 Romanian respondents (45.4% rural, 51.7% women, Mage = 48.35, SD = 16.22). Participants filled in a Computer Assisted Telephone Interviewing (CATI) questionnaire. We measured overall trust in local institutions, perceived level of assistance during crises, satisfaction with local institutions, drivers of trust, and respect for rights and freedoms.

Our results indicated that trust in local institutions varied depending on factors, such as the geographical regions with trust being the lowest in the Bucharest-Ilfov region - the most developed economic region - compared to all other regions in Romania). Furthermore, the best predictors for trust are linked to satisfaction with local institutions' decisions and the assistance provided during crises, e.g. sanitary crises such as Covid-19.

Navigating the Wickedness of Urban Megaprojects: Social Vulnerability and Planning Complexity of New Metro Stations in Athens

Prof. Dr. Phil Pantoleon Skayannis², Ms Ersi (Varsami) Zafeiriou¹

¹Dresden Leibniz Graduate School (dlgs), Leibniz Institute For Ecological Urban And Regional Development (ioer), Dresden, Germany, ²Department of Planning and Regional Development, University of Thessaly, Greece, Volos, Thessaly, Greece

G13-O3 Social Capital, Territorial Capital, Institutions and The Commons, G4, August 29, 2025, 9:00 AM - 10:30 AM

Planning of megaprojects is an inherently wicked problem not only because planning per se is 'inherently wicked' (Rittel & Webber, 1973) but also because their magnitude amplifies their wickedness. Equally so, they are complex. These projects tend to exhibit unpredictable behaviour, undergo qualitative transformations, face emergent issues, struggle with unclear solutions, and be entangled in an interaction of independent factors that create uncertainty and risk.

The obviously correlated social vulnerability, driven by contextual and intersectional factors (diverse identities and needs), amplifies the complexity and wickedness of megaproject planning even further. This paper elucidates the intricate dynamics of megaproject planning and social vulnerability drivers, using the new metro stations in Exarcheia and Evangelismos, Athens, as case studies.

A mixed-methods approach uses an interpretive paradigm to examine how social vulnerability drivers contribute to the complexity and wickedness of megaproject planning and decision-making processes. Quantitative data are first used to set the terrain of social vulnerability in the Athenian context.

Qualitative data are collected through stakeholder interviews, narrative analysis, and field observations to capture nuances. Discourse analysis of media articles, government documents, public statements, and community publications is conducted to understand the narratives, power dynamics, and underlying assumptions shaping stakeholders' perspectives. Thematic analysis organizes data around key themes related to wicked problem attributes and social vulnerability drivers. This methodological triangulation provides different perspectives on the planning challenges, ensuring a comprehensive and nuanced understanding of the complexities involved.

The development journey of the two stations reveals how social and climatic changes, political shifts, and cultural and class differences in urban conflicts act as fundamental drivers, reinforced by existing institutional and social systems, and lead to risky decisions. Specific factors contributing to social vulnerability in the two districts include the sensitive social balance between the civil society stakeholders and administrative authorities. The ad hoc drastic solution in Exarcheia involves the eviction of traditional users of the Square. At the same time, the opponents' narrative in Evangelismos focuses on defending the greenery in which they have invested.

This study explores the complexity and inherent wickedness of planning urban megaprojects by examining social vulnerability factors that exacerbate planning challenges. It concludes with lessons learned from case studies to inform future planning efforts and promote more resilient and equitable urban development.

The City Productivity and Mobility Implications of the Work-From-Home Revolution

Dr Hadi Arbabi¹, Professor Steven Bond-Smith², Dr Ming-Wei Hsu³, Prof. Philip McCann⁴

¹University of Sheffield, Sheffield, United Kingdom, ²University of Hawaii, Manoa, USA, ³University of Manchester, Manchester, UK, ⁴University of Manchester, Manchester, UK

G05-O5 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 28, 2025, 4:30 PM - 6:30 PM

The aim of this paper is to understand the likely productivity-related, sustainability and utility-related features of the work-from-home (WFH) revolution on the evolving UK urban and regional economic system in the post-Covid environment. In particular, we examine the role played by post-covid-19-lockdown changes in transportation and commuting behaviour in shaping this evolution. The lockdown immediately ushered in a fundamental change in working patterns, whereby workers switched to the widespread use of online remote-working technologies, which allowed for major reductions in in-person face-to-face workplace interactions and increases in hybrid or total remote working practices. In order to understand the likely further evolution of the productivity-related and sustainability-related features of the UK urban and regional economic system, we propose to frame our empirical analysis on the basis of models that capture exactly these nuances, and then to use the theoretical framings to interpret the empirical findings. The two analytical frameworks we employ are the Bettencourt (2013) urban scaling framework and the hybrid work-from-home model framework of Bond-Smith and McCann (2022). We employ fine-grained data from both the census and also the UK travel surveys, combined with the newly available small area gross value-added data through the ONS in order to empirically frame our theoretical models. This will allow us to identify the currently key drivers of local productivity and to understand how they are related to new forms of hybrid WFH patterns.

Sustainable mobility and small villages: the case of Cilento area (Southern Italy)

Ms Barbara Trincone, Mr Fabio Carlucci

¹University of Salerno, Salerno, Italy

S90-S2 Transport Policies Shaping Sustainable Cities and Territories, Amphitheater II - SAKIS
KARAGIORGAS, August 29, 2025, 11:00 AM - 1:00 PM

The work aims to draw guidelines for national and regional public and private stakeholders to design policies and mechanisms for sustainable mobility. The pursuit of these objectives envisages an integrated policy and system approach, both of instruments (strategies, plans and programmes) and of actors (planners, private actors, youth network, civil society). The methodological approach envisages an observation of the sustainable mobility mechanisms of case studies of the Campania region's territory in southern Italy in order to then define guidelines that can have a general impact; starting from the particular in order to favour the general with an approach similar to that of laboratory experimentation. The observation and analysis will start from territorial case studies of intermediate and peripheral areas south of Salerno and in particular in the Cilento area. The analysis of existing spatial planning at different levels, including those related to mobility (Sustainable Urban Mobility Plans; Regional Strategies for Sustainable Development; National Strategy for Inner Areas; National Strategy for Sustainable Development and related sets of indicators; slow mobility paths of walking and/or cycling routes; school mobility commuting to work, mobility of the elderly and differently abled) will aim to provide the essential elements for verifying their strengths and weaknesses and to direct policy makers to favour the involvement of young people and civil society in the process of defining needs and related resolutions for the implementation of sustainable mobility, at different levels and territorial dimensions.

Border Regions in the European Space of Flows

Prof. Tomasz Komornicki¹, Prof. Rafał Wiśniewski¹, Prof Piotr Rosik¹, Dr Marcin Mazur¹, Patryk Duma¹

¹Institute of Geography and Spatial Organization, Polish Academy of Sciences, Warszawa, Poland

S47-S1 All Eyes on Border Regions: Enhancing Cross-Border Cooperation through Data-Driven Policy Support, Amphitheater I - SAKIS KARAGIORGAS, August 28, 2025, 9:00 AM - 10:30 AM

Between 2020 and 2022, the ESPON IRiE project (Interregional Relations in Europe; www.espon.eu; Velasco Echeverria 2022) aimed to comprehensively assess the European space of flows. This project, likely for the first time, simultaneously analyzed several types of interregional connections of various natures. The study covered capital investments, foreign trade, migration, tourism, knowledge transfers, student exchanges, and transport flows. For each type of relationship, a 297x297 matrix was created, corresponding to the number of NUTS2 regions (each roughly the size of Polish voivodeships) across the European Union, including the United Kingdom, Switzerland, Norway, Iceland, and Liechtenstein. Where possible, observed data were used, and where data were unavailable, modeling was applied. Given this data, the position of border areas requires a new perspective, providing new grounds for their delimitation. It becomes possible to compare the intensity of cross-border relations with other international relations. The aim of this study is to highlight the importance of cross-border relations both at the European and local levels (with Poland as a case study). This study extracts relationships between neighboring regions across political borders from matrices of people flows (migration, tourism, ERASMUS). It evaluates their weighted intensity, concentration, and dynamics (2010–2018) compared to the full European matrix, internal relations in selected EU states, and sub-matrices of neighboring countries. The research tests hypotheses that border regions exhibit: a) higher and growing intensity of flows; and b) higher geographical concentration of flows. Findings will identify functional border regions through spatial mobility and economic cross-border interactions.

Polycentric development and Multi-Criteria Methods Analysis for regional competitiveness in Greek remote areas. A comparative analysis.

Ms Evina Sofianou¹, Professor Georgios Aretoulis¹

¹Aristotle University of Thessaloniki, Thessaloniki, Greece

G02-O6 Regional Growth Models, Competitiveness, and Convergence, B1, August 29, 2025, 11:00 AM
- 1:00 PM

Contemporary spatial planning objectives adhere to the idea that polycentric spatial patterns based on even distribution of population, economic and social performances are more sustainable than monocentric forms. The concept of polycentricity is a pivotal point for academic research and spatial policy literature during the last decades. Polycentricity is a multi-scalar notion indicating interrelations among spatial configurations with their neighboring territories creating polycentric networks. In this aspect, there is a positive correlation between polycentric structures and competitiveness, as areas within a network are encouraged to interact in a synergetic way. On the whole, rural areas and small and medium-sized urban centres could benefit from positive spillover effects stimulating sustainable regional performance and reducing regional disparities. Architectural assets are seen as a living part of cultural heritage and a main indicator of integration in polycentric networks.

The present paper attempts to provide new insights for refining the spatial development of urban and rural areas of Northern Greece towards sustainable regional development. The focus is on a Greek remote region, the Region of Eastern Macedonia and Thrace with strong spatial inequalities but also, numerous prospects of territorial, social and economic cohesion. This study investigates the challenges of creating polycentric networks within the study area, with appointed architectural landmarks in urban and rural agglomerations being the potential network nodes. The research goal is threefold: i) to compile and assemble all qualitative and quantitative polycentricity indicators (namely, size and location of the urban and rural areas examined, transportation infrastructure and connectivity), ii) to evaluate the nodes' competitiveness and iii) to highlight new polycentric networks. Due to the multidimensionality of polycentricity and competitiveness assessment, Multi-Criteria Decision Analysis (MCDA) is applied as the proposed methodology, in order to examine competing multiple criteria and choose alternatives, in this case network nodes, with advantages or disadvantages, to enhance various polycentric networks covering the study areas extents. The paper's ultimate goal is to present a comparative analysis of selected MCDA techniques to provide with a more holistic approach in relation to the objectives set. Research on polycentric development of urban and rural areas with regard to MCDA methods remains quite limited thus, the proposed methodology is expected to contribute to the field of regional competitiveness and territorial cohesion.

Transforming Romanian post-socialist cities by proxilience: a novel proximity-resilience framework in planning more liveable metropolitan areas

Dr. Alexandru Banica^{1,2}, Dr. Karima Kourtiti^{1,3}, Mr. Manuel Foşalău¹, Mr. Oliver Dinter¹

¹Alexandru Ioan Cuza University, Iasi, Romania, ²Romanian Academy, Iaşi Branch, Iasi, Romania,

³Open University, Heerlen, The Netherlands

S72 From Responding to Adapting and Transforming EU Cities, D12, August 27, 2025, 11:00 AM - 1:00 PM

This study introduces a vulnerability-opportunity model to assess the sustainability of 15-minute cities (15-minC) perspective in post-socialist cities, focusing on urban resilience, proximity, and inclusive growth. Moreover, this research extends the 15-minC model by introducing a proximity index (integrating access to essential services weighted by considering the hierarchy of needs) and proxilience - a composite index of access to services, mobility, and resilience indicators. Proxilience also fosters resource-sharing partnerships between urban and rural areas, allowing for the sustainable management of shared resources. Considering all Romanian cities with more than 100,000 inhabitants but developing an extensive case study on Iaşi City, this research uses advanced spatial and geostatistical methods, including GIS for gravitational modelling, machine learning clustering, and network analysis, to examine the distribution and accessibility of services. At the microscale, we will create spatial accessibility models to understand and optimise urban accessibility by leveraging multiple data sources—such as the Global Human Settlement Database (GHSL) for population density and built area data, Copernicus Sentinel images for environmental quality, and web-scraped data on urban services. Additionally, at the commune level, we use geospatial regression analysis to evaluate social, economic and environmental factors (e.g., income, dependency rate, migratory rate, air pollution index etc.) in relation to access to services, enabling a nuanced understanding of the sustainability of the 15-minC concept in Romanian cities. The research outcomes emphasise that consequences can prioritise facilities that address different human needs. In rural areas, some higher needs might be lacking. Therefore, it is important to assess not just the physical existence but also the quality of these facilities—the satisfaction of clients is included in the 15-minC model. Moreover, agglomeration, traffic, and pollution create discomfort even when services are available, while in the rural peripheries, there are lower densities and a lack of services. The optimal areas are less dense neighbourhoods with diverse services and a cleaner environment. Meanwhile, creating new centralities based on proximity service and possibilities for active mobility in these areas could improve their sustainability and resilience. The proxilience index, on the other hand, shows that accessibility does not always bring resilience; some more isolated areas can also show resiliency, and, on the contrary, the most agglomerated places can be highly vulnerable. However, in most cases, accessibility and resilience converge, especially in areas where the population pressure on services is under a certain threshold.

Culture and Social Cohesion in Trenčín 2026: A Preliminary Study for the European Capital of Culture

Ms Dana Kubenkova¹

¹Creative Institute Trencin, Bratislava, Slovakia

G19-O5 Urban, Regional and Local Policy Evaluation, G3, August 29, 2025, 11:00 AM - 1:00 PM

The European Capital of Culture (ECoC) initiative was established to celebrate cultural diversity, strengthen European identity, and foster social and economic transformation. Beyond its artistic and creative programming, it serves as a platform for examining how culture can influence social cohesion, particularly in regions facing economic or social challenges. Trenčín in Slovakia, designated as the European Capital of Culture for 2026, offers a unique opportunity to assess whether cultural initiatives can strengthen social ties, promote understanding, and mitigate social fragmentation. At a time of increasing social and economic uncertainty, this research examines whether cultural engagement can serve as a counterforce to polarization and social fragmentation. It aims to determine whether Trenčín 2026 can create lasting social impact and serve as an example of how culture can strengthen communities. This preliminary research explores the role of cultural engagement in fostering social cohesion and resilience in Trenčín. A major challenge in this analysis is the absence of recent data on social cohesion, making it difficult to assess long-term trends or the impact of cultural policies. This study seeks to fill that gap by providing empirical evidence on the relationship between culture and social cohesion. As part of the monitoring and evaluation of Trenčín 2026, a pilot data collection was conducted in 2024, gathering responses from 600 residents. This preliminary study forms the basis of a longitudinal research framework that will track changes over time, assessing whether cultural participation influences key social cohesion indicators such as interpersonal trust, community involvement, and cross-group interactions. The findings will contribute to both academic discussions and policy development, providing insights for future European Capital of Culture evaluations and cultural policy strategies. By positioning Trenčín 2026 as a case study, this research might contribute to the broader understanding of culture as a tool for long-term social transformation.

Knowledge Integration Patterns in AI: A Firm-level Taxonomy and Performance Implications

Mr Alexander Kopka¹, Dr. Johannes Dahlke², Dr. Nils Grashof³

¹Thünen Institute Of Rural Economics, Braunschweig, Germany, ²HBE/BMS-ETM, University of Twente, Twente, Netherlands, ³Department of Economics, Friedrich Schiller University Jena, Jena, Germany

G03-O3 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 27, 2025, 4:30 PM - 6:30 PM

As a general-purpose technology, artificial intelligence (AI) offers multiple pathways for value creation and capture. The economic impact of AI varies substantially depending on how firms choose to implement it: while using AI primarily for process automation may yield efficiency gains, deploying AI to enhance innovation capabilities appears to enable higher productivity growth through continuous technological improvements.

This knowledge, however, is not uniformly distributed. The AI industry exhibits distinct patterns of knowledge creation and diffusion across different types of organizations: basic research producers, industrial intermediaries, and end-users.

This study investigates how the combination of basic and applied AI knowledge affects firm performance, with particular attention to the role of inter-firm networks in knowledge acquisition and exploitation. Our research addresses three sequential questions:

- (a) What distinct patterns emerge in how firms combine basic research, applied technological developments, and practical AI implementation capabilities?
- (b) How do these different knowledge combinations impact firm economic outcomes, particularly productivity?
- (c) To what extent can firms compensate for limitations in their internal AI knowledge base through external collaborations?

The empirical strategy leverages a unique dataset combining publication data (capturing basic research), patent statistics (representing applied research), and web-based indicators (measuring AI implementation) at the firm-level. Publication data is provided by the SCOPUS database, where based on a keyword search string, AI-related publications were identified. To assess patent statistics, PATSTAT is used. AI patents are identified through a classification as well as keyword approach using both CPCs and IPCs and patent titles and abstracts. The web-based indicators are based on the website text of companies and also assess the proficiency of their AI knowledge by not only doing a simple keyword search but also to include the embeddedness of these keywords in the text.

In addition to firms internal knowledge and capabilities base, we also take a relational perspective and consider the external collaborations of firms, distinguishing between networks relating to knowledge on AI applications and on AI implementation.

In general, the aim of this study is to estimate how membership in different taxonomical categories affects productivity and whether external collaborations can compensate for limitations in internal knowledge. This research therefore contributes to innovation economics by establishing a novel taxonomy of how firms combine different types of AI knowledge, revealing whether certain knowledge integration patterns lead to different economic outcomes, and assessing how these patterns relate to firm network positions.

The Local Quality of Government Dataset: Insight from Municipal Units in Europe, 2015-2025

Dr. Yuliya Rodionova, Dr. Aksel Sundström¹, Natalia Alvarado Pachon, Rafael Lopez, Cem Mert Dalli, Victor Saidi Phiri

¹Gothenburg University, Gothenburg, Sweden

G21-O3 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 28, 2025,
4:30 PM - 6:30 PM

This article presents the Local Quality of Government Dataset. We contribute both conceptually – by developing previous approaches to mapping how geographies of local units evolve – and empirically, by displaying how fine-grained indicators map on to these units. First, we carefully trace and document how the borders of all municipal units in Europe changed over the years 2015-2025. This allows us, for the first time, to create a data-structure for fine-grained statistics that meet the pressing need for nuanced subnational measures. Second, we demonstrate how we can map several forms of data on to this structure. We illustrate this through three types of data: (a) geo-coded data from several sources, (b) official statistics on election outcomes and (c) data on corruption risks, as gauged through harmonized figures on public procurement. We will release our dataset to the public through an online portal free of charge. In sum, we show how this dataset will advance the opportunities for those wishing to capture subnational phenomena in Europe over the past decade.

The Impact of Natural Disasters on Migration in European Regions

Mr Nikitas Provatakis¹

¹Panteion University, Athens, Greece

G09-O4 Migration, Mobility Patterns and Impacts Across Space, A4, August 29, 2025, 2:00 PM - 4:00 PM

In recent years European countries and regions have faced an increased frequency and intensity of natural disasters. Previous research has explored and quantified the effect of natural disasters on labor market outcomes and on key socioeconomic variables, including the outflow of migrants. In this paper, we attempt to estimate the direct effect of natural disasters on the rates of migration of European countries and regions and confirm the existence of channels that indirectly mediate this effect. we introduce channels that have not received the appropriate attention in migration literature, particularly the real estate and sectoral composition channels. The results suggest that there is a positive link between natural disasters and outward migration. The robustness of this finding is confirmed with the inclusion of different measures of natural disasters, namely frequency and intensity. With regards to the proposed channels that mediate the effect on migration, we provide supportive evidence that housing and the sectoral composition act as intensifying factors.

Exploring the changing structure of regional Erasmus+ student mobility in Europe

Dr. Tuomas Väisänen¹, Dr. Milad Malekzadeh¹, MSc. Oula Inkeröinen¹, BSc. Maija Havusela¹, Dr. Olle Järv¹

¹University Of Helsinki, Helsinki, Finland

S16 Changing Patterns Of Spatial Mobility During The Twin Transition, A1, August 27, 2025, 4:30 PM - 6:30 PM

Student mobility is a distinct form of human movement. It can indicate the characteristics and attractiveness of regions, which is relevant for governance, policy, and planning. In Europe, the Erasmus+ programme has facilitated the mobility of over 16 million students since its inception, and is a key instrument in supporting academic exchange of ideas in Europe and also in building a shared European identity for its participants. While Covid-19 impacted Erasmus+ mobility, drastically reducing the number of mobile students, whether the pandemic changed the regional structure of the Erasmus+ student mobility network and which regional characteristics play a key role in attracting students remain underexplored.

In this presentation, we present our analysis of how Covid-19 affected regional student mobility within Europe using the spatially enriched Erasmus+ student mobility data, containing the regional mobility of over 2 million individuals between 2014 and 2022. We analyse the differences between the years statistically and found interesting patterns in the regional characteristics which were associated with gaining and losing exchange students after Covid-19. Our preliminary results show how mobility is recovering to pre-pandemic levels, changes have occurred in the hierarchy of sending and receiving countries. Furthermore, our findings suggest some general patterns in terms of regional characteristics hold, such as how higher GDP, life expectancy, urbanization rate, and warmer climate tend to attract more students overall, whereas lower employment rate and higher median age tend to push students to have exchanges. Our findings have implications for regional planning for regions that want to increase their share of incoming and outgoing students.

Creative Clusters as accelerators: unpacking their role in sustaining cultural entrepreneurship

Professor Thomas Paris¹, Ms Chahira Mehouchi², M. Tristan GUYON³

¹Ecole Polytechnique, , France, ²HEC Paris, , France, ³Ecole Polytechnique, , France

S25 Video Game Industry and Regional Development, G6, August 27, 2025, 2:00 PM - 4:00 PM

This research examines how creative clusters function as vital ecosystems for cultural entrepreneurship in the video games industry, using Angoulême, France as a case study. Creative clusters provide cultural entrepreneurs with crucial resources, networks, and collaborative opportunities that enhance their sustainability and innovation potential.

The video games industry represents a valuable research context due to its distinctive characteristics: rapid technological evolution, hybrid skillset requirements, project-based production structures, and tension between global markets and local cultural specificity. These features illuminate broader patterns in cultural entrepreneurship.

Our longitudinal study of Angoulême reveals a distinctive ecosystem characterized by homogeneity in studio structure coupled with heterogeneity in creative industry involvement. Unlike larger counterparts, Angoulême has developed deeper inter-organizational cooperation among similarly sized studios while benefiting from cross-pollination with adjacent sectors like comics and animation. This environment has fostered unique collaborative behaviors, including co-production projects and resource-sharing practices that enhance collective resilience.

Several factors have catalyzed Angoulême's collaborative ecosystem: accessible workspace, geographical proximity, lower living costs, institutional support through ENJMIN (National School of Games and Interactive Digital Media), and knowledge spillovers from co-located creative industries. Digital platforms have streamlined coordination while reinforcing trust across the cluster.

Despite these strengths, the cluster faces significant challenges: regional reorganization complexities, vulnerability to leadership transitions, and reductions in public subsidies. Through mixed-method research combining institutional history analysis and stakeholder interviews, this study advances understanding of how creative clusters effectively support cultural entrepreneurship while enhancing broader economic and social development in the evolving digital creative economy.

Innovation Policy Approaches for Circular Bioeconomy in Austria and Vienna: The Role of Intermediaries in the Transition Process.

Mr Marcus Jandt¹, Mag. Mag. Dr. Gudrun Haindlmaier

¹Austrian Institute Of Technology (AIT), Vienna, Austria

S01-S2 The Spatial, Regional and Urban Dimensions of Circular Economy, Amphitheater II - SAKIS

KARAGIORGAS, August 27, 2025, 2:00 PM - 4:00 PM

Cities can be considered as central to the transition to a circular bioeconomy. They pose a major problem as they act as aggregators of organic biomaterial, hubs of unsustainable economic activities and consumption, making them significant contributor to contemporary challenges. Simultaneously, cities offer major opportunities for realizing the circular bioeconomy due to their and physical infrastructure, function as a knowledge hub, consumption power, abundance of economic activities and influential actors. Thus, investigating cities provides valuable insights into multi-actor governance processes and the interconnectedness of geographical scales in transitions. This is particularly relevant for the circular bioeconomy, where the flow of biological resources, innovation and knowledge through collaborative networks links urban centres with their surrounding and rural areas.

Intermediaries are recently recognized to play a pivotal role in this landscape, as they operate across governance levels, facilitating knowledge transfer, operationalize policy, facilitate coordination as well as network-building through their engagement with various stakeholders (Hodson and Marvin, 2010). To understand the multi-scalar interactions across governance levels in the circular bioeconomy transition, this study adopts a dual approach that integrates the geography of transitions perspective (Hansen and Coenen, 2015).

First, the study explores innovation policy approaches at both the national (Austria) and city (Vienna) levels, analysing how the bioeconomy concept is embedded within these policy frameworks. Given that policies at different governance levels pursue distinct agendas and priorities, this study pays particular attention to how city-level innovation policies diverge from national approaches.

Second, the study examines the role of Vienna-based intermediaries in transition, taking into account multi-scalar networks across levels of governance.

Accordingly, the study addresses the following research questions:

1. How do national and city-level policies promote the implementation of the (circular) bioeconomy concept from an innovation policy perspective?
 2. How do intermediaries based in the city of Vienna discern their role in the transition process and what capabilities do they approach to actively shape this process towards a circular bioeconomy?
- This paper adopts a mixed-method qualitative approach, integrating inductive and deductive policy document analysis to systematically examine the policy agenda and innovation processes shaping applied innovation policy approaches as well as semi-structured expert interviews to explore the role of intermediaries in the transition process.

Night and day difference: a comparison of day- and night-time satellite images as predictors of regional economic prosperity

Mr Michał Künstler¹

¹University Of Warsaw, Warsaw, Poland

G25-O1 Enriching Research and Policy Methods in Regional Science: Digital Tools, Artificial Intelligence, Participatory Methods, Mapping Techniques, Stakeholder Involvement, Amph 3, August 27, 2025, 11:00 AM - 1:00 PM

Satellite imagery has become a valuable tool for estimating regional economic prosperity, with nighttime light intensity (NTL) and daytime satellite images being two widely used data sources. This study compares the predictive performance of machine learning models trained on NTL and daytime imagery for estimating economic well-being at different regional levels. Using data from European countries at LAU2, LAU1, NUTS3, and NUTS2 levels, we construct separate models for each data type and an ensemble model that integrates both sources to assess the potential performance gains.

Advanced machine learning techniques are employed, including XGBoost and convolutional neural networks (CNNs), to develop predictive models for economic indicators. The models are evaluated using standard performance metrics and further analyzed with explainable AI (XAI) techniques to interpret the contribution of different features in economic prediction. XAI methods help uncover the relative importance of nighttime lights and daytime image-based features, providing insights into their complementarity.

The findings contribute to the ongoing discussion on the effectiveness of remote sensing data for economic modeling. By comparing models based on individual data sources and their fusion, we determine the extent to which combining NTL and daytime imagery enhances predictive accuracy. The study also explores the scalability of these approaches across different spatial resolutions, offering valuable insights for policymakers and researchers interested in regional economic assessments. The results have practical implications for using satellite-based machine learning models in economic forecasting, especially in regions where traditional economic data collection is limited or delayed.

Economic complexity of Italian provinces: The role of relational, institutional and cognitive proximity

Prof. Dario D'Ingiullo¹, Prof. Adriana Pinate², Prof. Davide Quaglione¹

¹University "G. d'Annunzio" of Chieti-Pescara, Pescara, Italy, ²Gran Sasso Science Institute, L'Aquila, Italy

G13-O2 Social Capital, Territorial Capital, Institutions and The Commons, F5, August 27, 2025, 2:00 PM
- 4:00 PM

The paradigm of economic complexity, focusing on the role of tacit knowledge ("knowhow" or "productive capabilities") in the development of products and services, states that more complex or sophisticated product basket requires the accumulation of a large variety of non-tradable productive capabilities, implying a faster and lasting economic growth. Yet, on the determinant side, research that look at the drivers of production sophistication is scant and the gaps in existing research require a deeper understanding of the mechanisms that promote the creation of new knowledge, its circulation and accumulation. To this end, recent theoretical and empirical reflections on the concepts of relation, institutional, and cognitive proximity can be crucial to explaining the elements at the basis of knowledge exchange. Relational proximity enhancing interactions among economic actors through social and cultural homogeneity, facilitates collective learning processes and knowledge diffusion. Institutional proximity, defined by norms, regulations, and social conventions, fosters cooperative behavior, enables interactive learning processes, and reduces transaction costs, particularly in contract-intensive industries. Cognitive proximity ensures mutual understanding of technological aspects, facilitating interactive learning and innovation, particularly in sectors with shared or complementary capabilities. In this context, the present study contributes to the literature on the determinants of economic development and productivity by empirically analyzing the effects of different forms of proximity—relational, institutional, and cognitive—on the economic complexity of Italian provinces (NUTS-3 level) between 2008 and 2019.

To conduct the analysis, we employ a unique dataset combining regional export data (ISTAT's Coeweb) to elaborate a provincial Economic Complexity Index (ECI); a widely accepted measure to identify the degree of sophistication of regional economy as it captures the knowledge- and skill-intensity of goods and services locally produced. Concerning the forms of proximity, we employ the Institutional Quality Index (IQI) and its components (rule of law, regulatory quality, government effectiveness, voice and accountability, corruption), and sectoral relatedness of manufacturing industries and services activities.

Preliminary findings reveal that better formal and informal institutions, playing a key role in lowering transaction costs and uncertainty, and by favouring knowledge circulation, lead to diversified and sophisticated production that fuels economic complexity. Furthermore, the study highlights the importance of relatedness and its interactions and complementarities with institutions that seem to support complex and innovative productions through knowledge spillovers and related diversification.

Purpose Under Pressure: The Benefits and Risks of Meaningful Work

Mr Fabio Angei¹, Ms Silvia Balia¹, Mr Rinaldo Brau¹, Mr Giovanni Sulis¹

¹University of Cagliari and CreNos, Cagliari, Italy

S38-S2 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 27, 2025, 2:00 PM - 4:00 PM

Demand for meaningful work has intensified in recent years, especially in the wake of COVID-19's labor market disruptions. Yet, even as workers increasingly seek jobs that provide purpose and improve job satisfaction meaningful jobs appear to be growing scarcer. Moreover, the pursuit of meaning may entail important trade-offs: if meaning is not an inherent job attribute but must be earned continuously through effort (more working hours), workers could face heavier workloads and diminished leisure time. How workers balance these trade-offs, and why some are more inclined to pursue meaning-intensive roles than others, remains only partly understood.

This paper investigates three job-meaning attributes: autonomy (control over tasks), competence (skill utilization), and relatedness (supportive interpersonal connections) and how they shape the perceived benefits and risks of meaningful work. Using a novel survey of 3,510 Italian employees, we adopt a hypothetical scenario methodology in which respondents evaluate eight different "job profiles." In each job scenario, one or more job meaning dimensions vary between "low" and "high", allowing us to measure beliefs about how each of these meaning dimension influences job satisfaction (the benefit) and work-life tensions in terms of reduced private and family time (the risk).

Our findings indicate that, on average, workers believe that autonomy, competence, and relatedness contribute significantly to job satisfaction (benefit). Although higher autonomy and relatedness correlate with lower perceived work-life time conflicts (risk), competence emerges as a potential source of greater work-life time tensions, having a positive impact on risks. We document that heterogeneities in the perceived benefits and risks across respondents are driven by education, gender, and regional contexts.

We then compare the elicited subjective beliefs to actual outcomes, constructing indices for autonomy, competence, and relatedness based on detailed survey questions about respondents' actual jobs. The results show that workers' beliefs serve as strong predictors of real-world patterns. Higher autonomy in one's actual job correlates with greater stated job satisfaction and lower job-search activity. Competence, while boosting satisfaction, also aligns with increased risks such as more working hours, mirroring the perceived trade-offs highlighted in the hypothetical scenarios. Our results underscore that meaningful work, although beneficial, can also carry hidden costs. Second, our study contributes to the literature that integrates subjective beliefs and expectations with observed outcomes, revealing how workers' perceptions of job meaning have tangible consequences for both time allocation and overall well-being.

Resilience and sustainability of the tourism industry: a survey of the existing indicators and an empirical research agenda

Dr. Giulio Pedrini¹, Prof Giovanni Bonaccolto, Prof Fabio Aiello, Prof Raffaele Scuderi, Prof Vincenzo Fasone, Prof Marina Bonaccolto-Toepfer, Prof Vincenzo Marinello

¹Kore University of Enna, Enna, Italia

G15-O6 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness, Quality of Life, B6, August 29, 2025, 2:00 PM - 4:00 PM

This paper provides an overview of the main indicators of sustainability and resilience that have been or can be applied to the tourism industry. The first section examines the indicators of sustainable tourism proposed by the main international organisations that have dealt with this issue. The second section carries out an analogous exercise with regard to the scientific literature, selecting those studies that have identified a wide range of indicators following a multidimensional approach. The third section provides an overview of the main resilience indicators that can be applied to the tourism industry on a spatial basis. The aim of the report is to support the creation of an original granular dataset of tourism indicators and the subsequent construction of a composite indicator to assess the resilience of tourism destinations. An empirical research agenda is then drawn up for future analysis aimed at assessing the resilience of tourism destinations and their competitiveness in times of crisis.

EMPOWER, a web platform based on smart technologies, to enhance user awareness of energy consumption and environmental quality inside buildings

Dr. Alessandro Lorenzo Palma¹, Dr. Luca La Notte, Ing. Biagio Di Pietra, Dr. Alessandra Gugliandolo, Dr. Laura Canale, Prof. Giorgio Ficco, Dr. Elisa Caracci, Prof. Nicola Rainisio, Prof. Marco Boffi

¹ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Santa Maria di Galeria (Rome), Italy

S34 Efficient Buildings and Industrial Processes: Driving the Energy Transition, E1, August 29, 2025,
9:00 AM - 10:30 AM

Buildings account for approximately 40% of total final energy consumption in the European Union (EU), and they are also responsible for about 36% of CO₂ emissions due to energy use. To improve efficiency, smart technologies provide valuable insights into energy usage and indoor environmental quality. Energy Performance of Buildings Directive (EPBD) IV emphasizes the importance of detailed energy performance data, while Energy Efficiency Directive (EED) introduces requirements for consumption measurement and minimum frequency of reporting to users. Although energy management platforms and end-user information systems are emerging in the market, an integrated approach to energy efficiency is still lacking. To address this gap, the web platform EMPOWER (Energy Monitoring Portal for Aware Users) was developed for condominiums with centralized heating systems, aiming to enhance user awareness of energy consumption and indoor environmental quality. EMPOWER provides access to data collected from smart devices and sensors, available via web and app, offering information on thermal and domestic hot water (DHW) consumption as well as indoor environmental parameters such as temperature, humidity, CO₂, and particulate matter (PM). Specifically, energy consumption is presented through simplified benchmarks and graphical representations to facilitate data comprehension. Preliminary results suggest that frequent access to EMPOWER could lead to reduced consumption, demonstrating its potential as a tool to encourage informed actions for energy efficiency.

Unveiling Mobility Patterns: Integrating GSM Data with Spatial Econometrics in Stockholm

Dr. Marina Toger¹, Dr. Umut Türk², Prof. John Östh³, Em. o.Univ.Professor Dr. Manfred M Fischer⁴

¹Uppsala University, Uppsala, Sweden, ²Abdullah Gül University, Kayseri, Türkiye, ³OsloMet

University, Oslo, Norway, ⁴WU Vienna University of Economics and Business, Vienna, Austria

S33 Spatial Microsimulation: Methodological Advances and Empirical Applications, E1, August 27,
2025, 2:00 PM - 4:00 PM

This study investigates integrating GSM-based mobility flow data from extended Call Detail Records (CDR) into spatial econometric modeling to analyze movement patterns in the Greater Stockholm area. Using data collected over five years (2019–2023, focusing on Thursdays in March), we construct origin-destination (OD) matrices at multiple spatial scales to assess mobility trends and their socioeconomic determinants.

Initial 1,000-meter grid-level modeling resulted in sparse OD matrices and socioeconomic covariates for five years, limiting analytical depth. To address this, dynamic covariates from the demographic statistical areas (DeSO) level were aggregated to the regional statistical areas (RegSO) level, ensuring alignment between mobility flows and key socioeconomic variables, such as employment rates. This aggregation also enabled the construction of spatial weight matrices based on geographic and socioeconomic connectivity, essential for spatial econometric analysis.

To evaluate the reliability of mobile phone-generated mobility data, we benchmarked it against official municipal-level statistics, demonstrating its potential for disaggregating highly aggregated datasets into finer spatial resolutions. Beyond methodological improvements, the study explores (i) the spatial structure and temporal stability of mobility flows and (ii) the relationship between mobility dynamics and socioeconomic factors. An initial exploratory analysis using Geographic Information Systems (GIS) provides descriptive insights into mobility structures, supporting the advancement of spatial econometric modeling techniques.

The findings highlight the value of integrating CDR-derived mobility data into spatial analysis, offering new opportunities for understanding urban movement patterns and their socioeconomic drivers.

Tracing the roots of innovation: the persistence and emergence of innovativeness in France since 1851: Application to green Entrepreneurship

Dr. Korneliusz Pylak¹, Prof. Jean Bonnet², Dr. Malia Kedjar³

¹Lublin University of Technology, Lublin, Poland, ²University of Caen Normandy, Caen, France,

³LARSH, University Polytechnic Hauts-de-France, Valenciennes, France

S21 To What Extent Can Territorial Contexts Influence the Strategic Behaviour of Entrepreneurial SMEs, and Vice Versa? Exploration Into the Triple Bottom Line, A5, August 28, 2025, 9:00 AM - 10:30 AM

This paper examines dual models of innovation in regional development by investigating the interplay between entrepreneurial culture and region-specific characteristics. Drawing on foundational theories from Hofstede (1980) and Baumol (1990), as well as recent empirical insights (e.g., Pylak & Sosnovskikh, 2024; Stuetzer et al., 2022), we differentiate between the historical persistence model and the emerging innovation model. The historical persistence model posits that regions endowed with a deep-rooted entrepreneurial culture—reinforced by sticky regional characteristics such as robust occupational structures, specialized industries, and infrastructural advantages—can sustain high-quality entrepreneurship over time. However, these same legacy factors can also engender path dependencies that inhibit the transmission of entrepreneurial spirit, particularly when social divisions, rigid hierarchies, or over-specialization in declining sectors prevail.

In contrast, the emerging innovation model focuses on regions that have reinvented themselves by capitalizing on new opportunities following external disruptions. For example, the oil crisis of 1973 acted as a catalyst in several regions, prompting a shift toward dynamic, opportunity-driven behaviors that foster innovation in underexplored niches such as green entrepreneurship and eco-innovation. This model highlights how external shocks and targeted public policies can unlock latent entrepreneurial potential and stimulate sectors previously constrained by historical legacies.

Using France as a case study—a nation characterized by a rich socio-economic history shaped by the transformative impact of the French Revolution, industrial growth fueled by abundant natural resources, and strategically advantageous geographical positioning—this paper explores the coexistence and divergence of these two innovation models. On one hand, regions with longstanding industrial bases, such as those in resource-rich areas, demonstrate the persistence of entrepreneurial culture, albeit sometimes hampered by entrenched structural constraints. On the other hand, emerging regional hubs illustrate how shifts toward sectors like digital health, cybersecurity, and renewable energies can redefine local innovation ecosystems.

By comparing these complementary models within a unified national context, our study contributes to a deeper understanding of the mechanisms that drive regional innovation and high-quality entrepreneurship. The findings underscore the importance of developing policies that not only preserve beneficial aspects of historical legacies but also promote adaptive transformation in response to evolving economic landscapes.

Strengthening innovation in Greece - opportunities and challenges

Mr Georgios Papastamatiou¹, Mr Eleftherios Podimatas¹, Dr Vassiliki Delitheou¹

¹Panteion University, Kallithea Athens, Greece

G03-O3 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 27, 2025, 4:30 PM - 6:30 PM

Innovation is a critical driver of long-term economic growth, social prosperity, and global political influence, making it a top priority for both businesses and nations. The European Union (EU) aspires to lead in global research and innovation, as outlined in the 2024 Budapest Declaration. However, the EU lags significantly behind its competitors, such as the US and China, in key innovation metrics. For instance, EU businesses invest half the percentage of GDP in R&D compared to the US, and the EU holds only 17% of global patent filings, trailing behind the US (21%) and China (25%). Additionally, the EU has just three universities in the global top 50 for scientific research, compared to 21 in the US and 15 in China. Despite initiatives like Horizon Europe, the EU's innovation ecosystem faces challenges such as fragmented funding, bureaucratic hurdles, and limited venture capital, with only 5% of global venture capital raised in the EU compared to 52% in the US. Regulatory complexity, data restrictions, and reliance on third countries for critical resources further hinder innovation.

Within this context, each member state has a significant role and responsibility to effectively develop the means and tools to leverage the opportunities available to them. Greece, the member state that this paper explores, has made strides in fostering innovation through initiatives like Equifund and Elevate Greece, supported by EU programs and financial instruments. However, challenges such as bureaucratic inefficiencies, limited access to venture capital, and gaps in commercializing research persist. To unlock its innovation potential, Greece must enhance academia-industry collaboration, develop a robust venture capital ecosystem, streamline regulations, and foster an entrepreneurial culture. Leveraging EU programs like Horizon Europe and adopting international best practices, such as Germany's Fraunhofer institutes or Israel's entrepreneurship training, can further strengthen Greece's innovation ecosystem. By addressing these barriers and investing strategically in human capital and infrastructure, Greece can transition toward a competitive, innovation-driven economy and contribute to the EU's broader goals of global leadership in research and innovation.

The effects of implementing a place-based policy on the integration of functional urban areas – the case of Poland

Dr. Dagmara Kociuba¹

¹Maria Curie-Skłodowska University, Lublin, Poland

G20-O1 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 27,
2025, 4:30 PM - 6:30 PM

The study presents the effects of implementing one of the place-based policy tools, i.e. Integrated Territorial Investments (ITI), on the integration of planning and governance in functional urban areas (FUAs) in Poland. The background to the analysis was the impact of the process of formalizing inter-municipal cooperation, reflected in the delimitation of intervention areas, the legal form of the partnership and the developed rules of governance and strategic planning in FUAs in the 2014-2020 cycle. This became the starting point for demonstrating the changes in the 2021-2027 cycle. The analysis was carried out in the following aspects: institutional, cooperative and planning. The research showed that despite the use of different spatial solutions, governance structures and approaches to policy implementation and strategic planning, the experience of implementing ITIs played a significant role in strengthening existing alliances, initiating new coalitions, better adapting public interventions to the changing geographical scale of functional areas, strengthening institutional capacities and building territorial identity. The multi-faceted analyses allowed for the formulation of recommendations regarding the implementation of place-based policies in FUAs.

Evaluating the Impact of the "Resto al Sud" Program on Italian LLMAs

Dr. Riccardo Persio¹

¹University Of L'aquila, L'aquila, Italy

G19-O5 Urban, Regional and Local Policy Evaluation, G3, August 29, 2025, 11:00 AM - 1:00 PM

The analysis presented in this chapter evaluates the impact of the "Resto al Sud" program on the economic dynamics of Local Labour Market Areas (LLMAs) in Southern Italy. The study provides nuanced insights into the program's effects on average firm size by employing the Synthetic Difference-in-Differences (SDID) approach and integrating Principal Component Analysis (PCA) to refine covariate selection. The findings reveal a significant reduction in average firm size, likely attributable to the proliferation of micro-enterprises driven by the program's incentives. While these results highlight the program's initial success in fostering entrepreneurship and addressing regional disparities, they underscore structural barriers to firm growth, such as limited access to credit and inadequate infrastructure. This chapter concludes by emphasizing the need for complementary structural interventions to support enterprise scaling and promote sustainable regions.

From Rural Roots to Digital Fruits: AI-Driven Insights into Innovation

Dr. Korneliusz Pylak¹

¹Lublin University of Technology, Lublin, Poland

S61-S1 Innovation, Entrepreneurship and Industrial Dynamics in Rural Areas, Amph 3, August 27, 2025,
2:00 PM - 4:00 PM

This study introduces an innovative methodology for measuring rural innovation through the use of advanced digital techniques and artificial intelligence. Traditional metrics based on patents, scientific publications and R&D projects often miss the complex dynamics of innovation in rural contexts where such activities are rare. To fill this gap, we propose a framework that uses unstructured textual data from company websites to capture the evolution of product and service innovation in rural regions.

Our study focuses on Poland, utilizing a comprehensive REGON database to identify companies operating in rural areas. We filter out farms with no additional economic activity and exclude companies located in urban centers, thus isolating companies that truly represent the rural economy. For each selected company, we retrieve website data - from records or targeted web searches - and use advanced web scraping techniques to extract textual information related to their offerings.

A state-of-the-art large language model (LLM) is then used to automatically categorize and extract product names and descriptions from unstructured text. This process creates a rich database linking companies to their digital representations of products and the specific websites where these details are found. To integrate the time dimension, we use the Wayback Machine to determine the earliest appearance of these websites, effectively marking the timing of new innovations.

In the next phase, we are refining our LLM to better identify and prioritize links to websites that contain information about products and services. Advanced techniques, including transformer-based semantic analysis, named entity recognition and embedding-based clustering, accelerate historical analysis of archived web content. This allows us to quickly develop a detailed timeline of product and service launches, capturing the dynamics of innovation in rural areas both locally and regionally.

Our approach not only provides a comprehensive picture of the evolution of rural innovation ecosystems, but also offers policymakers and stakeholders a powerful tool for designing targeted interventions to promote rural entrepreneurship and sustainable industrial transformation. Future research can extend these methods to urban contexts, facilitating a deeper exploration of the diffusion of innovation between rural and urban areas in the digital age.

Living life in the fast lane: a urban car and bike speed comparison analysis

Prof. Angela Stefania Bergantino¹, Dr. Alessandro Gardelli¹

¹University of Bari Aldo Moro, Bari, Italy

S90-S2 Transport Policies Shaping Sustainable Cities and Territories, Amphitheater II - SAKIS

KARAGIORGAS, August 29, 2025, 11:00 AM - 1:00 PM

In this paper we aim to compare the travel times of cars and bikes in Bari, Italy, which is a car-oriented and car-dominated urban area. Using 2023 OD bike commuting trips data and distance-optimizing corresponding simulated car trips on real-world speed network, we aim to calculate travel time differences between the two modes based on distance classes, age, gender. By using Value of Time (VOT) for Italian car commuting trips we aim to provide an estimate of the Value of Travel Time Savings (VTTS) derived by using the fastest mode. In this way, we aim to provide evidence of whether and for what types of trips bike is a valid substitute for car. By calculating differences in Value of Time, we can provide economic justification in terms of travel time cost to the choice of one mode over the other for specific trips.

Exploring the Impact of Tourism Investments on Territorial Attractiveness: Evidence from Italian Municipalities

Dr. Maria Grazia Cito¹, Prof. Marika Arena², Prof. Angela Stefania Bergantino¹, Dr. Alessandro Buongiorno¹, Dr. Mario Intini¹, Dr. Francesco Scotti²

¹Università degli Studi Aldo Moro di Bari, Bari, Italy, ²Politecnico di Milano, Milano, Italy

S89-S1 Empirical Evidence and Policies for Sustainable and Resilient Cities and Territories, G4, August 28, 2025, 4:30 PM - 6:30 PM

This study examines the impact of European Union Cohesion Policy-funded tourism investments on the attractiveness of Italian municipalities. Using the “Tourism Attractiveness” dataset from Open Coesione, tourism projects were reclassified to distinguish between different types of investments. Their effects are estimated using a spatial model. The findings indicate that Cohesion Policy funds generally enhance tourism attractiveness, though the impact varies depending on the type of investment. Certain investments exhibit synergistic and non-linear effects, with diminishing returns at higher spending levels. These results highlight the complex dynamics of tourism funding, offering valuable insights for policymakers and stakeholders seeking to optimize investment strategies for enhancing local tourism appeal.

The housing market and land values: how to finance required public investments?

Prof. Henri L.F. de Groot¹, Dr. Thomas de Graaff¹, MSc Yashvant Premchand¹

¹Vrije Universiteit Amsterdam, Amsterdam, The Netherlands

S22 Taxes, Public Finance and Spatial Development, D12, August 29, 2025, 11:00 AM - 1:00 PM

Throughout Europe, starters on the housing market are struggling to find affordable houses. An important part of the problem is to find the financial resources that are required to finance the public investments in, for example, local infrastructure, public facilities such as libraries, etc. This results in lack of construction of new housing stock. At the same time, we know that land values vary widely within countries, within regions and even within cities. And with growing cities and their associated urban externalities, land values tend to increase sharply, yielding large rent-surpluses for those who already own the land and remaining unexploited for the financing of necessary public goods. Those increases in land values may also lead to disincentives for construction of new housing as expected future profits are higher. This paper assesses what the effects are of the difference in public and private land ownership on both housing prices and newly built housing stock, where we aim to tease out the negative effect of both local taxation and larger housing supply on housing prices on the one hand and the positive effects of local public investments on the other hand. Preliminary results for the Netherlands point to lower prices and more new housing for those municipalities that are active on the land market and publicly invest in future housing plots; investments which can be recuperated using, for example, lease hold constructions.

Urban Margins: Examining Socio-Spatial Segregation and Peripheral Development in Usme, Bogotá

Dr. Nelcy Echeverria Castro¹

¹Universidad De La Salle, Bogota, Colombia

S50 Social Housing and Socio-Spatial Segregation: New Challenges in Urban Planning, D1, August 28, 2025, 9:00 AM - 10:30 AM

This study examines the dynamics of socio-spatial segregation and peripheral urbanisation in Bogotá, focusing on Usme, a neighbourhood characterised by informal settlements and large-scale social housing projects. It explores how social housing policies, rather than reducing inequality, have reinforced segregation by concentrating low-income populations in peripheral areas with limited infrastructure, public services and economic opportunities. The research highlights how these patterns of urbanisation contribute to wider spatial inequalities and environmental challenges in rapidly expanding cities in the Global South.

The study aims to analyse the relationship between social housing production and socio-spatial segregation, identify the socio-economic and environmental dynamics that characterise peripheral urbanisation in the Usme, and propose effective strategies to promote more equitable and sustainable urban development. Using a multi-scale methodology, it examines macro-level policy frameworks, meso-level spatial transformations and micro-level experiences of residents. Findings indicate that market-driven land allocation has resulted in social housing developments being located predominantly on the periphery of the city, thereby exacerbating socio-economic disparities. The lack of integrated urban planning has resulted in fragmented development, inadequate public transport and limited access to employment centres. In addition, urban expansion into ecologically sensitive areas has led to environmental degradation and increased climate vulnerability, exacerbating the marginalisation of low-income communities.

Despite these challenges, Usme residents demonstrate resilience through self-built housing adaptations, community networks and informal economic activities. However, the lack of participatory planning processes has limited their ability to influence housing policies and urban development strategies. The study highlights the need for a paradigm shift in urban planning, advocating for policies that integrate peripheral areas into the broader metropolitan framework through equitable distribution of services, multimodal transport systems and climate-resilient infrastructure.

This research contributes to academic and policy debates on urban inequality and housing in the Global South. It highlights the importance of inclusive, equitable planning that prioritises spatial integration, environmental sustainability and the active participation of marginalised communities. By recognising the agency of marginalised residents, policy makers and urban planners can develop policies that promote more equitable and resilient cities.

Intersectoral Relations of Agriculture and Agro-Based Industries within the Brazilian Economy

Assistant Professor Paulo Nunes, Prof. Carlos Bacha

¹University Of Sao Paulo, Piracicaba, Brazil

G12-O4 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 29, 2025, 11:00 AM - 1:00 PM

Brazil's agribusiness sector has increased during the last 24 years, mainly based on exports of agricultural and agro-industrial products. However, it has also imported industrial inputs, such as fertilizer and machinery. In this context, the objective of this article is to analyze, using input-output matrices, the evolution of linkage indices (both forward and backward) and multipliers (for output, income, and employment) of agriculture and agro-based industries in Brazil, considering the years 2000, 2005, 2010, and 2015. These four years allow for the aggregation of input-output matrices, developed by the Brazilian Institute of Geography and Statistics, into 40 sectors and the decomposition of agriculture into three segments: crop production, livestock, and forestry. Agro-based industry (also known as agro-food industries or just agro-industries) is broken down into 12 segments. It is observed that, between the years 2000 and 2015, the forward linkage indices of agriculture sector, considering its all three segments together, on average, fell by 27% (indicating its decreasing importance in fostering agro-based industries, trade, and other economic activities within the country), while its backward linkage indices increased by 42% (noting that agriculture had purchased more industrial inputs, but a significant share of them are imported). The opposite trend has taken place for the aggregated 12 agro-based industries, whose forward linkage index increased, on average, by 18%, while the backward linkage index decreased, on average, by 12% (between 2000 and 2015). For both agriculture and agro-industry sectors, the output, employment, and income multipliers have declined from 2000 to 2015, however in 2015 they were higher for agro-industry sector rather than for agriculture sector, on average. The strong mechanization of agriculture during the first quarter of the 21st century had led to reduce its employment multiplier, on average, by 75% between 2000 and 2015. These aggregated results, however, conceal differences in the behavior of the aforementioned indicators among the three agricultural segments and the 12 agro-industrial segments analyzed in the paper. It highlights the importance of considering specific characteristics within the sectors that make up important shares of the Brazilian agribusiness, particularly within its agriculture and agro-industry sectors when designing policies and programs aimed at ensuring their growths. Especially keeping in mind, there are boom phases followed by downturns in agricultural and agro-industrial commodity prices, which strongly dictate the domestic dynamism of agribusiness, responsible for ¼ of the Brazilian GDP in average during the years 2021 to 2023.

Towards age-friendly routing and accessibility: A framework for route choice studies in older pedestrians

Dr. Nir Fulman^{1,2}, Prof. Umut Türk³, Dr. Yulia Grinblat², Dr. Kathrin Foshag⁴, Prof. Armağan Teke Lloyd³, Prof. Marina Toger⁵, Prof. Alexander Zipf^{1,2}, Prof. Sven Lautenbach²

¹GIScience Chair, Institute of Geography, Heidelberg University, Heidelberg, Germany, ²Heidelberg Institute for Geoinformation Technology gGmbH, Heidelberg, Germany, ³Abdullah Gul University, Kayseri, Türkiye, ⁴TdLab Geography, Institute of Geography, Heidelberg University, Heidelberg, Germany, ⁵Department of Human Geography, Uppsala University, Uppsala, Sweden

G07-O3 Spatial Attributes of (de)Population, Ageing, Loneliness and Demographics, G1, August 29, 2025, 9:00 AM - 10:30 AM

Routing systems can help older adults overcome environmental barriers to walking, supporting their community engagement and autonomy. Additionally, the paths generated by these systems can be used for pedestrian accessibility analysis, contributing to 15-minute city initiatives. By identifying factors that influence older adults' path selection, route choice research can guide the development of empirically grounded systems that support age-friendly routing and accessibility. In recent years, interest in pedestrian route choice has grown, yet little attention has been devoted to older adults' distinct route choice behaviors. We propose a framework for studying route choice in older adults based on a scoping review of the literature on the topic.

We identify critical methodological gaps in studying route choice among older pedestrians and offer guidance to enhance future research. First, most route choice studies focus on functional, point-to-point trips, employing discrete choice models based on utilitarian theory, where path length is minimized. However, route choice research on older adults generally centers on leisure trips starting and ending at home, with an emphasis on qualitative approaches. To bridge this gap, we propose a utility maximization approach for leisure trips that accommodates non-linear evaluations of path length and incorporates other relevant factors.

Second, almost all of the existing studies treat older adults as a homogeneous group, despite the diverse motoric, sensory, and cognitive declines that influence walking capability. We recommend stratifying older adults by age and functional states, based on gerontological and walkability research, to generate more nuanced insights.

Third, most route choice studies use general walkability frameworks that focus on broad environmental attributes, often overlooking issues specific to older adults—such as street signage and pedestrian obstacles. We advocate for a mixed-methods approach, combining qualitative methods to identify relevant attributes with quantitative analysis.

Fourth, relevant attributes like sidewalk quality are often manually audited, which is time-consuming and prone to bias. We propose a set of automated data sources and methods, including street view imagery and deep learning, to enhance data collection on environmental factors for older adults' route choice studies.

Lastly, because older adults' travel diaries can be difficult to obtain, existing studies often rely on labor-intensive methods—such as walk-along interviews—which typically result in small participant samples. To address these limitations, we introduce a novel virtual environment for immersive virtual walks, enabling controlled stated preference experiments with larger participant pools. We then evaluate this new approach against established methods.

Key settings for a durable Living Lab - Research topics and emerging trends

Ms Ioana-Maria Ursache¹, Ms Irina Clipca¹, Ms Ioana Bejenaru¹, Ms Andreia Daniela Damian¹, Ms Georgiana Juravle¹

¹Alexandru Ioan Cuza University of Iasi, Iasi, Romania

S72 From Responding to Adapting and Transforming EU Cities, D12, August 27, 2025, 11:00 AM - 1:00 PM

Living Labs are essential instruments for urban innovation, fostering stakeholder co-creation/collaboration and real-world experimentation across various domains under the smart city paradigm, e.g., mobility, digitalisation, economy, healthcare. While these initiatives have demonstrated potential for participatory governance and digital transformation, their long-term sustainability remains uncertain. Some Living Labs evolve into enduring institutions, while others cease operations after a limited period, raising important questions about the governance, and the financial and/or institutional underlying conditions.

This study explores the factors that shape the durability of Living Labs through a bibliometric and thematic analysis of the literature, by focusing on organisational structures, governance models, and sources of funding. The lifespan of selected initiatives is assessed, their financing mechanisms, and the actors driving their development, while accounting for the originating sector, whether academic, public or private. Furthermore, we highlight how the thematic focus of Living Labs impacts sectoral priorities and influences their resilience. Our findings reveal significant patterns of durable success or failure, offering insights for future governance models development.

By identifying the key governance and financial mechanisms that contribute to the sustainability of Living Labs, this study highlights their crucial role in urban innovation. Our results offer valuable guidance for policymakers, urban planners and researchers seeking to design more adaptive, long-lasting Living Labs that effectively support collaborative and sustainable urban development.

Does institutional quality moderate the relationship between the green transition and regional competitiveness? Evidence from Italian provinces

Dr. Giulio Pedrini¹, Prof Bernardina Algieri, Luca Cattani, Marianna Succurro

¹Kore University of Enna, Enna, Italia

G02-O5 Regional Growth Models, Competitiveness, and Convergence, B1, August 29, 2025, 9:00 AM - 10:30 AM

This paper explores the relationship between the green propensity of Italian provinces and their international competitiveness, focusing on the moderating role of institutional quality. Green transition can significantly affect local competitiveness, depending on how regions adopt sustainability practices. Provinces investing in green technologies, such as renewable energy, green construction, and sustainable agriculture, can boost innovation, productivity, and efficiency, ultimately enhancing competitiveness. Green innovation, green-labelled degrees, and green jobs serve as measures of green propensity, while international competitiveness is gauged through export propensity and trade openness indices. The study also examines how institutional quality influences this relationship, as regions with higher institutional quality are better positioned to foster green innovation and attract investments in sustainable industries. Green transition can improve regional competitiveness through innovation, investment, and job creation, but regions failing to adapt may face higher costs and reduced global competitiveness. The paper uses an original dataset combining provincial data on exports, imports, green capacity, and institutional quality indices over the period 2005–2022. Findings contribute to understanding how green initiatives impact provincial competitiveness, with policy implications regarding the importance of institutional quality in supporting the green transition.

The Urban Blight in Downtown São Paulo

Mr Gabriel Batista¹

¹Universidade de São Paulo (USP), São Paulo, Brazil

G22-O6 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, G2, August 29, 2025, 2:00 PM - 4:00 PM

São Paulo is one of the largest cities in the world, with its metropolitan region surpassing 20 million people. Yet, the city faces significant urban contradictions, particularly urban blight in its downtown, severe traffic congestion from commuters traveling to the city center, and a considerable housing deficit.

This study examines the economic mechanisms behind these issues — specifically, why São Paulo's downtown suffers from urban blight despite well-developed public infrastructure and abundant job opportunities. Using property price data from the municipality's database of transacted properties, along with data from Origin-Destination surveys and the Brazilian Census, I apply a General Equilibrium Model to account for neighborhood amenities, productivity, and job accessibility.

Results show that central neighborhoods are relatively undesirable to live in, with some offering lower amenities than 75% of the city's neighborhoods, yet they remain highly productive. This reflects the observed pattern of the region concentrating jobs (2.6% of the metropolitan area) while housing a much smaller share of the population (0.5%). Further analysis reveals a positive correlation between calculated amenities, property vacancy (a proxy for urban blight), and crime rates. Thus, given the region's high employment accessibility (greater than 95% of all neighborhoods), there is a good potential for reoccupation and revitalization.

Impact of occupancy density on the seasonal energy performance of a university residence

Dr. Alessandra Gugliandolo¹, Prof. Fabio Minutoli²

¹ENEA, Bologna, Italy, ²UNIVERSITY OF MESSINA, MESSINA, Italy

S34 Efficient Buildings and Industrial Processes: Driving the Energy Transition, E1, August 29, 2025,

9:00 AM - 10:30 AM

The energy efficiency of residential buildings is a key element in the transition towards sustainable models, with a particular focus on university residences, which are characterised by a high variability of occupancy density over the academic year. The need to modernise and increase the number of beds, also in response to the investments envisaged by the National Recovery and Resilience Plan (NRRP), which allocates €1.2 billion for the construction of new university residences and the renovation of existing ones, makes the use of predictive tools to analyse the interactions between energy consumption, living comfort and facilities management essential. These tools include dynamic energy simulations, big data analysis, energy management and monitoring systems based on Building Energy Management Systems (BEMS), the Internet of Things (IoT) for intelligent monitoring. In addition, the use of thermo-fluid dynamic models such as Computational Fluid Dynamics (CFD) allows the study of temperature distribution and air flows in indoor spaces, optimising air quality and occupant comfort. Using some of these tools, such as CFD analysis and the use of energy simulation models, this study analyses the heat balance of a university residence, identified through the analysis of several case studies, varying the occupancy density at different times of the year and under different weather conditions. The results show how the increase in internal inputs resulting from a higher occupancy density facilitates energy savings in winter, while in summer it contributes to an increase in cooling demand, creating situations of thermal discomfort.

To mitigate these effects, which are determined by the physiological behaviour of a building organism, we have taken into account the characteristic of the "university housing" building typology; the aim was to improve the distribution of the occupants inside the building, to provide a control system adapted to the needs given by the use of each room, at different times of the day and during the academic year. In addition, a conscious use of natural ventilation and the use of tools to assess user needs (e.g. questionnaires and behavioural analysis) can reduce the consumption and improve the energy efficiency.

These assessments will be developed considering the resources of the NRRP to ensure targeted, effective and sustainable investments. This approach will provide concrete tools for planners, facility managers and policy makers, contributing to the renovation of the university building stock and the creation of more efficient, comfortable and resilient environments to climate and energy challenges.

Does the Quality of Social Housing Matter?

Dr. Nelcy Echeverria Castro¹, Dr. Juan Eduardo Chica², Arch. Andres Rueda²

¹Universidad De La Salle, Bogota, Colombia, ²University of Bogotá Jorge Tadeo Lozano, Bogotá, Colombia

S50 Social Housing and Socio-Spatial Segregation: New Challenges in Urban Planning, D1, August 28, 2025, 9:00 AM - 10:30 AM

Social housing in Colombia has historically been defined as a housing solution aimed at low-income sectors of the population. It is also the type of housing with the highest demand in the country. The area of social housing in the country has shown a decrease over the years; it has gone from a minimum area of 80 square meters in 1980, to 60 square meters by 1993, and to 45 square meters by 2004 (Orozco, 2018). This does not directly speak of a decrease in quality, but of an increasingly limited size and a constant increase in density, as it is expected to build more and cheaper to meet a growing demand but bringing as an indirect consequence an increase in housing standardization. In this sense, the research question that guides this article is What particularities does the qualitative deficit of social interest housing projects present between cities with particular social, cultural, and geographical dynamics? Thus, the aim is to understand how the problem raised about the qualitative deficit in social housing (VIS for its Spanish acronym) is expressed in different cities of the country. A mixed methodology with quantitative and qualitative techniques is used to analyze the qualitative deficit in social housing complexes. The quantitative component will characterize the quality of communal spaces and housing units of each sample, based on measurements and analysis variables, taking as a data source planimetries of the housing complexes. Additionally, structured surveys will be applied to a representative sample of residents about their degree of satisfaction with the design, materiality, and comfort of the housing. The qualitative component will characterize the perception of housing quality from residents and other actors from the public sector and private entities linked to the design and production of social housing. This analysis will be done based on semi-structured interviews. The results show that the qualitative deficit of social housing is confirmed due to the decrease in housing size, construction materials, and little consideration of the cultural, demographic, and social dynamics of those who inhabit them. There is a standardization and lack of adaptation of the common spaces of social housing complexes to the social and cultural particularities of the territories, prioritizing the reduction of construction costs and access to low land rents, over other socioeconomic and cultural factors.

Building a framework on territorial competitiveness for wellbeing from conceptualisation to implementation

Dr. Susana Franco¹, Dr. James R. Wilson¹

¹Orkestra-Fundación Deusto, Donostia - San Sebastian, Spain

S86-S1 Rethinking Economic Growth in Regional Science: on New Narratives and Indicators, G4,
August 27, 2025, 2:00 PM - 4:00 PM

This paper presents the process of constructing a framework for territorial competitiveness for wellbeing, as a collective endeavour of a research institute that has the mission of fostering the competitiveness of the region where is based through action-oriented research to improve the wellbeing of their citizens. The conceptualisation phase of the process has involved an iterative process to visually reflect the concept and to reduce its components. The resulting framework contains three distinct elements: (i) dimensions of territorial performance, disaggregated in economic/business performance, which typically forms part of the analysis of territorial competitiveness, and wellbeing performance, which should constitute the ultimate goal of territorial competitiveness; (ii) the dynamic levers of competitiveness for the territory, which include all the factors that have some impact on the territory's competitiveness and wellbeing, and (iii) the structural context of the territory, which includes characteristics that are largely given, change slowly over time, and are neither good nor bad per se. Completing the framework are two cross-cutting dimensions: inclusiveness and international connection. The implementation phase is ongoing, starting from a selection of indicators that were initially analysed in 2021 and incorporating different indicators in subsequent years that allow a deeper understanding of various parts of the framework through different lenses.

Region under pressure: Wind power technology and rewriting new regional conflicts and local identities.

Dr. Connie Reksten¹

¹University Of Western Norway Of Applied Sciences, Bergen, Norway

G14-O1 Left Behind Areas, Insularity, Inner Areas and Border Regions, B4, August 27, 2025, 2:00 PM - 4:00 PM

This paper aims to elaborate the concepts of ‘new regional conflict’ due to the highly temperature controversies in the area of sustainability technology and constructions of wind farms. The discussion is based on empirical studies, case study, law and policy document, and ethnography on social media.

New sustainability technology is often located in left behind areas and insularity. In the Scandinavian countries this technology is even located in the high mountain areas. Today, this 'new uses of rural spaces' have turned the European periphery to a venue of highly temperature controversies as well as new regional conflict.

This paper will discuss the case of Fosen in Norway. In 2023 the Norwegian authority's construction of the wind farm in the high mountain of Fosen was charged to be a human rights violation. The conflict reaches a preliminary peak on the night of Monday 27 February 2023, when the activists Ella Marie Hætta Isaksen together with the Swedish climate activist Greta Thunberg was carried away by the Norwegian police. Fosen wind farm is to date the largest onshore wind farm in Europe, with a total of 277 wind turbines.

In this paper the empirical case of Fosen wind farm will be discuss along several approaches, like new regional conflicts and sustainable conflicts, as social and cultural identity and conflicts of place identity, too. In the case of Fosen in Norway, Fosen wind farm was charged to be a human rights violation to Saami Reindeer husbandry, though it soon turned out to be a conflict of Indigenous Peoples' Rights and a conflict of ethnic identity as well.

Keywords; regional conflict, sustainability technology, wind power technology, place identity, social and cultural identity.

Fiscal Multipliers and Economic Fluctuations: The Case of the Greek Regions

Dr. Charalampos Arachovas¹, Professor Dimitrios Christopoulos², Professor Antonios Rovolis³

¹Adjunct Lecturer AUEB, Administrative Director of INEMY_ESEE, Athens - Greece, Greece,

²Professor, Athens University of Economics and Business, Athens, Greece, ³Professor, Panteion University of Social and Political Science, Athens, Greece

G02-O4 Regional Growth Models, Competitiveness, and Convergence, B1, August 28, 2025, 4:30 PM - 6:30 PM

This paper comprises two main sections. The first section examines the evolution of public expenditure and capital investment across Greek regions. Utilizing various spatial statistical measures, we compare the regional distribution of public consumption against public infrastructure investment. Our analysis indicates that, amid recent economic austerity in Greece, public investment has experienced a significant decline, whereas public consumption expenditure has remained relatively inelastic. The second section focuses on estimating fiscal multipliers for both public spending and public infrastructure investment. Literature suggests that public infrastructure investments often yield a lower short-term economic impact compared to public consumption. Moreover, fiscal multipliers are believed to fluctuate throughout the business cycle. By employing regional data, we isolate regional business cycles while controlling for national and international factors. Fiscal multipliers are estimated using Local Projections methods, and our results are benchmarked against similar studies within other European Union countries. Understanding the distinct effects of public consumption and capital investment shocks can guide regional and national policymakers in formulating effective fiscal strategies.

The Geography of Green Innovators in the United States

Prof. Stefano Magrini¹, Prof. Margherita Gerolimetto¹, Prof. Alessandro Spiganti²

¹Università Ca' Foscari di Venezia - Dipartimento di Economia, Venice, Italy, ²Università degli Studi di Genova - Dipartimento di Economia, Genova, Italy

G03-R Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B4, August 27, 2025, 4:30 PM - 6:30 PM

In the last decades, the geography of innovation activity became much more concentrated. By focusing on the US metropolitan statistical area of residence of the inventors of patents filed to the United States Patents and Trademark Office between 1990 and 2016, we show that this is increasingly true also for “green” innovation, i.e. patents covering mitigation or adaptation to climate change. We find a sharp increase in concentration across areas after the beginning of the 2000s, with areas that are generally more innovative also producing more green patents. Focusing on the relationship between green innovation and urban density, we find evidence of a positive significant relationship only after 2002. To shed some light on this puzzling outcome, we further qualified the concept of density to urban human capital density, finding the expected significant relationship between green innovation and density before and after 2002, and we aim at possibly rationalizing these findings.

A Clusterwise Approach to Digital and Ecological Transitions of European regions

Dr. Simona Cafieri¹

¹Istat, Napoli, Italy

S70 The Role of AI in Turbulent Times: Challenges, Opportunities and Best Practices for Data-Driven
Regional Resilience, Amph 3, August 29, 2025, 9:00 AM - 10:30 AM

In recent years, the interlinked of digitalization and ecological preservation have risen to prominence as key drivers of sustainable and inclusive development across European regions. This work delves into the interconnection between digital technologies particularly artificial intelligence (AI), and strategies aimed at environmental sustainability, examining their combined potential to reshape regional economies and foster resilience.

By applying a Clusterwise method approach at the NUTS2 European level, the research identifies groups of territories distinguished by their degree of digital readiness, and commitment to ecological transition.

This method allows for an exploration of how regional contexts, policy decisions, and infrastructural investments interact to produce divergent outcomes. While some regions move swiftly ahead with innovative AI-driven solutions, others lag behind due to infrastructural or policy constraints, thus magnifying existing social and economic inequalities. The results underscore the complexity of balancing economic efficiency, territorial equity, and environmental objectives, illustrating that a one-size-fits-all approach is unlikely to achieve sustainable transformation on a broad scale.

This work not only demonstrates the importance of tailoring interventions to local realities but also offers a data-driven roadmap for policymakers and stakeholders seeking to harmonize digital and ecological transitions. By integrating advanced analytical tools with forward-looking strategies, European regions can move closer to a future where economic progress, social inclusion, and environmental stewardship reinforce one another rather.

An efficiency Analysis on Italy's NRRP

Prof. Maria Chiara D'Errico¹, Prof. Maria Chiara D'Errico¹

¹Università Degli Studi Di Perugia, Roma, Italy

G20-O1 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 27,
2025, 4:30 PM - 6:30 PM

The Covid-19 Pandemic and the ensuing recession and inflation have shown the necessity of political and economic planning. The EU Commission's Recovery and Relief Fund has been Europe's response to the crises. Through its instrument, NextGeneration EU (NGEU), the biggest set of stimuli in economic history has been established. Italy, one of the most severely hit countries in Europe, has translated NGEU's targets into the National Recovery and Resilience Plan (NRRP) which aims to bolster the economy, restore the industry and promote digital and green transitions.

Our work aims to study the ongoing NRRP and assess its performance so far and to gauge its efficiency on economic productivity. We use open data from ItaliaDomani, the NRRP's official website, concerning the type and amount of financing, its geographical distribution and the targets set by the EU.

This will enable an empirical work through a series of inference methodologies, chiefly a Data Envelopment Analysis, to measure the NRRP's efficiency on the state's productivity.

Particular focus will be given to regional performance, attesting whether regions which benefited more from grants and loans performed better.

Our contribution aims to provide a novel view on the NRRP's performance and efficiency.

Additionally, it aims to provide a solid instrument for policy making, a theoretical framework helping policy-makers in the policy design and implementation system and to serve as a reference tool for future financing programmes.

Towards Achievement of SDG 5: Empowering Women in the Western Balkans-Advancing Gender Equality in Agricultural Land Ownership

Dr. Veronika Efremova¹, Leman Yonca Gurbuzer², Dr. Irena Djimrevska³

¹Independent expert, Skopje, Republic of North Macedonia, ²FAO, Rome, Italy, ³GIZ, Skopje, Republic of North Macedonia

S02 Localizing Sustainable Development Goals: Actions, Assessments, and Interlinkages at the Regional Level, G6, August 27, 2025, 4:30 PM - 6:30 PM

This paper highlights the progress of Western Balkan countries in reporting on Sustainable Development Goal (SDG) 5, which focuses on achieving gender equality and empowering women and girls, with particular emphasis on Indicator 5.a.1, which monitors gender equality in agricultural land ownership and secure rights. The study examines the significant achievements made by the region towards implementing SDG 5, while also highlighting existing gaps and challenges. The adoption of the 2030 Agenda for Sustainable Development by the Western Balkans between 2015 and 2016 has set a clear path for advancing gender equality and fostering economic growth, social inclusion, and environmental sustainability, with SDG 5 playing a central role in these efforts. Despite progress, traditional gender roles, inadequate legal frameworks, and socio-cultural barriers continue to hinder women's access to land and property rights, particularly in rural areas. These challenges limit women's economic empowerment and their ability to contribute to sustainable development.

The paper outlines the collaboration between the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the Food and Agriculture Organization (FAO), in partnership with the National Statistical Offices and Ministries of Agriculture. Through capacity-building initiatives and pilot surveys in the Western Balkan Six, the approach used aimed to improve status of women in the land ownership and to increase availability of gender disaggregated data that would feed into evidence-based agriculture and rural development policy design, monitoring and evaluation.

The paper concludes that addressing legal, financial, and cultural barriers to land ownership is crucial to achieving SDG 5 in the region. It emphasizes the need for continued data collection and reporting on SDG Indicator 5.a.1 in the Western Balkans to measure progress and promote gender equality in land ownership, with a particular focus on policy interventions that support rural women's empowerment.

Keywords: SDG 5, women empowerment, agriculture and rural development policies, gender equality, land ownership, gender disaggregated data

Skills and Knowledge Exposure to the Twin Transition: A Multiregional, Multisectoral Analysis

Dr. Andre Carrascal-Incera¹, Prof. Esteban Fernandez-Vazquez¹

¹University of Oviedo, REGIOlab, Oviedo, Spain

G06-O1 Space and Digital Transformation, A1, August 27, 2025, 11:00 AM - 1:00 PM

The pace in which certain jobs with specific skills are demanded is changing rapidly. The so-called twin transition, comprising both digital and green transformations, is undoubtedly reshaping the economies, changing the way industries perform, and affecting the future of work across Europe. As the adoption of advanced digital technologies and low-carbon practices accelerate, the demand for new skills and knowledges increases, while other skills become outdated fast. The extent to which different countries, regions and sectors are exposed to these transformations is quite heterogeneous depending on their sectoral specialization and their capacity to adapt to these new technologies, creating disparities between the economies and polarization in the labour markets.

This paper uses the OECD's Intercountry Input-Output Tables for the year 2019 to analyse the exposure of the European countries, sectors, skills and knowledges to the twin transition. We extend the multiregional and multisectoral model, that accounts for trade spillovers between countries, with the information from European Commission's ESCO (European Skills, Competences, Qualifications and Occupations) to provide labour demand by different categories. Additionally, to match both databases we use the European Labour Force Survey to connect the total employment by economic activity and occupations.

Finally, by simulating the forecasted evolution of the different economic activities, we estimate shifts in labour market demands allowing us to identify the most vulnerable occupations, the number of jobs at risk in each country and sector, as well as the future demand for emerging skills. We believe that this type of analysis can provide valuable insights for policymakers and can serve as the basis for the design of tailored training programs.

Green Innovation as a Mediator: Unraveling the Impact of Foreign Direct Investment on Environmental Pollution

Ms Chongshuying Ruan¹, Prof Giorgio Fazio¹, Dr Jonathan Jones¹

¹Newcastle University, Newcastle, United Kingdom

G03-O4 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 28, 2025, 9:00 AM - 10:30 AM

Foreign Direct Investment (FDI) is experiencing strong global growth, yet its impact on environmental pollution remains highly debated. The Pollution Haven Hypothesis and Pollution Halo Hypothesis dominate discussions, but the role of green innovation as a mediating factor in this relationship remains underexplored, particularly at the European regional level.

This study examines how green innovation mediates the relationship between FDI and environmental pollution, addressing the critical question of whether firms with higher levels of green innovation are more effective at reducing emissions. Unlike previous research, which primarily focuses on country-level analyses, this study shifts the focus to the regional dimension, filling a key gap in the literature.

Using mediation analysis and structural equation modeling (SEM), the study quantifies the indirect effects of FDI on emissions via green innovation, while controlling for firm size, profitability, and industry characteristics. Robustness checks include alternative green innovation metrics (e.g., environmental certifications, R&D expenditures) and sensitivity analyses across industries and geographic regions.

The study introduces a new theoretical framework, suggesting that green innovation plays a key moderating role in determining how FDI influences environmental pollution. Findings offer valuable policy implications, helping governments refine foreign investment strategies, guiding multinational corporations (MNCs) and local enterprises toward sustainable investment decisions, and contributing to global environmental governance.

Future research should further distinguish between Green FDI and non-Green FDI, explore the sector-specific impact of FDI on green innovation, and assess how digital technologies (AI, blockchain) can amplify green innovation spillover effects.

Decoding Regional Dynamics: Institutions, Innovation, and Regional Development Dynamics in the EU

Dr. Kamila Borsekova¹, Dr. Samuel Korony, prof. Andrés Rodríguez-Pose, Michal Styk, prof. Hans Westlund

¹Matej Bel University, Banska Bystrica, Slovakia

G02-O3 Regional Growth Models, Competitiveness, and Convergence, B1, August 28, 2025, 9:00 AM - 10:30 AM

This paper explores the interplay between institutional quality and innovation capacity in shaping regional development across the European Union (EU). Using decision tree modelling based on the Classification and Regression Tree (CART) methodology, the analysis identifies non-linear relationships and complex interactions among 15 indicators spanning institutions, technological readiness, business sophistication, and innovation. By segmenting 233 regions into clusters with shared characteristics, the analysis improves the existing understanding of how governance structures and innovation ecosystems collectively drive regional competitiveness in the EU. The findings stress how institutional quality —particularly in governance effectiveness and public sector accountability— enables innovation and long-term growth. High-performing regions, particularly in Western and Northern Europe, benefit from the convergence of robust institutions and strong innovation outputs. In contrast, post-socialist regions exhibit innovation potential but face systemic governance deficits, pointing to the need for targeted reforms. The results of the analysis advance the analytical discourse on regional competitiveness by integrating institutional and innovation indicators in a single empirical framework and underscore the importance of addressing governance and innovation simultaneously to foster balanced and sustainable regional growth across Europe.

Artificial Intelligence and Gender Inequality

Pablo Casas, Dr. Marie Lalanne¹, Tryfonas Christou, Abián García Rodríguez, Nicholas Lazarou, Simone Salotti

¹European Commission, Joint Research Centre, Seville, Spain

S27-S1 Gender Equality in Regions in Europe and Beyond, D12, August 27, 2025, 4:30 PM - 6:30 PM

This paper sheds light on the potential impact of AI on gender inequality in regional EU labour markets. To conduct the analysis, we use a spatial general equilibrium model calibrated for the EU NUTS2 regions in which male and female workers are characterised by AI exposure levels across regions and sectors. We use four different occupation-specific AI exposure measures to simulate how the EU workforce is expected to evolve due to the integration of AI into occupations. We then assess the impact of this AI exposure on disposable income by men and women, as well as on the gender employment and wage gaps. We find that men and women are differentially exposed to AI. These differences mainly result from the fact that men and women work in different occupations and sectors, and occupations and sectors are differentially exposed to AI. Preliminary results suggest that, *ceteris paribus*, the integration of AI in the economy is expected to increase both the gender pay gap and the gender employment gap, as male workers are on average more exposed to AI than female workers. This overall effect masks regional and sectoral heterogeneity.

Analyzing Accessibility to Citizenship Services: A Network Analysis and Machine Learning Approach

Prof. Angela Stefania Bergantino¹, Dr Mario Intini¹, Mr Gianluca Monturano¹

¹University of Bari, Bari, Italy

S90-S1 Transport Policies Shaping Sustainable Cities and Territories, Amphitheater II - SAKIS
KARAGIORGAS, August 29, 2025, 9:00 AM - 10:30 AM

This work aims to investigate and study the accessibility of citizen services, such as mobility, education, and healthcare, within Italian municipalities. To this end, we employ predictive machine learning methodologies for cluster analysis and network analysis. We use for our estimates a unique local dataset, which integrates municipal socioeconomic variables with advanced engineering features, obtained by analyzing the geo-spatial and road distances between public services and by analyzing the service networks present on the Italian territory. The use of such indicators provides a comprehensive and detailed view of the factors that influence accessibility to services, also allowing to formulate policy recommendations aimed at improving the efficiency of public policies and ensuring a fair distribution of citizen services. Our research highlights the importance of integrating technological approaches with socio-economic data to uncover patterns not visible through traditional methods. This fosters a deeper understanding of how the interconnection between regions and services influences accessibility. The results of our study aim to guide policy makers in identifying areas requiring priority interventions and to support the development of data-driven strategies for balanced and functional territorial policies. This approach is crucial to address Italian territorial heterogeneities, promoting sustainable development that respects the needs of all citizens and ensures equal access to essential services. Our results suggest that municipalities with better connectivity to key public services tend to experience greater socioeconomic well-being. The observed disparities in accessibility across regions point to the need for a more nuanced policy approach, tailored to the challenges of each area. Our project presents itself as a significant scientific contribution, offering innovative and applicable solutions to improve the quality of life in Italian municipalities. In particular, our results support the idea that enhancing infrastructure and ensuring a more equitable distribution of services can reduce regional inequalities.

Urban Scaling of Knowledge Production: Diverging Trends in Scientific Research and Innovation Across European Cities (1980–2010)

Dr. Stefan Rehak¹, Dr. Miroslav Spurek¹, Dr Balazs Lengyel²

¹University of Economics in Bratislava, Bratislava, Slovakia, ²Centre for Economic and Regional Studies, Budapest, Hungary

S67-S1 The Role of Higher Education Institutions in Unlocking Regional Innovation Potential and Overcoming Structural Disparities, G6, August 29, 2025, 11:00 AM - 1:00 PM

This paper examines the evolution of the urban scaling law in the production of patents and scientific papers across European cities from 1980 to 2010. Research and innovation are complex processes that benefit from local interactions, institutional presence, and human capital concentration. Prior studies show that large cities tend to exhibit superlinear scaling in scientific and innovative output, meaning they produce disproportionately more knowledge relative to their size. However, while patent literature has been much in the spotlight in recent years, urban scaling in scientific literature is still relatively under-explored, particularly in Europe. Using geocoded data on patents together with scientific papers of all European universities from Scopus, we analyze 631 cities across 31 European countries. We define cities as functional urban areas (FUA), capturing integrated labor markets. Our findings reveal a divergence between scientific and innovation output. The scaling exponent for academic publications started at 1.21 in 1980, peaked at 1.34 in 2000, and declined to 1.28 in 2010. In contrast, the scaling exponent for patents grew significantly, from 1.01 in 1980 to 1.42 in 2010, indicating an increasing concentration of innovation in large cities. We propose several explanations for these trends. The rising concentration of patents in large cities may result from stronger innovation ecosystems, increased collaboration between firms, universities, and research centers, and the agglomeration of human capital, investors, and support institutions. Meanwhile, the more even distribution of scientific output may be driven by expanded research funding beyond major academic centers, EU cohesion policies, and the rise of digital collaboration tools that enable research across distances.

Cycling Beyond the Shortest Path: Analyzing Micro-Scale Environmental Influences on Route Selection

Prof. Angela Stefania Bergantino¹, Dr. Alessandro Gardelli^{1,2}, Dr. Mario Intini¹, Prof. Frank Witlox^{2,3}

¹University of Bari Aldo Moro, Bari, Italy, ²Ghent University, Ghent, Belgium, ³University of Tartu, , Estonia

S90-S1 Transport Policies Shaping Sustainable Cities and Territories, Amphitheater II - SAKIS
KARAGIORGAS, August 29, 2025, 9:00 AM - 10:30 AM

When analyzing cyclists' route choice, studies often overlook subjective or soft factors. This not only reduces the informational power but also leads to less precise analysis. This study aims at illustrating to what extent cyclists' route choice is function of their subjective exposure to micro-scale elements of the surrounding environment. To achieve this, we map-match 8,947 GPS trajectories of repeated bike commuting trips in the city of Bari, southern Italy, and compare them to their respective shortest paths. We operationalize subjective exposure to micro-scale elements of the surrounding environment by applying semantic segmentation techniques to Google Street Views. Additional data on land use attributes and street and traffic elements contribute to the modeling of route choice as a function of these factors of interest. Furthermore, we identify systematic avoidance with street segments that belong to the shortest paths, enabling the visualization of critical edges in Bari's street network.

Future scenario building for a climate resilient society

Dr. Anna Maria Kotrikla¹, Dr Kyriaki Maria Fameli¹, Dr Amalia Polydoropoulou¹, Dr Monika Mačiulienė², Dr Gintarė Gulevičiūtė², Dr Rūta Balkė², Dr Aelita Skaržauskienė², Dr Kristina Kovaitė², Dr Carina Veeckman³, Dr Havva Ebrahimi Pour³, Dr Floridea Di Ciommo⁴, Dr Azizur Rahman⁵

¹University Of The Aegean, Chios, Greece, ²Vilnius Gediminas Technical University, Vilnius, Lithuania, ³Vrije Universiteit, Brussels, Belgium, ⁴CambiaMO, Madrid, Spain, ⁵Technovative Solutions, Manchester, United Kingdom

S42-S2 Strengthening Societal Resilience Through Policy Experimentation, Foresight and Participatory Approaches, D1, August 27, 2025, 4:30 PM - 6:30 PM

Future Scenario Building (FSB) is an essential method in foresight studies, particularly for addressing climate change. It enables the collaborative development of diverse, long-term visions of climate-resilient societies, which can support policy-making and social innovation. This paper presents the application of Future Scenario Building methodology within the Chios Living Lab to generate climate-related scenarios, highlighting factors that contributed to developing robust, grounded futures. Initially, the CLIMAS team created clear guidelines to support the use of the FSB methodology. These guidelines were then applied in two living labs—Chios and Vilnius—to build scenarios and identify areas for improvement. The process began with identifying key drivers, or influential factors affecting future outcomes. Various projections were developed for each driver and organized into a morphological box, from which consistent combinations were used to construct long-term (30-year) scenarios. The Chios lab focused on blending traditional and innovative approaches to climate adaptation, ecosystem health, and sustainable agriculture and tourism, considering both top-down policies and grassroots initiatives. Lessons learned emphasized the need for careful planning, inclusive participation, clarity of purpose, awareness of participant time limits, and efficient time management. Overall, the study highlights the value of structured, participatory scenario building in fostering climate resilience through informed, community-driven future planning.

The CLIMAS project toolbox for climate adaptation and resilience

Dr. Anna Maria Kotrikla¹, Dr Kyriaki Maria Fameli¹, Dr Amalia Polydoropoulou¹, Dr Floridea Di Ciommo², Dr Azizur Rahman³, Dr Aelita Skaržauskienė⁴, Dr Monika Mačiulienė⁴, Dr Gintarė Gulevičiūtė⁴

¹University Of The Aegean, Chios, Greece, ²CambiaMO, Madrid, Spain, ³Technovative Solutions, Manchester, United Kingdom, ⁴Vilnius Gediminas Technical University, Vilnius, Lithuania

S42-S2 Strengthening Societal Resilience Through Policy Experimentation, Foresight and Participatory Approaches, D1, August 27, 2025, 4:30 PM - 6:30 PM

CLIMAS is a project dedicated to fostering the transition to climate resilience. It aims to achieve this by providing an innovative, problem-oriented climate adaptation toolbox. This toolbox is co-designed with stakeholders, employing a value-based approach, design thinking methods, and citizen science mechanisms. The toolbox is intended to anticipate potential tensions, controversies, and dilemmas related to adaptation and resilience, thereby enabling empowerment and engagement strategies that lead to a society that is "resilient by design." Furthermore, CLIMAS incorporates an empirical component to test this toolbox and develop scientifically-based guidelines for policymakers. These guidelines aim to shift Climate Assemblies from technically-focused deliberations dominated by climate change experts to multi-stakeholder deliberations that prioritize solving dilemmas from a bottom-up, more societal, and value-based perspective. The outcomes of CLIMAS are expected to positively impact policy development and awareness-raising efforts, offering sustainable strategies to enhance policymakers' acceptance of citizen-led decisions. The CLIMAS toolbox comprises seven tools, including a citizen-collaborative future scenario building tool, a scenario prioritization tool, methodological guidelines for establishing and facilitating climate assemblies, and a citizen science tool to support deliberation processes. This paper explores the utility of these tools in supporting discussions within climate assemblies. It draws upon the experience gained from the co-creation, testing, calibration, and validation of the tools in the three living labs and three climate assemblies of the CLIMAS project. Climate assemblies and living labs are considered sustainable and effective tools for promoting deliberative democracy in climate policymaking.

Catalysing collective action through action-research on the margins of the just transition in the former mining region of León, Spain

Ms Nevelina Pachova¹, Ms Adriana Veran Casanova¹

¹RMIT Europe, Barcelona, Spain

S87-S2 Territorial Transitions: Exploring the Scene of Participatory Actions and Common, G4, August 28, 2025, 4:30 PM - 6:30 PM

Bottom-up collective action is increasingly suggested as an alternative to both top-down government-led interventions and market-based approaches to transformative change. Catalysing and sustaining collective action, however, is a challenging task, especially in cases, where such actions are: 1) not based on pre-existing communities as is often the case with individuals and groups on the margins of existing socio-economic structures, political processes, and cultural constructs and norms, and/or 2) take place in contexts with a limited culture of participatory planning, self-organization and collective action, as is often the case in centralised political systems and/or enterprise-based industrial monocultures. In this study we explore the challenges and opportunities for mobilizing collective action in the face of both of those constraints. We do so through a reflection on a process of action-research aimed to enable three types of groups on the margins of the transition to a post-carbon future in the former mining region of León, Spain, namely unemployed individuals, migrants and children. In doing so, we draw on recent research on commoning as a social practice but problematize the often idealised and non-political approach to presenting and promoting such practices as a way of informing both future practice and research. Specifically, we bring in notions of conflict and conflict resolution in community practice and highlight their importance as a means of transformative learning and change. The study is based on research conducted in the framework of the EU-funded BOLSTER project, which aims to inform the design of more inclusive governance frameworks in the process of decarbonization at the regional and EU scale.

The role of culture in the spectrum of the SDGs from a well-being perspective

Ms Mihaela Clincu¹, Dr. Alexandru Bănică¹

¹Alexandru Ioan Cuza University of Iasi, Iasi, Romania

S82 Well-Being Patterns and Disparities Across European Countries and Regions, F5, August 28, 2025,
4:30 PM - 6:30 PM

The premises of sustainable development within the current worldwide context involve integrating diverse socio-cultural perspectives and addressing the challenges of globalization. From promotion of economic growth through trade in cultural goods to advancement of fundamental freedoms and protection of natural heritage, cultural factors influence the Sustainable Development Goals (SDGs). By fostering inclusivity, protecting intellectual property and promoting cultural diversity, culture enhances an integrative approach of sustainable development, transcending a purely economic growth paradigm. The general aim of the paper is to identify and highlight the potential of culture as enabler of the SDGs, in a broader well-being framework. The paper is based on a quantitative analysis using seven socio-cultural factors that cover the economic, social and environmental dimensions of sustainable development and aligned with the UNESCO thematic dimensions for culture in the 2030 Agenda, Culture|2030 Indicators (UNESCO, 2019), environment and resilience, prosperity and livelihoods, knowledge and skills, inclusion and participation. The analysis is focused on the influence of the socio-cultural factors to the achievement of the SDGs at the level of 149 countries over the period 2010–2021. The selected variables include the SDG Index, Natural Resource Protection, Intellectual Property, Share in total exports of cultural goods, Share in total imports of cultural goods, Cultural Diversity, Largest Minority, Freedom of Expression and Belief and as control variables GDP, subjective well-being and social capital. The paper findings show that there is a significant link between the socio-cultural variables and the SDGs. However, the paper also stresses that when considering the SDGs, culture contributes, but not as a sole driver, while economic and well-being factors also play a role. Therefore, socio-cultural factors should not be considered isolated, but in a broader frame, from the traditional economic measures to more qualitative aspects of development. Moreover, the analysis of the potential of culture to sustainable development shall consider the patterns and disparities among low and high-income countries over time. In conclusion, the envisaged factors underline the relevance of socio-cultural dimension in the benefit of the SDGs and not least on the overall well-being. Given the multi-dimensional factors of influence, culture should not be perceived as an optional consideration in development policies but generate action tools to benefit long-term policy coherence and governance.

Achieving Spatial Justice: The Impact of Digital Technologies on Rural Communities

Dr. Krzysztof Janc¹

¹University Of Wroclaw, Wroclaw, Poland

G12-O4 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 29, 2025, 11:00 AM - 1:00 PM

Rural areas worldwide are increasingly affected by unfavorable development trends, often described as 'rural decline' or 'rural crisis.' These terms highlight the multifaceted, long-term challenges facing rural areas, amplified by the exodus of young people and changes in rural economies, resulting in ongoing social and economic transformations. Discussions of rural development emphasize the interdependence between rural and urban areas, which influence each other. Rural areas are often compared with urban areas, highlighting differences such as lower levels of development, limited access to resources, and slower growth.

In this context, the concept of 'spatial justice' is gaining attention, focusing on the fair distribution of resources and opportunities. A key aspect is the right of individuals to access, inhabit, and shape space, laying the foundations for a more equitable future. 'Rural spatial justice' aims to empower rural communities to shape their own futures, addressing inequalities and promoting local participation and governance. Digital technologies enhance engagement and should be prioritized in efforts to achieve spatial justice, ensuring equitable distribution of capabilities and opportunities across geographical areas.

The aim of this paper is to examine the role and significance of digital technologies in the functioning of rural institutions and communities. We seek answers to the research question based on the analysis of survey results conducted among representatives of institutions influencing rural development, as well as among rural residents.

It is particularly important to note how digital technologies are perceived as a factor in reducing the development gap between urban and rural areas. Most surveyed institutions believe that digital technologies have played a significant role in narrowing this gap in recent years. They highlighted notable progress in areas such as the accessibility of public services, residents' use of the internet for information retrieval, and the enhancement of residents' skills and competencies.

Similarly, responses from rural residents indicated a positive view, although they were more critical regarding the scale of improvements in various aspects of their functioning. Importantly, from the perspective of the study's objective, they rated access to services much lower than institutions did.

This research was funded by National Science Centre, Poland. Grant number 2020/39/B/HS4/00423.

From Declining Regions to Rising Populism: Unraveling the Complex Link between Rural Discontent, Democratic Satisfaction, and AfD Support in Germany

Mr Martin Refisch¹, Larissa Deppisch¹, Dr. Jörg Hartmann²

¹Thünen Institute of Rural Studies, Braunschweig, Germany, ²DIW Berlin, Berlin, Germany

S32 Subjective Well-Being and Geographies of Discontent in Rural Europe: Quantitative Insights from Survey and Spatial Data, Amph 2, August 27, 2025, 4:30 PM - 6:30 PM

Recent electoral results in Western democracies show a consistent pattern: right-wing populist parties perform best in peripheral, often rural regions. A prominent argument in public debate is that transformations as regional decline – manifested through deindustrialisation, demographic losses, and dismantling of facilities of general interest – undermines satisfaction with the government or even the political system, creating opportunities for right-wing populist parties to become outlets for rural discontent at the next election. Despite the pervasiveness of this narrative, empirical evidence for the presumed causal relationship remains limited.

Our study examines this relationship in Germany by investigating three questions: 1. What are the direct and indirect effects (via democratic satisfaction) of regional decline on AfD support? 2. Does regional decline increase AfD support to a greater extent among the more vulnerable segments of the population? 3. Which dimensions of regional decline have the strongest impact on AfD support?

We operationalize regional decline through population loss, economic deterioration, and infrastructure and public services degradation, combining longitudinal panel data from the German Socio-Economic Panel with a novel dataset tracking changes in public services, economic indicators, and demographic patterns at municipal and regional levels over 15 years.

Our preliminary findings confirm higher AfD support in declining regions but reveal that both overall and indirect effects of regional decline are relatively modest compared to other factors, particularly anti-immigration attitudes. This study advances the literature on geographical patterns of populist support by providing causal evidence while highlighting the need to consider multiple explanatory factors.

Perspectives on Developing a Living Lab in Iași, Romania. Collaborative Approaches and Governance Models

Ms Ioana-Maria Ursache¹, Ms Irina Clipca¹, Ms Ioana Bejenaru¹, Mr Manuel Foșalău¹, Ms Andreia Daniela Damian¹, Ms Georgiana Juravle¹

¹Alexandru Ioan Cuza University of Iasi, Iasi, Romania

S72 From Responding to Adapting and Transforming EU Cities, D12, August 27, 2025, 11:00 AM - 1:00 PM

Living Labs (LLs) are proposed as catalysts for urban innovation, to create a space where multiple stakeholders can collaborate, experiment, and develop solutions to pressing urban challenges. While such initiatives hold great potential, many struggle to remain active beyond their initial phase, raising important questions about the governance models that support their long-term sustainability. Here, we present the development of a Living Lab in Iași, Romania, by applying the Quadruple Helix framework, for collaborative urban governance and to address challenges through co-creation and stakeholder-driven innovation.

A multi-method approach combining policy analysis, resident surveys, and stakeholder consultations was utilised. Reviewing urban policies, council decisions, and strategic plans provided insights into existing governance structures and institutional priorities. Concomitant surveys with residents highlighted everyday urban challenges and expectations, ensuring that local needs are reflected in the co-creation process. Importantly, stakeholder consultations brought together representatives from the local government, academia, businesses, and the civil society, to explore strategies for effective cooperation, resource-sharing, and citizen engagement in the innovation process. By integrating these perspectives, a governance framework was developed, to sustain transparency, inclusivity, and long-term LL adaptability.

Our findings support the Quadruple Helix model as a key factor for LLs sustainability, highlighting the role of strong partnerships and citizen participation in LLs success. A governance framework is put forward, based on institutional flexibility, cross-sector collaboration, and long-term civic engagement, to ensure lasting LLs development. These results are of interest to the broader discussions on participatory governance, as well as they provide guidance for policymakers, urban planners, and researchers working to integrate LLs into sustainable urban development strategies.

Regional Disparities in Human Capital: A Classification of European Regions Based On Production and Stock of Human Capital

Prof. Yannis YPsycharis¹, Dr. Thomas Georgiadis¹, Dr Alina Schoenberg², Dr Vanessa Reisecker², Dr Dimitrios Ierapetritis¹

¹Panteion University, Athens, Greece, ²IMC Krems University of Applied Sciences, Krems, Austria
S67-S2 The Role of Higher Education Institutions in Unlocking Regional Innovation Potential and Overcoming Structural Disparities, G6, August 29, 2025, 2:00 PM - 4:00 PM

Available information and data on changes in population stock is a necessary, albeit not a sufficient condition to define brain drain. Information on the skills and educational level of the observed population flows is certainly needed in order to depict to what extent such flows have to do with high skilled population and can be, thereby, characterized as brain drain flows. Nevertheless, there is a limited availability of such information. Eurostat provides information on population by gender, age and region of residence (NUTS-2 & NUTS-3 level), albeit without any further disaggregation by educational level. This limitation means that any information for the magnitude of brain drain at regional cannot be directly obtained from any single dataset among the existing EU official data sources; implying the need for a methodology that could bypass the unavailability of the directly available statistical information for the measurement of brain drain at regional level.

Utilising data from two different European data sources the proposed paper aims at estimating indices that measure, first, the human capital production of a region and second, the human capital stock of a region. Then, the information of these two estimated sub-indices is summarised to a single statistical index (relative ratio) that allows for determining whether a region is a brain drain or drain gain region, in a comparable way across NUTS-2 European regions.

Proxies for proxilience. The implications of the 15-minute city in 15 Romanian cities

Mr Cristian-Manuel Foşalău¹, Dr Alexandru Bănică^{1,2}, Mr Oliver-Valentin Dinter^{1,3}, Dr Karima Kourtiti^{1,4}, Dr Corneliu Iaşu¹

¹"Alexandru Ioan Cuza" University, Iaşi, Romania, ²Romanian Academy, Iaşi Branch, Iaşi, Romania,

³Research Laboratory on Cities, Territories, Environment and Societies (CITERES), Polytechnic School, University of Tours, Tours, France, ⁴Open University, Heerlen, The Netherlands

S06-S2 From Vulnerability to Opportunity: Building Resilient and Liveable Cities through Sustainability and Digitalisation, G2, August 28, 2025, 9:00 AM - 10:30 AM

In the face of increasing urban challenges, the concepts of proximity and resilience have become central to sustainable urban planning. The term proxilience captures the synergy between these principles, emphasizing urban environments that ensure accessibility to essential services while enhancing adaptability to socio-economic and environmental challenges. The 15-minute city model serves as a framework for proxilience, promoting active mobility and reducing car dependency by ensuring access to work, education, healthcare, and recreation within short walking or cycling distances.

This paper explores 15 Romanian cities, assessing how accessibility to services can mitigate vulnerabilities and enhance urban resilience. Romania's urban landscape, shaped by post-socialist transformations, presents a unique context where cities face uneven development, economic shifts, and challenges in urban management. Large cities, such as Iaşi, Cluj-Napoca, and Timișoara, have emerged as regional economic hubs with diversified economies, while smaller cities like Reșița and Călărași struggle with economic restructuring and high vulnerability levels. Understanding these disparities allows for a nuanced analysis of how accessibility influences resilience.

The study employs a multi-scalar methodology. At the micro-scale, accessibility is measured using time-distances from population points to geolocated urban amenities, weighted according to Maslow's hierarchy of needs. At the meso-scale, resilience indicators from official databases are analyzed at the commune level (LAU2). The study investigates the correlation between accessibility and resilience, testing the hypothesis that increased accessibility reduces socio-economic vulnerabilities.

The statistical correlation analyses reveal significant relationships, indicating valuable ways in which higher accessibility to essential services and amenities is associated with enhanced resilience in urban communities. Specifically, the scores of the accessibility index demonstrated to a certain extent the levels of vulnerability to socio-economic challenges, environmental changes, and public health crises. This correlation suggests that improving access to resources such as healthcare, education, and self-actualisation facilities not only fosters greater community engagement but also provides the necessary tools to adapt and respond to challenges.

By introducing proxilience as an analytical framework, this study contributes to the discourse on sustainable urban development in Romania. Enhancing accessibility to urban services not only improves quality of life but also acts as a strategic tool for mitigating vulnerabilities, particularly in cities undergoing post-socialist transitions. The 15-minute city model, when adapted to local contexts, offers a transformative pathway for cities seeking to balance proximity and resilience in the face of contemporary urban challenges.

Tourism Acceptance Score: A validated scale to measure residents' sentiments and perceived tourism impact on their quality of life

Dr. Sabrina Seeler¹, Prof. Dr. Bernd Eisenstein

¹West Coast University Of Applied Science, Heide, Germany

S58-S1 Measuring the Social Impact of Tourism in the European Union, E12, August 27, 2025, 2:00 PM
- 4:00 PM

Strategies to maximise growth and tourists' insatiable demand for leisure experiences contributed to a sustained increase in international tourist arrivals prior to COVID-19 and a quick rebound once pandemic restrictions were lifted. This proves the tourism industry's resilience and while economic benefits have been reaped, social and environmental sustainability has been threatened in some destinations. Increasing imbalances between local communities and guests have led to tensions and the emergence of anti-tourism attitudes and movements. These ultimately jeopardise destination competitiveness and threaten their sustainable development. With the realisation that the well-being of the host community and residents' tourism acceptance are critical to the success of a tourism destination, interest in residents' perceptions and sentiments has grown. This interest has further been stimulated through ongoing overtourism discussions in academia as well as popular media. Despite the growing interest, empirical evidence remained scarce and there was limited research on comparative tools to monitor tourism acceptance over time. This research addressed these knowledge gaps and used a quantitative research approach to assess how Germans perceive the impact of tourism in their place of residence. In this context, a standardised measurement scale, the so-called Tourism Acceptance Score, was developed and two dimensions were proposed to monitor tourism acceptance over time. Since its introduction in 2019, the scale has been tested, methodologically refined, further developed and validated in more than 100 German destinations. The results show that there is no nationwide problem of tourism acceptance, but localised and temporal overtourism issues that require further attention in the future. The study also shows that Germans understand tourism as a driver of economic well-being, but not as a driver of personal quality of life. The need not only to measure the feelings of local residents, but also to ensure that tourism development is in harmony with the local community, can be further underlined by time comparisons in this study. This shows that tourism acceptance is declining significantly and that destination-specific strategies are needed to mitigate the (perceived) negative impacts and enhance tourism acceptance. The newly developed and validated Tourism Acceptance Score helps to fill existing research and practice gaps, provides important insights and thus makes a theoretical, methodological and practical contribution to tourism science and beyond.

FDI in uncertain times: did the UK's regional IPAs help protect inward FDI during the Brexit negotiation period?

Mr Juan Alvarez Vilanova¹

¹London School Of Economics, London, United Kingdom

G04-O4 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 29, 2025,
9:00 AM - 10:30 AM

Economic uncertainty is known to deter Foreign Direct Investment (FDI), and the Brexit negotiation period was no exception. Yet, regional institutions, particularly Investment Promotion Agencies (IPAs), are increasingly leveraging ecosystem-building strategies to embed multinational enterprises (MNEs) in priority sectors, potentially insulating FDI from adverse shocks. This paper investigates whether such strategies provided resilience during Brexit uncertainty, exploring a less-examined channel through which IPAs can grow FDI: not just by attracting new investment, but by strengthening embeddedness of established investors. Using a unique dataset on UK IPAs' sector-specific FDI strategies, I assess the impact of pre-2015 sector-targeting efforts on FDI outcomes during the 2016–2019 Brexit negotiation period. My findings reveal that pre-Brexit IPA sector-targeting was associated with a 13.9% increase in repeat investment value and a 19.3% rise in job creation within Knowledge-Intensive Services (KIS) sectors. However, no such effects were observed for manufacturing, likely due to the acute trade-related uncertainty in those industries. Moreover, and contrary to previous research into IPA impacts on FDI, no effects were observed for new FDI – that is, investments by MNEs that are new to the region – either in KIS sectors or manufacturing. This likely reflects how, in times of uncertainty, the ecosystem-embedding activities of IPAs – which by definition focus more on established MNE investors – may prove more significant than their role in supporting new MNE investors to enter a regional market. In the current global context of continued economic uncertainty and turbulence, these findings are particularly informative for policy-makers seeking to protect vital regional FDI.

A new perspective for the calculation of Ghosh-like forward multipliers

Dr. M. Carmen Lima¹, Dr. Ferran Sancho

¹Universidad Pablo De Olavide, Sevilla, España

G25-O2 Enriching Research and Policy Methods in Regional Science: Digital Tools, Artificial Intelligence, Participatory Methods, Mapping Techniques, Stakeholder Involvement, Amph 3, August 28, 2025, 4:30 PM - 6:30 PM

This paper focuses on a contribution to improve multisectoral national/regional analysis. The tools currently used to identify and measure forward effects in disaggregated multi-sector models are widely considered inadequate. While the multi-sector approach is broadly accepted, the Ghosh classical model (1958), commonly employed in these analyses, has faced substantial criticism for two primary reasons. First, the model fails to accurately represent the technological characteristics of a market economy. Second, it gives rise to conceptual inconsistencies in the relationship between value-added and output levels. To overcome these limitations, we propose a new and straightforward method, grounded in standard theory, for identifying and measuring forward effects. Although this approach departs from the Ghosh model, it retains the core principle of examining the dependence of output on value-added, while enabling wider insights for economic analysis and policy evaluation.

Slovak Cities in the Face of Climate Change: Assessing Vulnerability to Extreme Heat

PhD. Veronika Tóth¹, Prof. Miriam Šebová¹

¹Faculty of Economics, Technical University of Košice, Košice, Slovakia

G01-O5 Urban, Regional, Territorial and Local Resilience, B5, August 28, 2025, 9:00 AM - 10:30 AM

With over half the world's population residing in cities, urban centres face unique vulnerabilities due to the concentration of people and economic activities. While international and national efforts to combat climate change exist, cities play a crucial role in tackling this unprecedented challenge. Altered land cover surfaces in these areas exacerbate microclimatic phenomena, such as the urban heat island and reduced infiltration capacity leading to flash floods. Climate change is expected to have severe consequences for human health, social inequality, economic prosperity, ecosystems, and more.

In Slovakia, extreme heat poses a significant threat, particularly to vulnerable populations. As climate conditions worsen, adaptation becomes increasingly expensive. Efficient allocation of scarce resources becomes critical. This research addresses the need to prioritize adaptation measures in the most vulnerable cities. The study presents a composite index which incorporates climate, land cover, socioeconomic, and governance indicators and provides a comprehensive assessment of extreme heat vulnerability in Slovak cities. The selection of indicators was guided by the discourse on social equity in urban resilience planning, outlined e.g. in (Meerow et al., 2019). The need to address vulnerable groups, prioritize those with fewer financial resources, or account for citizen participation was reflected in the final set of relevant variables. The final database includes 15 partial indicators for each of the 141 Slovak cities.

The general methodological approach used in this study follows a widely used and accepted Handbook on Constructing Composite Indicators by the OECD (2008). The specific methodology applied for this case mimics the one used in the study dedicated to adaptation in Slovakia (OECD, 2023). The result identifies the most and the least vulnerable cities in Slovakia, which could be relevant information for decision-makers to provide informed adaptation measures for climate change.

Structural Transformation, Subjective Well-Being and Political Discontent in Germany's Coal Mining Regions

Mr Daniel Meyer¹, Ms Elisabeth Stürmer¹, Ms Stefanie Vedder¹

¹Federal Institute for Research on Building, Urban Affairs and Spatial Development, Cottbus, Germany

S32 Subjective Well-Being and Geographies of Discontent in Rural Europe: Quantitative Insights from Survey and Spatial Data, Amph 2, August 27, 2025, 4:30 PM - 6:30 PM

In the wake of the coal-phase out, European mining districts have gained significance in political and academic debates. Coal mining regions serve as compelling case studies, as they combine the broader challenges of rural areas – such as demographic decline and limited access to services – with the specific dynamics of post-industrial transformation, including compensatory public investments and the restructuring of industries, firms, and labor markets. While extensive research has examined the economic effects of structural change, relatively little is known about its impact on the social and political satisfaction of local populations. This study focuses on Germany's three lignite mining regions – the Lusatian, Central German, and Rhenish districts – to analyze how structural transformations have shaped subjective well-being and political discontent in these regions between 1990 and 2022. Methodologically, geocoded survey data from the German Socio-Economic Panel are combined with regional indicators from official statistics to assess how changes in spatial contexts and objective living conditions influence subjective well-being and political discontent, including overall life satisfaction, concerns about various life domains, and support for populist parties. Results suggest that while differences in life satisfaction have decreased over the past decades, people in coal mining regions remain less satisfied with their lives than those in the rest of the country. In particular, residents of the two East German mining regions report greater dissatisfaction with their income, heightened concerns about social cohesion and economic development, and a stronger propensity to vote for populist parties. The (preliminary) spatial analysis indicates that subjective well-being declines in regions experiencing demographic and economic decline, while spatial proximity to power plants and mining fields appears to have no significant effect. The presented research contributes to a broader monitoring system of subjective and objective indicators being developed at the German Federal Institute for Research on Building, Urban Affairs and Spatial Development. The system aims to monitor the socioecological transformation of Germany's lignite mining regions and provide a hub of information and data for researchers, policymakers, and the broader public.

Economic Complexity and Spatial Spillovers in Brazilian Microregions

Ms Lorena Brandão¹, Mr Julio Cesar Lopes², Ms Daniela Freddo³

¹Ministério da Fazenda, Brasília, Brazil, ²Banco do Brasil SA, Brasília, Brazil, ³Universidade de Brasília, Brasília, Brazil

G16-O2 Statistical And Econometric Methods of Urban and Regional Analysis, G1, August 27, 2025,
2:00 PM - 4:00 PM

This research examines regional development from the perspective of economic complexity. Through spatial econometric exercises with panel data, the primary objective is to understand the effects of economic complexity and its spatial spillovers on the variation of GDP per capita and the socio-economic development of Brazilian microregions between 2007 and 2016.

In summary, the Economic Complexity Index (ECI) is related to the diversity and ubiquity of the products that a particular country is capable of exporting. Intuitively, a locality will be more complex depending on its degree of diversification and the ubiquity of its products, considering that less ubiquitous products are more complex than those that are more ubiquitous (Hidalgo, 2021).

Originally, the ECI is calculated using foreign trade data for countries; however, this measure of economic complexity can also be used to assess the productive capacity of subnational entities. In this study, a Regional Economic Complexity Index (ECI-r) is utilised, calculated from data on the formal labour market of Brazilian microregions. As a methodological strategy, spatial econometrics is employed, as traditional econometrics does not incorporate the socio-economic interaction between heterogeneous agents of a system, nor their characteristics in space (Almeida, 2012).

The results indicate that economic complexity in Brazilian states and microregions does not change significantly over the analysed period. Additionally, regional inequalities exist that, in general, are not alleviated by gains in economic complexity. The results of the Exploratory Spatial Data Analysis (ESDA) show evidence of positive spatial autocorrelation for measures of economic complexity, GDP per capita, and socio-economic development.

The spatial models suggest that the economic complexity of a given microregion may be impacted (positively associated) by the economic complexity of neighbouring microregions. The results also suggest that economic complexity has a positive association with GDP per capita growth and socio-economic development indicators related to employment and income. This research advances by analysing both global and local spatial effects. Furthermore, it is highlighted that the use of panel data aids in the generalisation, reliability, and robustness of the results.

Structural change and convergence clubs using UMAP technique

Dr. Alicia Gómez-Tello¹, Dr. María José Murgui-García¹, Dr. María Teresa Sanchis-Llopis¹

¹University of Valencia, Valencia, Spain

G02-O3 Regional Growth Models, Competitiveness, and Convergence, B1, August 28, 2025, 9:00 AM - 10:30 AM

Since the Great Recession a new phase of divergence among the European regions started. This time divergence comes from a selected group of wealthiest regions moving away from the rest while most of the regions tend to converge or to get trap in the middle (Gomez-Tello et al., 2020; Ianmarino et al., 2019) or, more worrying, to lag behind in very low-income levels. While the number of regions getting trapped in low income growth soars (Diemer et al., 2022), regional disparities and social unrest unleash political polarization across Europe (Dijkstra et al. 2020; Sielker et al, 2021; Rodriguez-Pose et al., 2024). The success of the most prosperous regions seems to be linked to the start of a new structural change process. This time the dynamism comes from the specialization in high-tech manufacturing or knowledge-intensive services (Camagni et al., 2022; Valentini et al., 2023; Cutrini et al., 2023; Carullo et al., 2025). In this research we propose the use of a new dimensionality-reduction technique to identify convergence clubs taking into account a broader set of regional characteristics, among them industry mix at a 10 level NACE sectors. Specifically, we propose the use of the Uniform Manifold Approximation and Projection (UMAP) method, one of the state-of-the-art methods for dimensionality reduction and data visualization.

Rising Temperatures, Shifting Paradigms: Exploring the Interplay Between Climate Change and Tourism Dynamics in the EU NUTS-2 regions.

Prof. Angela Stefania Bergantino¹, Prof. Vicente Royuela Mora², Dr. Maria Grazia Cito

¹Università degli Studi Aldo Moro di Bari, Bari, Italy, ²University of Barcelona, Barcelona, Spain

S89-S2 Empirical Evidence and Policies for Sustainable and Resilient Cities and Territories, G4, August

29, 2025, 2:00 PM - 4:00 PM

This study assesses the impact of climate change on tourism demand across EU NUTS-2 regions, analysing projected trends through 2100 under different global warming scenarios. The analysis relies on an original dataset integrating multiple sources. The dependent variable, total nights spent by tourists, serves as a proxy for tourism demand, while the key independent variable, the Tourism Climate Index (TCI), quantifies climatic suitability for tourism activities. A categorical variable differentiates among six tourism typologies (urban, coastal, nature-based, rural, snowy mountain, and mixed tourism). The analysis employs a multi-way fixed effects log-log panel regression model to estimate the relationship between climate conditions and tourism demand, incorporating population, GDP per capita, and fixed effects as controls. Findings suggest that Mediterranean coastal regions, particularly in Greece and Italy, will experience reduced summer tourism demand due to declining TCI values. However, shoulder months may see an increase. Nature-based and rural tourism areas face declines in summer and autumn, while winter tourism suffers from reduced snowfall. Meanwhile, mixed-tourism regions may benefit, as tourists seek destinations offering diverse attractions. Overall, climate change is expected to reshape Europe's tourism geography, driving seasonal and regional shifts in demand. The anticipated decline in Mediterranean coastal tourism highlights the need for adaptive strategies to mitigate economic losses. At the same time, increasing demand in less climate-vulnerable regions presents opportunities for tourism development.

Financial Role of Real Estate Companies in Mexico: Reshaping the Urban Landscape

Mr Brice Barois^{1,2}, Mrs Leïly Hassaine-Bau^{1,3}

¹Higher School of Real Estate Professions (ESPI), ESPI2R, Marseille, France, ²LEAD, University of Toulon, Toulon, France, ³TELEMMé, Aix-Marseille University, Marseille, France

G22-O1 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, B6, August 27, 2025, 11:00 AM - 1:00 PM

In the first decade of the 21st century, Mexico underwent significant institutional reforms aimed at fostering the creation of financial entities within the stock market to support the rapid expansion of the real estate sector. Among the most prominent instruments to emerge from this process are Real Estate Investment Trusts (FIBRAs), which transform rental properties into financial assets traded on the stock market. Inspired by the American Real Estate Investment Trust (REIT) model, these investment vehicles play a crucial role in managing income-generating properties across key segments of the productive sector, including offices, shopping centers, hotels, and industrial buildings.

This article explores the role of FIBRAs in the broader phenomenon of financialized urbanization, where real estate assets are increasingly shaped by financial market dynamics rather than traditional urban planning mechanisms. By conducting a comprehensive census and geo-referencing analysis of more than 200 properties under FIBRA management, the study provides a detailed examination of the spatial distribution and economic implications of these investment portfolios. Specifically, it investigates their impact on the structure of the tertiary sector, particularly within commercial and office real estate.

The findings highlight two major trends. First, the geographic concentration of FIBRA properties in municipal zones with high socio-economic status underscores their function in consolidating elite service-oriented urban enclaves, reinforcing spatial inequalities within Mexican cities. Second, a closer look at the actors and investment strategies within the FIBRA market in Monterrey reveals how the political, economic, and social elite—who form a tightly-knit and homogeneous group—strategically maneuver to maintain control over the entire real estate value chain. This process exemplifies the ways in which financialization does not merely influence real estate markets but also intensifies patterns of corporate accumulation and dispossession, aligning with critical perspectives on urban financialization (Mbiba, 2017).

Ultimately, the study sheds light on how financial actors, urban space, and capital accumulation intersect in the Mexican real estate market, offering insights into the broader implications of financialized real estate for urban development and socio-economic stratification.

Skill relatedness and the green transition of European regions

Dr. Deyu Li¹, Dr. Benjamin Cornejo Costas¹

¹Utrecht University, Utrecht, The Netherlands

S88-S2 Twin Transition and its Unequal Geography, B2, August 28, 2025, 9:00 AM - 10:30 AM

The green transition has been in the core of EU policy agenda especially since the COVID-19 pandemic. However, existing studies of green transition based on patent data provided limited insights for further understanding whether the green transition is also a just transition that provide good job opportunities for achieving inclusive growth. A focus on jobs and skills is therefore important for better understanding the directionality of the green transition.

Recent studies on green jobs have applied the task-based approach in categorizing the jobs into green and non-green jobs based on the intensity of green skills or tasks in each occupation and compared the green jobs with other jobs in terms skill requirements and wages. Although this approach avoided defining green jobs at the occupation level, it failed to capture the complementarity between non-green skills and green skills.

This paper links green patents with the European classification of skills, competences, qualifications and occupations (ESCO) based on the semantic similarities using recent natural language processing methods. Doing so, we will be able to capture a broader set of skills that are related to the green transition. This is especially important because many non-green skills including many digital skills are expected to play an important role in facilitating further penetration of clean energy technologies to achieve the net-zero goal.

Furthermore, this paper combines data from the European Labor Force Survey and the online job advertisement data provided by the European Centre for the Development of Vocational Training (CEFEDOP) to calculate the availability of skills that are relevant for the green transition of European regions. This comprehensive mapping of the skills and jobs for the green transitions at the European regional level can provide important insights for policies that aimed at promoting sustainable and inclusive development.

The role of Micro and Small Enterprises in climate change transition – Brazilian Case

Dra. Ana Paula Paulino Da Costa¹, Dra Fernanda Gabriela Borger

¹Fipe - Economic Research Institute Foundation, Itapevi, Brazil

S74 Entrepreneurship, Innovation and Sustainable Development, Amph 3, August 29, 2025, 11:00 AM - 1:00 PM

Micro and small enterprises (MSEs) play a crucial role in Brazil's economy, accounting for 93% of active businesses, 52% of formal employment, and 42% of the national wage mass. In cities with up to 50,000 inhabitants, MSEs provide about 60% of formal employment and serve as a fundamental buffer against economic crises. However, they are particularly vulnerable to crises that limit people's mobility, such as sanitary and climate-related events. Despite their economic significance, MSEs remain on the periphery of climate transition policies, lacking access to technology, financing, and sustainable market opportunities. This study explores their potential contributions to climate adaptation and mitigation strategies, primarily based on the Ministry of Entrepreneurship, Micro, and Small Enterprises' (MEMP) directives. Furthermore, it proposes a transversal action plan to inform new public policies. The objective of this paper is to present a strategic development path for MSEs to navigate the climate change transition.

The research follows a case study methodology, structured in two phases. The first phase examines secondary data from public sources and academic studies to assess the profile of MSEs, their economic relevance, and their engagement with sustainability.

This study underscores the importance of integrating MSEs into value chains for a low-carbon economy, reinforcing their role in innovation and resilience-building. The second phase aims to develop a comprehensive strategy incorporating stable policies, financial incentives, and capacity-building programs—all crucial for unlocking the full potential of MSEs in sustainable development. The findings advocate for an inclusive approach that recognizes MSEs as key contributors to climate resilience and economic transformation.

Are all non-urban places attractive enough to work from home?

Mr Fernando de la Torre Cuevas¹, Mr Bart Los²

¹University of Santiago de Compostela, Instituto de Estudos e Desenvolvimento de Galicia (IDEGA), Santiago de Compostela, Spain, ²Faculty of Economics and Business, University of Groningen, Groningen, Netherlands

S16 Changing Patterns Of Spatial Mobility During The Twin Transition, A1, August 27, 2025, 4:30 PM - 6:30 PM

The rise of working from home (WFH) is arguably one of the most notable effects derived from the digital transition. Whether WFH arrangements correlates with urban sprawl remains an open question, let alone if this relationship holds universally across space. In this paper, we aim to study which features make non-urban areas attractive enough for remote workers to move in, while keeping their jobs in the cities. We conjecture that with WFH agreements individuals are more likely to work in a city and live in a non-urban area. But we also hypothesise that not all non-urban places are as attractive for remote workers. Using individual census data from a selection of European Union (EU) countries, we estimate a multinomial regression model relating individual residential-job location choices to the probability of WFH arrangements. Local amenities are our key control variable. We combine individual census data from a selection of European countries with Eurostat's skill-occupation matrices that allow us to circumvent data scarcity on WFH agreements. As a result, we provide a test on whether the contribution of WFH arrangements to urban sprawl is spatially invariant. We also identify which amenities correlate with the attractiveness of places for workers choosing WFH arrangements.

Spatial Spillovers in Functional Crop Diversification and implications for productivity - (EPAINOS Paper)

Ms Eleanor Johansson¹

¹Swedish University Of Agricultural Sciences, Uppsala, Sweden

YSS1, G1, August 28, 2025, 11:00 AM - 1:00 PM

This study examines the spatial spillover effects of functional crop diversification on farm-level total factor productivity (TFP) in Sweden. Functional crop diversification is the practice of cultivating crop groups with distinct ecological functions (de Bello et al., 2010). It has been shown to enhance ecosystem services such as nutrient cycling, biological pest control, and soil health (Bommarco et al., 2013). While research has established the direct benefits of crop diversification for yield stability and ecosystem services (Isbell et al., 2017; Watson et al., 2017), its diffusion through spatial networks and impact on economic performance is less explored. This study investigates whether there is a particular type of knowledge associated with functional crop diversification that spreads across farms and how these spatial spillovers affect farm-level total factor productivity.

The empirical analysis is based on a panel dataset of roughly 30,000 Swedish crop farms from 2009 to 2021. The dataset integrates farm level crop information from the Swedish Land Parcel Identification System (LPIS), farm financial data from Statistics Sweden (SCB), and geospatial coordinates to define spatial relationships. First, TFP is estimated using a standard production function approach, incorporating land, capital, labour, and intermediate inputs (Rovigatti and Mollisi, 2018). Second, the estimated TFP values serve as the dependent variable in a spatial Durbin model. This allows for the identification of both direct effects from a farm's own crop diversification, and indirect effects from the diversification of neighbouring farms on productivity (Vroege et al., 2020). Following Nilsson et al. (2022), functional crop diversity is quantified using a decomposition of the Shannon diversity index where crops are categorized into nine ecological functional groups. The spatial structure is modelled using inverse distance weighting, where the impact of neighbouring farms decreases with distance.

This research contributes to the understanding of agricultural knowledge spillovers by providing empirical evidence on how diversification strategies adopted by one farm influence the productivity of its neighbours. By explicitly modelling spatial externalities, the findings have important implications for policy. If there are positive spillover effects, place-based interventions such as subsidies for functional diversification or knowledge-sharing initiatives could not only enhance individual farm performance but also generate positive regional spillovers (Altieri et al., 2015; Bowles et al., 2020). By bridging ecological and economic perspectives, this study offers new insights into how diversification spreads within agricultural communities and its broader impact on economic resilience.

Policies and Measures to address energy poverty in the greek regions

Ms Evanthia Michalaki¹, Prof. Vasiliki Delitheou²

¹Panteion University of Social and Political Sciences, Athens, Greece, ²Panteion University of Social and Political Sciences, Athens, Greece

G11-O1 Public Policy Assessment: Inclusiveness and Poverty Alleviation Across Space; Equality in Opportunities and Territorial Justice, A4, August 28, 2025, 4:30 PM - 6:30 PM

Energy poverty is emerging as a complex socioeconomic phenomenon, affecting millions of households worldwide. It describes the situation in which a household is unable to access basic energy services such as heating, cooling, cooking, lighting, and the use of household appliances.

This paper analyzes descriptively and quantitatively, using the Low Absolute Energy Expenditure (M/2) indicator, the High Share of Income in Energy Expenditure (2M) indicator, the Inability to keep home adequately warm (IKHW) indicator, the Arrears on utility bills (AUB) indicator, and the Presence of leak, damp, rot in the dwelling indicator, the phenomenon of energy poverty in the Greek regions.

It also examines the main policies that have been developed and implemented to combat it. The objectives of the paper include investigating the factors that contribute to the emergence of energy poverty in the Greek regions, identifying the strategies and policies that are implemented to address it, and formulating solutions to reduce it.

The contribution of the article lies in the analysis of existing policies and programs implemented at the regional level, such as subsidies for home energy upgrades and heating allowances. The applied method includes the study of national and EU policies to reduce energy poverty, as well as the evaluation of data from subsidy programs and home energy upgrade programs. The data used comes mainly from the Ministry of Environment and Energy and the Hellenic Statistical Authority, such as the anonymized microdata of the Survey of Income and Living Conditions of Households (SILC) in the regions of Greece.

Regional Pathways to Twin Transitions: Regional Capabilities, Technological Diversification, and Policy Implications for Green and Digital Convergence in Europe.

Dr. Oscar Romero Goyeneche¹, [Dr. Deyu Li](#)¹, Prof. dr. Ron Boschma¹

¹Utrecht University, Utrecht, The Netherlands

S80 Challenges and Opportunities for EU Growth and Convergence: Climate Change, Digitalization, and Knowledge Diffusion, F5, August 29, 2025, 11:00 AM - 1:00 PM

To address interconnected social, economic, and environmental challenges, the European Commission has introduced the Twin Transitions strategy, which integrates the Digital Strategy with the Green Deal. This initiative aims to foster economic growth, boost competitiveness, and accelerate progress toward sustainability goals. The Commission underscores the importance of ensuring that all European regions benefit from the strategy. However, regional disparities in the diversification of innovation portfolios may hinder some regions' ability to implement it effectively (Bachtrögler-Unger et al., 2023). Thus, the inquiry is how digital, green, and twin technologies are developing across European regions, and whether regions with established specialisations in green or digital technologies have the potential to also advance twin technologies.

Using the framework of regional diversification and relatedness (Balland et al., 2019; Pinheiro et al., 2022; Rigby et al., 2022), the existing scientific and invention landscape for green and digital technologies is mapped across European regions. The analysis uses patents as indicators of invention and scientific publication as a proxy of scientific knowledge production. The relatedness framework enables the identification of regional capabilities and the potential to integrate green and digital technologies (Bachtrögler-Unger et al., 2023). Regions highly specialised in green and digital technologies are highlighted alongside regions where twin technologies are likely to emerge. The analyses focus on identifying common building blocks in the patenting and publishing of green and digital technologies. Co-citation networks are used to identify cognitive linkages between green and digital technologies, enabling the identification of twin scientific publications and patents. Following this, digital, green, and twin capabilities in publishing and patenting are mapped and compared against social, economic, and environmental indicators, including GDP, unemployment rates, and greenhouse gas emissions. This comparison provides a contextual framework for interpreting the results. Additionally, the cross-collaboration between regions is evaluated to identify regions with country-level or European-level collaboration. Lastly, the analysis incorporates temporal dynamics and mapping regional trajectories. For instance, regions transitioning from green specialization to twin specialisation (green and digital) are identified, as well as regions that attempted to develop green and digital capabilities but did not succeed.

The Integration of Human Capital Into Romania's Strategic Documents: Implications for Regional Science

Ms Daniela-Andreia Damian¹, Mr. Bogdan-Constantin Ibănescu¹, Mr. Mihai Bulai¹, Mr. Corneliu Iațu¹

¹Alexandru Ioan Cuza University of Iasi, Romania, Iasi, Romania

G24-O1 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 27, 2025, 4:30 PM - 6:30 PM

In recent decades, the study of human capital has evolved significantly, becoming a central pillar in areas such as labor economics, economics of education, human resource management, economic development and sustainability (Blair, 2011).

Beyond empirical evidence, human capital plays a crucial role in decision-making. In Romania, the post-communist period has marked a significant transition from a centralized to a more decentralized society. This change was not only about the orientation towards a knowledge economy, but also a paradigm shift, where the individual is no longer perceived strictly as a factor of production, but as a strategic resource for development. However, the decision-making process in Romania continues to be fragmented, lacking a unitary and coherent vision of the priorities and real needs of the territory.

Given that, the aim of this paper is to analyze how the concept of human capital and related terms are being perceived in the strategic documents adopted in Romania in the fields of education, public administration, social and environment. A number of 15 strategies adopted in Romania in the fields of education, public administration, social and environment, divided into two distinct periods: pre-2020 and post-2020 will be analyzed. This temporal division is based on the Multiannual Financial Framework (MFF), reflecting both the economic and political context of the previous years and the adaptations imposed by recent events, in particular the global pandemic.

The methodology applied for this research combines quantitative and qualitative approaches, through MAXQDA software, which facilitates a detailed analysis of textual data from policy documents in this case. In particular, the MAX Dictio module will be used to perform a frequency (occurrence) analysis, with a special focus on the term human capital and its related concepts. Furthermore, a coding system will be applied to identify and classify the occurrences of these terms within the 15 strategies, thus aiming to establish the links and interferences between human capital and other relevant concepts in its domain and beyond.

The preliminary results of the analysis of the 15 strategies indicate significant differences between the two periods, both in terms of the frequency of the term human capital and in the context in which it is used.

In this regard, the study intends to provide a basis for understanding how human capital is perceived in national policies and how national policies can be adjusted to support balanced and sustainable development of all regions.

Ethnography in Times of Uncertainty: A Comparative Analysis

Mr Ioannis Chinis¹

¹Aristotle University Of Thessaloniki, Thessaloniki, Greece

S42-S1 Strengthening Societal Resilience Through Policy Experimentation, Foresight and Participatory Approaches, D1, August 27, 2025, 2:00 PM - 4:00 PM

As we move through the third decade of the 21st century, we find ourselves facing a multifaceted crisis. Human-induced climate collapse, increasingly frequent economic crises, pandemics, intensifying social inequalities, and the erosion of trust in established institutions and narratives are shaping an environment of widespread uncertainty.

At the same time, the integration of new digital technologies is driving a profound restructuring of everyday life, as a vast array of digital information penetrates the most personal aspects of our social existence, creating a continuum of hyper-connected and ever-accelerating daily experiences.

In response, resilience has become a focal point in public discourse, emerging as a set of ideas and techniques to address these uncertainties. While local communities play a crucial role in resilience-building, those most affected are often excluded from shaping relevant policies. To understand their collective agency in this context, we must adopt qualitative methodologies that recognize individuals as part of open, complex systems—interwoven with bodies, objects, information, ideas, practices, and environments, as carriers and expressions of all possibilities and alternatives.

This study explores ethnographic methodologies that can support the investigation of emerging collective initiatives in times of crisis. By tracing the evolution of ethnography and engaging with state-of-the-art approaches, it conducts a comparative analysis of existing literature to experiment with novel research methods, in order to experiment with novel ways of approaching emerging collective initiatives in times of crisis.

In a world increasingly defined by computational ubiquity, the scope of research must inevitably expand online to encompass information flows that are controlled, disrupted, or instrumentalized, yet also resist codification, shaping social dynamics. Informative posts, comments on photographic documents, and short videos serve as instant bridges of information, accessible at any moment on our mobile screens.

This drastically shortens the time required to achieve the primary goal of ethnographic studies—the production of “thick descriptions”—while facilitating a deeper understanding of the processes and patterns that drive experimentation, knowledge creation, and the emergence of new ideas and realities.

Air quality and health: the effects of green policies in European cities and regions

Dr. Enza Simeone¹, Dr. Alessia Casamassima², Prof. David Castells-Quintana³

¹Department of Economics, Social Studies, Applied Mathematics and Statistics, University Of Turin, Turin, Italy, ²Florence School of Regulation, European University Institute, Florence, Italy,

³Department of Applied Economics, Universitat Autònoma de Barcelona, Bellaterra, Spain

G08-O1 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, Amphitheater I -

SAKIS KARAGIORGAS, August 27, 2025, 11:00 AM - 1:00 PM

In recent years, urban sustainability initiatives have gained increasing attention as regions and cities seek to mitigate environmental degradation and improve public health. In this paper, we study the connection between air pollution, health outcomes and mortality in European cities and regions. Specifically, we analyze the extent to which mortality may have increased due to the concentration of air pollutants such as particulate matter (PM 2.5), nitrogen dioxide (NO₂) and ozone (O₃). Additionally, we analyze the potential impact of Smart Cities projects on the evolution of air pollution across European cities and regions. To do so, we build a rich panel dataset, merging information at the NUTS 2 and NUTS 3 level in Europe, including information for 642 large cities in Europe, over the 2013-2022 period. We draw on air quality monitoring datasets from European Environment Agency (EEA), mortality statistics from Eurostat, and policy reports from Smart Cities Marketplace to provide a comprehensive understanding of the environmental and health transformations associated with these urban initiatives.

In addition to assessing changes in air quality, we examine the corresponding effects on public health, looking at the deaths number by age group which are strongly linked to air pollution exposure. By comparing mortality in "Smart Cities" with those in non-participating urban areas, this study seeks to identify whether the adoption of these projects has led to measurable changes in mortality. Using our rich dataset, we implement several panel data techniques, including a difference-in-difference specification to identify the impact of the implementation of Smart Cities projects.

Our findings aim to contribute to the growing dialogue on sustainable urban governance by assessing the effectiveness of EU Green City projects in reducing air pollution and enhancing public health. The results can offer valuable insights for policymakers, urban planners, and public health officials, emphasizing the need for expanded implementation of smart, green initiatives in urban settings.

Ultimately, this study underscores the critical role of sustainable city policies in fostering healthier and more resilient urban environments across Europe.

Spatial Interdependencies Between Active Labor Market Policies and Labor Market Outcomes: The Case Study of Czechia - (EPAINOS Paper)

Ms Kristýna Sauerová¹

¹Charles University, Prague, Czech Republic

YSS3, G3, August 28, 2025, 11:00 AM - 1:00 PM

Unemployment is a socio-economic phenomenon that negatively affects not only the economic but also the social environment of territorial units. If a region is affected by high unemployment over a long period of time, eliminating the effects of this phenomenon imposes significant costs on national and regional policies. The effects of unemployment have made this topic a traditional subject for a wide range of scientific disciplines, including social geography. At the same time, it has already been empirically demonstrated that regional unemployment depends on a variety of factors that give rise to it, but these factors vary from place to place and cannot be defined as universally valid. Similarly, the unemployment path is closely linked to the evolution of economy, as the labour market responds to global, national and regional trends. Countries are tackling regional differences in unemployment rates through employment policy instruments. In this context, Czechia is characterised by very stable spatial patterns of low and high unemployment. Especially, structurally affected regions characterised by high unemployment rates present a challenge that cannot be effectively solved. The question is how effective national employment policy instruments are. This paper examines the relationship between the resources spent on active employment policy and labour market outcomes in Czechia. The study uses quantitative methods to uncover the relationship between the funds spent and the evolution of the unemployment rate. Specifically, the relationship is measured using data for the unemployment rate and the amount of funding provided for employment policy, namely the data for active employment policy from the European Social Fund for the period 2014-2020. In order to reveal the causal relationship, cross-regional sequencing is used, which allows to better separate the actual impact of the selected phenomenon on the outcome, and the impact that spontaneous change has. Furthermore, the spatial regression method is used in order to reveal other variables (population structure, geographical location, economic structure of the region) that affect the value of unemployment in the regions. The analyses are performed on detailed units of administrative districts of municipalities with extended powers, which makes it possible to analyse a micro-regional perspective that would remain hidden when performing analyses on higher administrative units. The analyses have shown that, surprisingly, there is no relationship between the funding provided and the unemployment rate; the influence and significance of the individual factors studied on the long-term stability of regional unemployment is then examined using regression methods.

Using discrete choice modelling to investigate individual preferences for sustainable urban mobility and the role of mobility hubs

Prof. Roberto Patuelli¹, Dr Fanny Carlet¹, Prof. Angela S. Bergantino², Dr Alessandro Gardelli², Dr Mario Intini²

¹Alma Mater Studiorum - Università di Bologna, Rimini, Italy, ²Università degli Studi di Bari Aldo Moro, Bari, Italy

S90-S2 Transport Policies Shaping Sustainable Cities and Territories, Amphitheater II - SAKIS
KARAGIORGAS, August 29, 2025, 11:00 AM - 1:00 PM

Urban mobility is a key aspect of sustainable transportation, with growing attention to integrating local public transport with shared mobility options such as bikes, scooters, mopeds and cars. This integration can significantly improve first-mile and last-mile connectivity, making urban mobility more efficient. A crucial element in this integration is the development of mobility hubs, physical locations designed to facilitate seamless connections between different transportation modes. While shared mobility and mobility hubs are now studied from different points of view at the international level, research on this topic in the Italian context remains limited.

To address this gap, we are conducting a survey on mobility habits and patterns in 12 major Italian cities. This study will analyse urban commuting behaviour and assess interest in mobility hubs, including their optimal design. Our questionnaire examines key factors influencing the projected use of mobility hubs, including individual socio-demographics, travel preferences, and attitudes toward public transport and micromobility. By applying discrete choice modelling techniques, we aim to understand the relationship between public transportation and shared micromobility within an integrated multimodal network.

This research is the first in Italy to systematically explore the intersection of shared mobility, mobility hubs and user characteristics on a national scale. The collected data will provide insights into the conditions that encourage shared mobility adoption, and on the factors that can enhance mobility hub usage. Additionally, the dataset – encompassing socio-economic indicators, travel behaviour and user preferences – will be stored in a open data platform for future research and policy development.

Exploring Efficient Allocation Strategies for NextGenerationEU Funds

Dr. M. Carmen Lima¹, Dr Jorge Manuel López-Álvarez, Ángela Serrano-Gómez

¹Universidad Pablo De Olavide, Sevilla, España

G20-O5 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 29,
2025, 2:00 PM - 4:00 PM

This study develops a multisectoral model to assess the implications of different allocation rules of the NextGenerationEU funds on sectoral and aggregate output, as well as employment levels in Spain. By examining the existing allocation framework established for Spain, we conduct a counterfactual analysis using input-output methodology to simulate the potential outcomes of these variables had the distribution mechanism mirrored that of other EU countries. The findings reveal significant insights for regional economic policy, indicating that alternative allocation strategies can markedly influence economic performance across various sectors. Furthermore, our analysis establishes a ranking of efficient fund distribution mechanisms, providing a framework that can be extrapolated to other regional or local contexts. By shedding light on the complexities of fund allocation, this research equips policymakers with critical insights for optimizing resource deployment to enhance economic outcomes. Ultimately, this study contributes to the broader discourse on effective fund management within the EU, offering a roadmap for future allocations aimed at maximizing benefits across diverse regions.

Short-term rentals and overtourism: an analysis on Italy

Mr Massimo Moltoni¹

¹Gran Sasso Science Institute, L'aquila, Italy

G15-O5 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness, Quality of Life, B6, August 29, 2025, 11:00 AM - 1:00 PM

Sharing platforms, and those devoted to short-term rentals (such as Airbnb, whose market capitalization exceeds 24 billion \$), could affect a wide range of socio-economic variables like inequality and financial hardship as well as impacting city livability, housing availability and affordability, gentrification, inhabitant displacement. Also, they could generate a sense of alienation in the most touristified neighbourhoods.

One of the channels through which this happens is very likely to be that of overtourism, which is by definition an unmeasurable phenomenon mainly covering social, environmental and cultural dimensions.

The majority of studies on this field show either positive externalities or negative ones, with the former coming almost exclusively from Airbnb own reports.

As for the latter, various studies show that it creates an upward pressure on both rental and house prices, as well as generating noise, nuisance, traffic, parking and waste management issues while being able to produce positive externalities within the neighbourhood in terms of touristic employment (restaurants, bars, etc.).

Furthermore, spatial concentration of Airbnb depends on some neighbourhood characteristics, such as the presence of public transport systems, as well as of amenities generally specific, in the case of Italy, to some major, touristic, municipalities or certain local labour markets.

As of 2023, Italy records 944421 Airbnbs covering almost half (4077) of total municipalities. In particular, 21276 are located in Florence, 48690 in Rome and 13940 in Venice. Among these cities, Venice displays the highest occupancy rate as well as the highest average daily price and the highest monthly average revenue.

Examining the Role of Crowdfunding in Attracting Venture Capital: A Comparative Analysis of Rural and Metropolitan Areas in Europe

Dr. Vincenzo Buttice², Dr. Massimo Colombo², Francesca Tenca³, Dr. Simone Sasso¹

¹European Commission - Joint Research Centre, Sevilla, Spain, ²Politecnico di Milano, Milan, Italy,

³Università degli Studi del Piemonte Orientale, Vercelli, Italy

S61-S1 Innovation, Entrepreneurship and Industrial Dynamics in Rural Areas, Amph 3, August 27, 2025,
2:00 PM - 4:00 PM

This study investigates the relationship between crowdfunding activity and subsequent VC investment within the same geographical area. We argue that crowdfunding serves as both a signal and a catalyst for local entrepreneurial ecosystems by attracting investor attention and raising awareness among entrepreneurs about the fundraising potential of a given area. This dynamic increases both the supply and demand for financial capital, leading to a rise in VC activity following crowdfunding. However, the extent of this effect is contingent upon the characteristics of the local entrepreneurial ecosystem. In well-developed ecosystems, crowdfunding success translates into increased VC investment, whereas in less developed regions, structural barriers may prevent this outcome. Leveraging investment data at the Local Administrative Unit (LAU) level, our analysis reveals that crowdfunding activity is positively associated with subsequent VC investment in urban areas. In contrast, in rural regions, the relationship is negative. These findings underscore the importance of geographic context in shaping the role of crowdfunding within entrepreneurial finance and regional development.

Transferring local knowledge to broader rural communities: Analyzing development strategies with large language models and keyword co-occurrence

Prof. André Torre¹, Dr. Tongjing Wang¹, Prof. Maryline Filippi^{1,2}

¹Université Paris-Saclay, INRAE, Palaiseau, France, ²Bordeaux Sciences Agro, Bordeaux, France

S12 Place-Based Innovation of Cultural and Creative Industries in Non-Urban and Peripheral Areas:

What Roles for Actors and Policies?, G6, August 27, 2025, 11:00 AM - 1:00 PM

Cultural and Creative Industries (CCIs) hold significant yet underutilized potential for development in rural and non-urban areas. Beyond contributing to economic growth, they also strengthen social cohesion, drive technological innovation, and support youth retention. However, even though the European Union has backed numerous bottom-up initiatives in this sector, synthesizing these experiences into structured, evidence-based policies remains a complex endeavor. An important reason is that these initiatives are inherently localized and small-scale nature, which it difficult to transfer successful practices across regions, thereby complicating efforts to establish coherent policy frameworks.

To address this challenge, this paper aims to identify transferrable principles that accommodate diverse regional contexts while respecting local specificities. We propose a mixed-method approach that combines the semantic understanding capabilities of large language models (exemplified by ChatGPT) with network analysis. This method is applied to 1,159 local initiatives supported by the European Union's Common Agricultural Policy (CAP) Network. These projects are nominated by Member States and collected by the CAP Implementation Contact Point into a "Good Practices" database, which represent successful rural development efforts across a wide range of contexts. Project selection follows the IN SITU project's definition of CCIs, which underscores the importance of cultural expression.

Our approach involves extracting each project's core elements as keywords, then analyzing their co-occurrences to uncover both cross-project commonalities and unique contextual features. This process preserves critical local nuances while enabling system-wide comparisons and highlighting potentially transferable insights. This study underscore the importance of tailored strategies for rural development and align with existing theoretical frameworks. Moreover, it demonstrates the potential of the proposed method for systematically comparing text data across diverse contexts.

Assessing Energy Vulnerability in the EU: A Capability-Based Energy Vulnerability Index (EVI)

Dr. Giuseppe Pellegrini Masini¹, Dr Maria Rosaria Seminara¹

¹ENEA Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Roma , Italy

S62 A Changing World: Balancing Economic Growth with Sustainable Energy Transitions, E12, August 29, 2025, 11:00 AM - 1:00 PM

Energy poverty continues to affect millions of households across the European Union, underscoring the need for holistic measures that capture more than just the cost of heating or electricity. Traditional indicators frequently focus on economic aspects but overlook how limited energy access can harm health, restrict social participation, and reduce overall well-being.

The Energy Vulnerability Index (EVI) introduced here addresses this complexity by distinguishing between “maintenance” indicators—covering basic needs like adequately heating a home—and “growth” indicators, such as the ability to invest in energy-efficient solutions or reliable transportation. Notably, the index also incorporates transport energy, recognizing that families in areas with scant public transit may face high vehicle costs, further increasing their vulnerability.

When applied to EU Member States, the EVI reveals substantial differences in how energy poverty manifests. Some countries struggle to meet even minimal household energy requirements, while others maintain decent living standards yet fail to promote long-term improvements. In several regions, “double energy vulnerability” emerges when households must devote resources not only to domestic needs but also to transport, severely constraining opportunities for education, employment, and social engagement.

From a policy perspective, the EVI highlights the importance of targeting both short-term relief—like subsidies and bill assistance—and long-term structural interventions. These can include building retrofits, enhanced public transport, and comprehensive support schemes that reduce reliance on personal vehicles. Additionally, the index underscores how a fair energy system depends on inclusive decision-making processes and recognition of differing household needs.

By situating energy poverty within a broader capability framework, the EVI sheds light on the multifaceted obstacles households confront. Such an approach not only identifies which regions or demographic groups face the greatest hardships but also illustrates how and why deeper vulnerabilities arise. Ultimately, the EVI offers policymakers and stakeholders a more nuanced lens through which to craft interventions that ensure affordable, reliable energy for everyone.

High-Speed Rail (HSR) and Economic Development: A Counterfactual and Spatial Analysis, evidence from Italy

Full Professor Angela Stefania Bergantino¹, Dr. Giulio Fusco¹, Assistant Professor Mario Intini¹

¹University of Bari, Bari,

S89-S2 Empirical Evidence and Policies for Sustainable and Resilient Cities and Territories, G4, August 29, 2025, 2:00 PM - 4:00 PM

The relationship between public transport investments and economic and territorial development has been a subject of discussion among researchers and policymakers for several years (Mikessel et al., 2015). However, it remains a widely debated and underexplored topic, particularly in light of continuous technological innovations that have transformed both the modes and capacities of transport systems (Acheampong et al., 2022).

While extensive literature has demonstrated that increasing transport infrastructure and investments in the transport sector can enhance productivity and stimulate regional growth (Istadt et al., 2012; Chen, 2019; Bergantino et al., 2025), the actual effects of these interventions remain complex and context dependent.

Among various transport initiatives, the deployment of High-Speed Rail (HSR) services in recent decades has arguably been the most significant innovation in intercity travel worldwide. HSR systems are designed to reduce travel times and improve regional accessibility, aligning with previous literature that suggests enhanced connectivity fosters regional development and boosts productive activities. However, the magnitude and direction of these anticipated effects remain contested (Chen & Vickerman, 2017). One key concern is that HSR may primarily benefit already prosperous and economically dynamic cities, potentially exacerbating regional inequalities by diverting economic activity away from smaller or less connected areas.

In this context, the objective of this study is twofold. First, we assess the impact of HSR on business performance using municipal-level data. Second, we analyze the spatial distribution of these effects to investigate the presence of a "siphoning effect" (Niu et al., 2020), which could disadvantage poorer or more remote municipalities located farther from HSR stations.

To address these research questions, we employ a counterfactual approach to estimate the causal impact of HSR introduction on firm performance in Italy. Furthermore, we conduct spatial analysis to examine how these effects propagate across different municipalities. Our findings will contribute to the ongoing debate on whether HSR serves as a catalyst for widespread economic growth or primarily benefits already thriving urban centers at the expense of peripheral regions.

Are Special Economic Zone (SEZ) Policies Effective? An Empirical Analysis on the Transport and Logistics Sector

Full Professor Angela Stefania Bergantino¹, Dr. Giulio Fusco¹, Assistant Professor Mario Intini¹

¹University of Bari, Bari,

S89-S1 Empirical Evidence and Policies for Sustainable and Resilient Cities and Territories, G4, August 28, 2025, 4:30 PM - 6:30 PM

Monetary incentives for specific geographical areas have been implemented and regulated globally to stimulate economic growth in less developed regions, often yielding mixed and varied outcomes. Recently, Italy has launched similar initiatives to invigorate the economy of its southern regions, which are marked by significant territorial and economic gaps/disparities. This study focuses on the impact of Special Economic Zones (SEZ) in Puglia, a southern Italian region designated for these policies, using a Matching Difference-in-Difference (Matching DiD) analysis to assess their effects. Although the transport and logistics sector is formally excluded from SEZ incentives, one of the key requirements for establishing an SEZ in Italy is the inclusion of at least one port area. This paper assesses the indirect impact of SEZs on the transport and logistics sector. The findings indicate positive and significant effects on firm revenues, highlighting the potential of SEZs to serve as effective tools for revitalizing economically underdeveloped areas.

Driving Green Transformation Through Eco-Innovations: The Cases of Silesia and Eastern Greater Poland

Dr. Michał Męczyński¹

¹Adam Mickiewicz University, Poznań, Poznań, Poland

G03-O7 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 29, 2025, 2:00 PM - 4:00 PM

The green transformation and technological development are key drivers of efforts to mitigate global warming, biodiversity loss, and environmental pollution. However, the transition to a new energy paradigm—based on innovative green energy solutions—creates both opportunities and uncertainties for the future development of many old industrial regions, particularly in Central and Eastern Europe. Silesia and Eastern Greater Poland exemplify such regions; despite differences in size and industrial heritage, both face similar challenges related to green transformation. This paper examines the green transformation processes in these regions and their attempts to escape from traditional industries lock-in. A key focus is on the adoption of eco-innovations (EIs) by regional enterprises, especially those that generate environmental benefits in manufacturing, such as reduced energy consumption, lower CO₂ emissions, and increased use of renewable energy sources.

The study explores the roles of resources, capabilities, public policy, and stakeholder influence in implementing EIs within industrial companies across the two regions. The research aims to identify key similarities and differences in how old industrial regions escape traditional industries lock-in, using the green transformation of Silesia and Eastern Greater Poland as case studies.

Albanian migration through the analysis of censuses from 1918 to 2011

Dr. Alain Jarne¹

¹Etat De Vaud, Riex, Switzerland

S54 Reactivating the Debate on Contemporary Albanian Migrations: an Updated State-of-the-art,
Amph 3, August 28, 2025, 9:00 AM - 10:30 AM

The issue of Albanian migration has been the subject of sustained interest from researchers. But research on internal migration has remained in the background. This article aims to help fill this gap by describing a certain number of quantitative data that have been little used until now and by proposing approaches to exploit them with a view to improving knowledge of the movements of the Albanian population in the period from the 1918 census to that of 2011.

This work was deployed along three axes:

- a) Acquisition of available data down to fine geographical levels for around fifteen censuses conducted during modern Albanian history
- b) Identification, location and mapping of all localities enumerated
- c) Documentation and mapping of relevant spatial groups (administrative divisions, cultural areas, etc.) and design of a territorial typologies to support the explanation of movements at different stages of the history of Albania.

The contribution does not aim so much to hold a discourse on migration as to show the sources and their potential in the context of the designed heuristic framework. To this end, a series of historical examples of migratory movements of various kinds will be described on the basis of the interpretation of three types of data.

The first approach consists in describing and interpreting precisely localized intercensal changes in the population. Although it is most often not possible to distinguish the respective contributions of migration and natural balance, the description of these intercensal changes allows to draw a fairly precise picture, in particular of the contrasting stages of Albanian urban development.

A second indicator of movements is the distribution by sex. At several points in Albanian history, there are significant disparities in the distribution of women and men in the territory, and rapid changes in spatial distributions, which indirectly reflect significant migratory episodes.

Finally, for certain points in Albanian history, we have very precise spatial information on population movements through the recording by censuses of the place of residence at the time of the survey, to be compared with the place of residence at birth, during a previous census, or the year preceding the census.

This article contributes to the special session on Albanian migration in several ways: 1) a broad vision of Albanian migration from an essentially quantitative and territorial perspective; 2) historical depth; 3) methodological contributions; 4) a good knowledge of Albanian statistics which could be useful for future research.

R&D support, innovation and regional performance

Dr Pei-Yu Yuan¹, [Prof. Raquel Ortega-Argiles](#)¹, Dr Gloria Cicerone²

¹University of Manchester, Manchester, United Kingdom, ²GSSI, L'Aquila, Ita

S10 The Knowledge and Technological Relatedness of UK National and Regional Economies, G5,

August 29, 2025, 2:00 PM - 4:00 PM

Public funding schemes for research and innovation (R&I) and collaboration in R&D have been found to be crucial for promoting regional development. However, translating R&D into regional development is a complex process, as it involves more than just a linear connection between business R&D, public support for R&D, and regional development in the UK. Our analysis builds upon recent research by Ortega-Argiles and Yuan (2022) to investigate the various pathways involved in the R&D-regional development process, with a focus on the role of innovation activity and technological relatedness as pathways for performance. Our analysis adds to the current agenda on regional inequalities (UK Levelling Agenda) in the UK, which intends to make more balanced the redistribution of R&D public funded supporting schemes outside the GSE (Greater South East) extended capital region, with the aim to rebalance the UK economy by more evenly distributing the potential positive returns from R&D, innovation, and technology across the country.

Drawing on the CDM framework (Crepon, Duguet, and Mairesse, 1998) and its adaptations, we analyse the UK Research and Innovation (UKRI) funded projects repository between 2004 and 2019 to demonstrate how public funding can promote regional development in the UK considering private R&D (Business Enterprise R&D from Eurostat) and innovation (patenting activity).

Our findings reveal that approximately 80% of the funding recipients are from the private sector, and they are the primary lead organization in multiparticipant projects. London and the South East of England, apart from being the top recipients, have seen a continuous increase of UKRI projects over time at the expense of other regions.

How the Economic Dynamics of China May Affect the Brazilian Economy: A Regional Perspective

Mr Julio Cesar Lopes¹

¹Banco do Brasil SA, Brasília, Brazil

G04-O1 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 27, 2025,
11:00 AM - 1:00 PM

Over recent decades, the commercial relationship between Brazil and Asia has strengthened considerably, with China emerging as Brazil's principal trading partner. In 2023, China accounted for approximately 30% of Brazil's total exports, with a significant share in commodities such as soybeans, iron ore, and oil. Specifically, soybeans constituted 56% of Brazil's total soybean exports, with over 60% of this quantity destined for China. Similarly, iron ore exports to China represented about 60% of Brazil's total iron ore exports. The strong demand from China for food and natural resources has therefore been a key driver of Brazil's economic growth, particularly in regions specialising in agricultural and mineral production.

China plays a central role in Brazil's commercial dynamics. In addition to being the largest importer of Brazilian products, China has also made substantial investments in Brazilian infrastructure, particularly in ports and railways, which further facilitate the country's export activities. The increasing significance of China underscores a broader shift in global geopolitical and economic alignments, with Brazil becoming progressively integrated into the Asian market, diminishing the weight of its traditional relationships with the United States and Europe.

However, Brazil's growing reliance on China introduces notable vulnerabilities, particularly in relation to fluctuations in demand for commodities and the volatility of international prices. Should the Chinese economy experience a slowdown or an internal crisis, the consequences for Brazil could be severe, particularly for states that are heavily dependent on these exports.

On a regional level, the Brazilian states most dependent on trade with China include Mato Grosso, Minas Gerais and Pará. Mato Grosso, for instance, is one of Brazil's largest exporters of soybeans, with China as its main market, rendering the state highly vulnerable to fluctuations in soybean prices. Likewise, Minas Gerais and Pará are significant exporters of iron ore, making China a key strategic partner for these regions. For these states, the commercial relationship with China represents both a substantial growth opportunity and an economic risk, especially in light of potential shifts in Chinese trade policies or changes within the domestic Chinese market.

Indeed, the old Chinese growth model now appears to be reaching its limits, with new drivers of economic expansion emerging within China. This evolving economic landscape may have pronounced implications for Brazilian regions that are particularly reliant on trade with China.

Bike-sharing analysis in Greece to evaluate urban and local equity

Dr. Stefanos Tsigdinos¹, Dr. Nikolas Thomopoulos²

¹NTUA, Athens, Greece, ²University of Surrey, Guildford, United Kingdom

G19-O4 Urban, Regional and Local Policy Evaluation, G3, August 29, 2025, 9:00 AM - 10:30 AM

Active travel has been at the core of attempts to promote sustainable mobility and contribute towards the Sustainable Development Goals, whilst creating more liveable cities. Cycling has been featuring as a prominent alternative or at least complement to car-centric urban planning and it has an established contribution in local and regional economic development. Nonetheless, the uptake has been quite low and stagnant in large parts of Europe. Electric bicycles, namely e-bikes, have rejuvenated interest, largely due to the support they offer to overcome any local or regional geomorphological challenges. Yet, distribution of e-bikes and their required infrastructure have reintroduced debates linked with equity and inclusion.

This submission aims at evaluating docked e-bike schemes in selected cities across Greece to offer evidence and insight about improving current plans and policies. An urban typology is created first using four carefully selected cities based on a series of criteria, namely Kalamata, Rhodes, Kozani and Lamia. The focus is deliberately on smaller cities with a population of less than 100,000 permanent residents, but selection criteria also include location, geomorphology and number of tourists visiting annually. Then, an equity analysis of e-bike docking station locations is conducted for each selected city, using different equity types and principles, such as horizontal, vertical and egalitarian. Lastly, the ongoing socio-spatial inequality analysis is conducted within each city to establish best practice and areas requiring improvement. This analysis is based on secondary socio-demographic data and leads to the final multi-city typology of e-bikes, which informs the policy recommendations.

Preliminary findings demonstrate interregional differences both within and between cities, highlighting disparities across urban areas. The latter is particularly evident in cities with lower numbers of tourists or in cities with more challenging geomorphology and patchy infrastructure provision. Gaps are identified in existing planning practice and therefore offer useful input to support formal planning initiatives, such as Sustainable Urban Mobility Plan updates. Through an initial flow analysis, valuable insights are offered for practitioners, academics and policy makers regarding the development of sustainable business models for new mobility services, which serve both user and city objectives. In such, this submission meets a dual objective of supporting more widespread cycling across smaller cities with limited public transport options, while at the same time it tests an effective method of meeting inclusive and sustainable transport objectives. Outputs enhance evidence-based policy making at local and regional policy levels, which foster sustainable shared mobility.

Join the Med: Creating a multipurpose platform for enhancing sustainable tourism in the Mediterranean

Prof. Theodora Papatheochari¹, Prof. Spyros Niavis¹, Mrs Antonia Koutsopoulou¹, Ms Pelagia Moloni¹, Prof. Harry Coccossis¹

¹University of Thessaly, Volos, Greece

S79 Viable Solutions Towards Sustainable Tourism in Mediterranean Tourism Destinations, F5, August 28, 2025, 9:00 AM - 10:30 AM

Ensuring a sustainable path for tourism requires the mobilization of both private and public actors, along with improvements in policy frameworks at both strategic and operational levels. The Interreg initiative provides fertile ground for fostering collaboration among diverse stakeholders and driving significant progress toward sustainable tourism development. This calls for the active participation of stakeholders and project partners after the project's lifetime and the continuous monitoring of similar projects in order to build on available knowledge, bring added value, and avoid replication. To deal with these challenges, the capitalization of past knowledge and the viability of project results after their implementation are now essential criteria used by Managing Authorities to evaluate project applications. Moreover, programmes set new mechanisms, such as governance and community projects, targeted capitalization calls, formal partner agreements after the implementation of projects, and digital platforms to maintain results. This paper seeks to highlight the importance of a knowledge hub collecting data and information related to such a diverse topic, such as sustainable tourism. In order to do so, the paper showcases the experience gained through the creation of Join the Med platform, a knowledge hub developed by Community4Tourism (C4T), the Thematic Community project of the Interreg Euro-MED Programme for Enhancing Sustainable Tourism under the Sustainable Tourism Mission of Interreg Euro-MED Programme. Join the Med platform answers to the need for effectively and efficiently collecting and presenting the results of projects, which are considered relevant to sustainable tourism issues as well as valuable assets for practitioners, policy makers, academics and other stakeholders' groups, in an integrated and dynamic way in order to reach the end-users and ensure the viability and replicability of the results. The platform functions as a knowledge hub for sustainable tourism issues by drawing information from the actions and results of the Sustainable Tourism Mission and as a mechanism for visual presentation of the synthesis of the Community's results. The aim is to establish a non-static, dynamic tool with interactive visualizations of the projects' results which can also act as a database and monitoring mechanism collecting projects' results and incorporating visual features by mapping pilot areas, actors, activities, synergies and links with other projects and activities. Join the Med architecture includes five basic features, namely, tangible and replicable tools, a fully customizable search engine, a collection of best practices, a mapping of relevant stakeholders and a series of policy hubs.

Exploring and fostering synergies between the Just Transition and the SDGs: Insights from the former mining region of León, Spain

Ms Nevelina Pachova¹, Ms Adriana Veran Casanova¹

¹RMIT Europe, Barcelona, Spain

S02 Localizing Sustainable Development Goals: Actions, Assessments, and Interlinkages at the Regional Level, G6, August 27, 2025, 4:30 PM - 6:30 PM

Multi-level governance processes and structures can hinder or enable the achievement of policy goals. In this study we explore the interlinkages and scope for synergies at the regional and local level between two related but different policy agendas and processes, namely the internationally-agreed SDGs and the EU-led Just Transition (JT) process. We do so by juxtaposing the SDG and JT goals and targets and exploring how they relate to the needs and priorities of local level stakeholders and groups in line with calls for localizing the SDGs but also to those of communities on the margins in line with the JT objective of leaving no person behind in the process of decarbonization and change. The study draws on the results of a cross-regional study on the topic undertaken in the framework of the EU-funded BOLSTER project but focuses on the insights from action-research undertaken with communities on the margins of the just transition in the former mining region of León, Spain. Specifically, it demonstrates how enabling communities on the margins to achieve their needs in line with the JT objective of leaving no one behind can contribute to the achievement of critical SDGs, such as gender equity (SDG 5), reduced inequality (SDGs 10), sustainable cities and communities (SDG 11), and strengthen institutions and participatory decision-making processes (SDG 16), among a range of other ones. The results point towards the benefits of linking policy agendas at the higher scales as a means of enabling local action and transformative change.

Daily human mobility across urban and rural regions of European countries

Dr. Hal Voepel¹, Dr. Jessica Steele¹, Dr. Alessandro Sorichetta²

¹University Of Southampton, Southampton, United Kingdom, ²University of Milan, Milan, Italy

S55-S1 Taking into Account Diversity to Shape just Rural Futures: Novel Indicators for Resilient and Inclusive Development, Amph 2, August 27, 2025, 11:00 AM - 1:00 PM

Understanding daily and long-term patterns in human mobility are important for local administrators in designing transportation routes and traffic timing, zoning commercial versus residential areas, and planning commuter travel between rural and urban regions. Facebook human mobility data provides an opportunity to study mobility patterns of groups of Facebook users (who have opted-in to record their location history) over daily intervals at diurnal periodic scale and covering local administrative levels over a countrywide extent. Here we analyse human mobility patterns across small “living lab” regions across several European countries to explore daily and diurnal movement, weekend versus weekday travel, and seasonal variation spanning Facebook records up to a two-year period between 2020 and 2022.

Spatial differentiation and effects of GVCs and FDI on knowledge production, valuation and offshoring activities

Dr. Viktor Květoň¹, Dr. Vojtěch Kadlec²

¹Charles University, Prague, Czechia, ²Charles University, Prague, Czechia

S38-S3 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 27, 2025, 4:30 PM - 6:30 PM

This contribution explores the multifaceted roles that Global Value Chains (GVCs) and MNEs play in shaping the landscape of knowledge production and valuation, as well as their significant influence on offshoring activities, particularly patent offshoring. GVCs are integral components of the global economy that not only facilitate the flow of goods and services across borders, but also enable the transfer of knowledge and innovation. Patent offshoring, a critical aspect of this dynamic, involves transferring the development and registration of patents to different countries, often to capitalize on lower costs and access specialized expertise. This practice significantly impacts knowledge production and valuation, as it enables firms to tap into a global pool of intellectual resources and innovation networks. Therefore, we will provide answers to the following research questions:

What is the geographical concentration of the most valued (green) patents in EU regions and what is the association with quality of regional governance, economic and innovation performance?

What role does patent offshoring within GVCs/MNEs play in patent concentration and what are the effects on firms, workers and places?

The results in this paper are pioneering as it relies on patent valuation (and not just the absolute number of patents) and in addition expresses a spatial perspective of patent valuation and offshoring as a result of the action of MNEs/GVCs. The key messages can be seen threefold. First, the most valued offshored patents are from the most developed regions. It turns out that the most developed regions with MNEs are able to further strengthen their position as a result of patent offshoring. Due to the strong concentration of R&D activities not only of foreign but also of domestic firms, knowledge outflow does not have a negative impact, on the contrary, the presence of MNEs in these regions creates positive agglomeration effects (like job creation in R&D etc.) in the more developed regions. The effects of MNEs and their offshore activities contribute to increasing income inequalities. In the case of less developed regions the outflow of know-how is further reflected in lower innovation and economic performance, and indirectly in lower economic performance. MNEs cherry-picked the most valuable knowledge production and anchor less developed countries and regions (e.g., former command economies in Central Europe) in the position of semi-periphery. The MNEs' strategy for intellectual property protection is highly centralized and most patents are usually filed in the name of the parent firm.

Job polarization and firm competitiveness in the knowledge based economy

Dr. Sara Johansson¹, Dr Lina Bjerke¹

¹Jönköping International Business School, Jönköping, Sweden

S26 New Insights Into Agglomeration (Dis)Economies: Effects and Underlying Mechanisms, B6, August
28, 2025, 9:00 AM - 10:30 AM

This paper explores the impact of spatial sorting of jobs and job upgrading within industries on the competitiveness of firms in rural areas, particularly in the context of a knowledge-intensive economy. The increasing role of automation and digitalization is central to this transformation, as automation replaces low-skilled tasks while creating high-skilled, complex jobs. These technological advancements often lead to a spatial sorting of high-skilled jobs into knowledge-dense urban regions, altering regional labor markets. Job polarization—the growth of high-wage, high-skill jobs alongside low-wage, low-skill jobs, with a diminishing middle-skill category—has become a defining characteristic of labor markets in advanced economies. This shift significantly impacts both urban and rural areas, but the consequences are more pronounced in rural regions, where firms struggle to adapt to a knowledge-based economy. The paper examines how job polarization contributes to spatial sorting and how this sorting influences the ability of rural firms to remain competitive in a global economy. It highlights the bifurcation of the labor market, with urban centers attracting highly skilled workers while rural areas face a hollowing out of middle-skill jobs, limiting their capacity to engage in knowledge-intensive industries. The paper challenges the conventional view that rural regions are left behind in terms of job upgrading, suggesting that job sorting may, in fact, accelerate job upgrading in rural areas through spillovers from urban knowledge hubs. The study uses panel data on firms and individuals over a twenty-year period to test the hypothesis that increased access to knowledge in rural areas may result from the relocation of key industry activities to urban centers. Preliminary results indicate that spatial sorting is associated with aggregate job upgrading at the industry level, although causal relationships remain inconclusive. This research contributes to understanding the economic dynamics of rural regions within a polarized labor market and offers insights into rural regions' transition to a knowledge-intensive economy.

Health and Air Pollution in Italy: Evidence from Changes in Wind Direction

Mr Ivan De Menezes Cavalcanti¹

¹Gran Sasso Science Institute, GSSI, L'Aquila, Italy

G08-O2 Climate Change and Natural Disasters: Spatial Incidence and Spatial Impacts, Amphitheater I -
SAKIS KARAGIORGAS, August 27, 2025, 2:00 PM - 4:00 PM

We investigate the link between acute air pollution exposure on short-run mortality rate in Italy, following an identification strategy that exploits daily variations in air pollution concentration caused by changes in daily wind direction.

Changes in local wind direction are a strong predictor of changes in local air pollution levels, given that air pollution is often transported long distances through the wind.

Also, in our instrumental variable strategy, wind direction shifts pollution levels but is unrelated to the individual's pollution avoidance behaviours and other unobserved determinants of mortality, keeping them fixed.

Our results represent the first application of this identification method to Italy, exploring the country's unique institutional and geographical characteristics and refined datasets.

Harnessing Intangible Cultural Heritage through Rural Entrepreneurship: How regional policy has impacted Dalir district in Iceland

Ms Anna Hildur Hildibrandsdottir¹

¹Bifröst University, Reykjavik, Iceland

S12 Place-Based Innovation of Cultural and Creative Industries in Non-Urban and Peripheral Areas: What Roles for Actors and Policies?, G6, August 27, 2025, 11:00 AM - 1:00 PM

This paper examines the Dalir district in West Iceland, a sparsely populated settlement of 642 residents with a rich cultural heritage rooted in Icelandic sagas, poetry, and visual arts, set against a striking natural landscape. As part of the Horizon Europe-supported IN SITU research project (IN SITU, n.d.), Dalir has received policy support from the Icelandic Regional Development Institute through a citizen-led visioning initiative aimed at fostering entrepreneurial activities since 2022. This research explores how intangible cultural heritage (ICH) serves as both a resource and a driver for sustainable rural development, particularly in regions facing socio-economic and demographic challenges.

Building on insights from the IN SITU project, this study advances the methodology of cultural mapping (Duxbury, Garrett-Petts & MacLennan, 2015) to assess the role of ICH in shaping local identity, fostering community engagement, and making cultural assets more accessible to visitors. The paper also examines the relationship between creative entrepreneurship and the rural context, contributing to the ongoing discourse on the interplay between geographic peripherality, cultural production, and economic sustainability (Gibson, 2021; Comunian & England, 2020).

Furthermore, the study investigates the interconnection between place-based entrepreneurial activity and the socio-spatial dimensions of rural environments, expanding on research that links geographic constraints with innovative business practices (Korsgaard, Ferguson & Gaddefors, 2015; Eimermann, Lundmark & Larsson, 2022). By applying cultural mapping methodologies, the research explores innovative approaches such as podcasting with local storytellers, leveraging AI-driven translation technologies to preserve their voices across multiple languages while ensuring authenticity and accessibility.

It aims to offer new insights into how creative rural entrepreneurs navigate geographic and economic challenges, emphasizing the need for place-sensitive policies to support cultural and creative industries in peripheral regions (Collins & Murtagh, 2024; Marques & Richards, 2022). By demonstrating the potential of cultural engagement through rural entrepreneurship, this study contributes to the broader conversation on rural innovation, cultural sustainability, and economic diversification in remote areas.

The gender-related side of Cohesion Policy

Dr. Pablo Casas¹, Dr. Tryfonas Christou¹, Dr. Abián García Rodríguez¹, Dr. Tillmann Heidelk², Dr. Marie Lalanne¹, Dr. Nicholas Lazarou¹, Dr. Philippe Monfort², Dr. Simone Salotti¹

¹European Commission, Joint Research Centre (jrc), Sevilla, Spain, ²European Commission, DG REGIO, Bruxelles, Belgium

S27-S3 Gender Equality in Regions in Europe and Beyond, D12, August 28, 2025, 4:30 PM - 6:30 PM

EU legislation increasingly call for the inclusion of a gender dimension in all EU policies that are suitable to embed such consideration. The commitment of the EU in reducing gender inequality has brought institutions to develop mechanisms that effectively implement this gender dimension in their policies. Cohesion Policy (CP) is one of these interventions that account for a gender dimension in the 2021-2027 programming period. We manage to tag fields of intervention to simulate the impact of CP on gender equality across EU regional labour markets.

This exercise brings novelty from different perspectives, to the best of our knowledge. First, it is the first impact assessment at the EU level on gender equality of a policy which reducing gender inequality is not the main target. Second, this is the first EU impact assessment of a gender-related policy at the regional level. Last, the model used in this analysis constitutes the first spatial computable general equilibrium model targeting EU regions with a gender dimension. In the model, we consider a 10 sectors division in each of the 235 EU NUTS2 regions.

CP increases gender equality across EU labour markets, since it effectively decreases the Gender Activity Gap, the Gender Employment Gap and the Gender Wage Gap. However, this overall increase in gender equality masks wide regional heterogeneity, with some regions improving their prospects more than others. We dig into these different outcomes in different geographical locations wondering if CP brings convergence on the gender equality situation across EU regional labour markets.

Uncovering Green Foreign Direct Investment: A Novel LLM-Based Approach to Classifying Sustainable Investments

Mr Juan Alvarez Vilanova¹, Mr Riccardo Crescenzi¹, Mr Lee Mager¹

¹London School Of Economics, London, United Kingdom

S38-S6 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 29, 2025, 9:00 AM - 10:30 AM

Foreign Direct Investment (FDI) is a crucial source of capital, technology and skills for the green transition, yet we lack a robust methodology for identifying ‘green’ FDI beyond investment in renewable energies. This paper develops a novel approach that leverages the newly published EU Taxonomy of Sustainable Finance and the rapidly advancing capabilities of pre-trained Large Language Models (LLM) to accurately, consistently and reliably identify green FDI projects in all sectors of the economy. This is, to our knowledge, the first application of LLMs specifically for classifying green investments. Our methodology reveals that 1 in 5 inward FDI USD into the European Union (EU) and the United Kingdom (UK) between 2013 and 2023 can be considered green, of which half lie beyond renewable energy and would otherwise not be fully picked up by existing approaches as capable of contributing to sustainable development. In terms of geography, our analysis unveils a new geography of green FDI that goes well beyond ‘sunny’ and ‘windy’ regions typically associated with renewable energies FDI. These descriptives demonstrate that, beyond acting as a source of finance for vital renewable energy infrastructure, FDI in Europe is beginning to serve as a vehicle through which to decarbonise other sectors of the economy, including those (such as manufacturing and heavy industries) which are associated with high direct and indirect carbon emissions.

Cities and unequal exchange in global food trade networks: towards a spatial theory of food geographies

Ms Liesbeth De Schutter¹, Ms. Eveline van Leeuwen¹, Mr. Stefan Giljum²

¹Wageningen University, Wageningen, The Netherlands, ²Vienna University of Economics & Business, Vienna, Austria

S26 New Insights Into Agglomeration (Dis)Economies: Effects and Underlying Mechanisms, B6, August 28, 2025, 9:00 AM - 10:30 AM

In order to support a better understanding of the relation between urban consumption and global impacts in urban food trade networks, we develop a theoretical framework for the conceptualization of food geographies and their spatial constellation from an urban perspective.

Starting from an empirical analysis of the spatial structure of urban food footprints in high income countries, both in terms of resource use, socio-economic spillovers and environmental impacts, the paper develops a theoretical framework that can explain patterns of spatial dependence and unequal exchange in the global resource system.

The theoretical framework is based upon three spatial theories: (i) the theory of unequal development from the field of spatial economics, (ii) productivity theory from the field of ecological economics and (iii) the theory of Ecologically Unequal Exchange from the field of political ecology and environmental inequality. We integrate these theories into a coherent framework that conceptualizes “food geographies” as spatial conjunctions of place-based communities and functional economic agents in urban food trade networks. The spatial lens highlights an emergent core-periphery structure in the global resource system and identifies (arable) agriculture as either a key agent in, or as metaphor of, the periphery in an urbanizing context. In the discussion, we elaborate on the potential role of cities and peri-urban regions in steering urban food networks towards (more) sustainability and equity.

Regenerative soil systems: A community-based approach towards soil health in city-regions

Ms Liesbeth De Schutter¹, Ms Joana Wensing¹, Ms. Eveline van Leeuwen¹

¹Wageningen University, Wageningen, The Netherlands

S87-S2 Territorial Transitions: Exploring the Scene of Participatory Actions and Common, G4, August

28, 2025, 4:30 PM - 6:30 PM

The European Union faces two critical challenges: (1) the accumulation of biowaste in cities and (2) the depletion of nutrients from agricultural soils in less dense regions. Both problem contexts have been associated with the global structure and mostly linear practices in urban food provisioning. Yet, urban waste services and related actors (food retailers, households, restaurants, farmers) tend to lack a sense of shared responsibility in governing cities and their dependence on healthy soils in food producing hinterlands. Based on the concept of “commons” and community-based governance of resource systems developed from an ontological lens of complex social-ecological systems, we propose to take a broader “regenerative soil system” perspective. Using the case of the city of Amsterdam, we apply this concept as an epistemological tool to identify distinct biowaste communities in the city-region. Through participatory modeling workshops with these communities, we assess how these communities conceptualize soils and their multiple functions as a commons, and explore if, and how they (can) develop and implement regenerative practices to benefit the local community and city-region. In particular, we assess whether awareness of the complexity of the biowaste problem context in city regions supports interest in, and action towards, community building processes contributing to a paradigmatic shift from individual and local level solutions to place-based (city-region level) solutions.

Governance and the implementation of the EU Cohesion Policy

Prof. Riccardo Crescenzi¹, Dr Guido de Blasio², Prof Mara Giua³, Dr Viviana Celli⁴

¹London School of Economics, London, United Kingdom, ²International Monetary Fund, Washington, USA, ³Universita' Roma Tre, Rome, Italy, ⁴Sapienza Universita' Di Roma, Rome, Italy

S57-S1 Cohesion Policy and Industrial Policy: Competition or Complementarity?, Amph 2, August 28, 2025, 4:30 PM - 6:30 PM

This paper explores the role of governance in policy implementation, using the European Union (EU) Cohesion Policy as a case study. Leveraging a quasi-natural experiment in Italy, where certain projects were shifted from EU to national management, we evaluate the impact of governance structures on financial execution. Using a non-parametric generalization of the difference-in-differences estimator, we find that otherwise identical projects achieve better financial execution under EU governance. Projects reassigned to national management experience a significant slowdown in financial execution within ten months, with delays reaching nearly 20% after 24 months. These delays are particularly pronounced when projects are managed at the sub-national level rather than by the national government. Our findings contribute to the broader policy debate on the effectiveness of multi-level governance structures in public investment programs.

Twin (green and digital) patents identification: an automated patent landscaping approach

Dr. Francesca Ghinami¹, Prof. Sandro Montresor², Prof. Stefano Usai¹

¹University of Cagliari, Cagliari, Italy, ²University of Trento, Trento, Italy

G25-O3 Enriching Research and Policy Methods in Regional Science: Digital Tools, Artificial Intelligence, Participatory Methods, Mapping Techniques, Stakeholder Involvement, Amph 3, August 29, 2025, 2:00 PM - 4:00 PM

Identifying green, digital, and twin patents is crucial for assessing innovation trends and evaluating policy effectiveness in sustainability and technology. The literature offers various approaches, from code-based classification to machine learning techniques, each with distinct strengths and limitations. However, the absence of a universally accepted methodology for identifying such patents undermines the consistency and comparability of findings across studies. In this article, we examine existing methods, highlighting their advantages and constraints, and propose a methodological framework to address current limitations, enabling a more robust and scalable identification of twin patents. We introduce a fully automated, hybrid and unsupervised patent landscaping approach that systematically identifies relevant digital-sustainable "twin" patents through an open-source, replicable, and consistent methodology. This method integrates a rule-based seed identification—leveraging various combinations of keywords, IPCs, and CPC codes—with a bidirectional citation expansion, along with a pre-trained PaECTER BERT model for classification, ensuring a precise, replicable and efficient selection process with low computational costs. We employ the Patstat 2024 Autumn database, and test this method on a challenging category of patents, containing both a digital and a sustainable technological component. Preliminary results reveals minimal to no overlap between patents identified as twin by each of the existing methods, underscoring the challenges of capturing a cohesive set of relevant sustainable-digital innovations. While robustness, accuracy and precision tests are still ongoing, the first results seems to indicate that this hybrid approach effectively improves both precision and comprehensiveness in twin patent identification.

Land acquisition and Rural population displacement: Evidence from China

Ms Yutong Guo¹

¹University Of Bristol, Bristol, United Kingdom

G09-O4 Migration, Mobility Patterns and Impacts Across Space, A4, August 29, 2025, 2:00 PM - 4:00 PM

Over 1,000 km² of rural land is acquired annually in China as part of the rapid industrialization and urbanization process, with varying amounts of compensation provided to millions of affected rural individuals. How does the generosity of land acquisition compensation shape migration patterns and outcomes of displaced rural individuals? This paper constructs a novel dataset of village-level land acquisition events in three central provinces of China between 2011 and 2015, together with population micro-census data to track migrants and observe outcomes at their destination. I exploit exogenous variations in land acquisition compensation, induced by agricultural income shocks at the time local governments set compensation bases, for identification. I find that, as per-capita compensations increase, migrants become more likely to move for resettlement rather than employment—for instance, they tend to reunite with relatives instead of relocating alone. This pattern is more pronounced among older and less-educated individuals. In contrast, land acquisition compensations do not appear to affect their housing and working conditions at their destination in the short run.

Advancing Planetary Health Indicators to improve Universal Health Coverage – insights from international databases

Prof. Eduarda Marques Da Costa¹, Prof. Ana Louro, Dr. Pedro Franco, Prof. Nuno Costa

¹Instituto De Geografia E Ordenamento Do Território, Lisboa, Portugal

S66 Sustainable Health: Progress Towards Universal Health Coverage as a Sustainable Development Goal (SDG 3.8) across the Globe, B3, August 29, 2025, 11:00 AM - 1:00 PM

Universal Health Coverage (UHC) is a key component of the Sustainable Development processes. Climate change impacts on health, expressed through environmental health, animal health, and human health, highlighting the emergence of the Planetary Health perspective. Covid-19 Pandemic highlighted the importance to develop an integrative approach and choosing indicators to accompany it. The Project “Multi-site application of Open Science in the creation of healthy environments Involving local Communities (MOSAIC - HORIZON-HLTH-2023-ENVHLTH-02-01 Planetary health) initiated in 2024, develops a conceptual and analytical framework for One Health. Given the importance of this issue, several international organizations have presented an analytical framework and a comprehensive list of indicators, of which we highlight UN Climate Change: Working together for climate action and the SDG indicators. The main objectives of this presentation are: made a comparison between the different databases and propose a methodology to select and classify the indicators according to their role as drivers or impacts of climate change on health; identify if this indicators are present in the political instruments and how can be used as key indicators in the international and national systems. The analysis is based in south America and African case studies of MOSAIC project.

Adapting the 15-Minute City Concept to Enhance Urban Resilience and Liveability: The Case of Lisbon

Prof. Nuno Marques da Costa, Prof. Ana Louro, Prof. Eduarda Marques Da Costa¹, Dr. Luis Encalada

¹Instituto De Geografia E Ordenamento Do Território, Lisboa, Portugal

S06-S1 From Vulnerability to Opportunity: Building Resilient and Liveable Cities through Sustainability and Digitalisation, E12, August 27, 2025, 4:30 PM - 6:30 PM

Triggered by the AccessCity4All Project—an initiative aimed at adapting the 15-Minute City concept to support active mobility in neighbourhoods with different levels of accessibility—this study examines how Lisbon, a consolidated and dense city, has developed an urban policy framework to implement this model. By integrating sustainability, accessibility, and digitalisation, the 15-Minute City approach is explored as a strategy to enhance urban resilience and liveability.

This qualitative analysis identifies and examines various recent urban planning instruments in Lisbon that, explicitly or implicitly, promote the 15-Minute City. It includes a review of policy documents, objectives, specific actions, geographic interventions, and their impact on urban accessibility and mobility. The research also evaluates the extent to which these strategies contribute to mitigating urban vulnerabilities while fostering more inclusive and adaptive neighbourhoods.

Lisbon's commitment to this paradigm is evident in programs such as One Square in Each Neighbourhood, which reinforces micro-centralities and public spaces, and There's Life in My Neighbourhood, explicitly aligned with the 15-Minute City approach to enhance local identity, quality of life, and active mobility. Significant investments in cycling infrastructure, pedestrian-friendly environments, and digital mobility solutions further support this transition.

By focusing on distributed urban interventions that respond to local socio-spatial specificities, this study underscores how Lisbon's approach to the 15-Minute City serves as a replicable model for resilient and liveable cities. The findings highlight both successes and challenges in implementing such a transformative urban paradigm, demonstrating the critical role of political will, integrated planning, and digital tools in achieving long-term sustainability goals. This presentation is integrated in the Project "AccessCity4All - Adapting the 15-Minute City concept to support active mobility in neighbourhoods with different levels of accessibility" (DUT Call 2023).

Transportation Policies, Long-Haul (Dis)economies and Sectoral Specialization in Brazil

Dr. Daniel Carvalho¹, Dr. Gervasio Santos¹

¹Federal University Of Bahia, Salvador, Brazil

G05-O7 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 29, 2025, 11:00 AM - 1:00 PM

The objective of this paper is to estimate the effect of the expansion of the federal highway transportation network on the aggregated and disaggregated distribution of economic activity in peripheral municipalities of Brazil, considering the long-haul (dis)economies and the sectoral specialization. The organization of economic activity within the Brazilian geographical space is historically linked to transformations in road transportation. The development of an integrated national network, beginning in the second half of the 20th century, coincided with the weakening of isolated settlements, which lost significant participation in the Brazilian economy. The theoretical literature in the context of New Economic Geography (NEG) points out that transportation costs are a key aspect in firms' location decisions and, consequently, the behavior of the labor force. Thus, the instrumental variables methodology was used to capture the effect of exogenous variations in infrastructure on economic activity. This exogenous variation was based on historical plans of the federal highway transport network aimed at connecting state capitals to the Federal District and meeting other economic and military needs. Additionally, historical input-output tables were used to capture each sector's dependence on transportation services and to characterize possible channels of transmission of infrastructural development on sectoral activities. The database for this research includes a set of quantitative and qualitative information gathered from census microdata and archives of public institutions of transport, which respectively describe the evolution of local economies and national infrastructures from 1970 to 2010. The results showed that access to federal highways positively affects the shares of employment and income in the treated municipalities. The largest impacts were observed in industrial activities of lower technological intensity. These findings validate the reference model of Koster et al. (2022), which predicts a positive return from integration in the predominance of long-haul diseconomies, as estimated for Brazilian highways. In summary, we offer insights into how national transportation corridors shape the growth and specialization of small markets spread across large urban centers.

Human Capital and Technology Adoption: A Simultaneous Model Approach

Ms Thi Chinh Vo¹, Professor Donghwan An¹

¹Seoul National University, Seoul, South Korea

G24-O3 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 29, 2025, 11:00 AM - 1:00 PM

This study investigates the bidirectional relationship between high-skilled human capital and industrial technology capability. Using a simultaneous equation model (SEM), we treat both human capital and industrial technology capability as endogenous variables. The analysis is based on panel data from 35 major countries over the period 2000–2022. Unlike previous studies that typically examine one-directional effects or single-country cases, this paper contributes to the literature by modeling mutual reinforcement between human capital development and technological upgrading at the industrial level. Empirical results from the three-stage least squares (3SLS) estimation confirm a robust two-way relationship: technological progress increases demand for high-skilled human capital, while human capital drives technology capability. We also find that the quality of education (Science, Technology, Engineering, and Mathematics-STEM fields graduates), has a stronger impact than the quantity of general education. Moreover, interaction analyses reveal that urbanization and government education expenditure positively affect high-skilled human capital in countries with lower levels of technological development. Additional findings highlight the roles of gender disparities, fertility, and unemployment in shaping human capital outcomes. These results emphasize the need for coordinated industrial and education policies tailored to each country's technological stage and structural context.

The Evolving Landscape of Regional Development: Examining the Impact on CCIs in Rural Iceland

Ms Erna Kaaber¹

¹Bifrost University, Reykjavík, Iceland

S12 Place-Based Innovation of Cultural and Creative Industries in Non-Urban and Peripheral Areas:
What Roles for Actors and Policies?, G6, August 27, 2025, 11:00 AM - 1:00 PM

This paper examines the evolution of regional policy in Iceland, with a growing emphasis on regional development perspectives and their impact on public support for culture and the creative industries. Regional policy and regional development are intricately connected, and amidst the backdrop of increasing decentralization of neoliberal ideologies, the focus has progressively shifted from traditional regional policy to a regional development approach that prioritizes sustainable solutions, innovation, and the competitiveness of individual territories. Regional development policy emphasizes strengthening specific areas and fostering specialization and growth in innovation and business, rather than equalizing the distribution of employment, residence, and services as with traditional regional policy. Although international organizations have highlighted the importance of culture for local and regional development, encouraging governments to leverage culture and the creative industries for regional progress and understand the geographic context of innovation within these sectors (OECD, 2018), politicians and officials often view culture primarily as a cost and cultural projects less in the context of innovation and progress. This may stem from how technological focus is still placed on innovation in policy but also how the convergence of public policies from different domains plays out differently at the regional level compared to the national level. At the regional level, a convergence of policies integrating CCI policy, industrial and innovation policy, and regional policy has been observed, as noted in research by Katja Lindqvist on the case of Sweden and a similar trend in Iceland in recent years. The government's support for cultural initiatives has demonstrated regional variations across Iceland, resulting in divergent emphasis on culture between national cultural policies and regional-level policies. While the national policy focuses on professional practices and product quality, the support in rural areas has been influenced by competitive factors in project funding, which aim to foster the development of individual regions in alignment with their respective regional plans of action (Kaaber og Guðmundsdóttir, 2025). The incorporation of the United Nations' Sustainable Development Goals across different governance levels of policy can also provide insights, as although they have a strong social economy factor, none of the goals specifically address the role of culture.

The pace of integration: Exploring lower commuting speeds among immigrants in France

Prof. Michel Dimou¹, Prof Alexandra SCHAFFAR¹, Dr Laurent GOMEZ¹

¹University of Toulon, Paris, France

S38-S5 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),
E14, August 28, 2025, 4:30 PM - 6:30 PM

Numerous studies have documented behavioral differences in daily mobility patterns between native-born individuals and immigrants. Immigrants tend to use public transportation and non-motorized modes of travel, such as walking and cycling and car-sharing services more frequently. These mobility choices are influenced by various factors, such as residential location decisions shaped by financial constraints and preferences for living near ethnic or cultural communities. Furthermore, immigrants' mobility behaviors vary significantly depending on their host country and country of origin. For example, In the United States, Asian immigrants tend to commute shorter distances on average compared to Hispanic or European immigrants. Several studies emphasize the importance of analyzing the mobility behaviors of distinct immigrant subgroups instead of treating all immigrants as a single category.

This study draws data from the French National Transport Survey, known as “Enquête Mobilité des Personnes” (EMP, 2021), to address a critical gap in understanding daily mobility and travel speed inequalities among natives, immigrants, and various immigrant subgroups in France. It aims to understand how socio-demographic, spatial, and structural factors contribute to these disparities, offering insights into more equitable mobility public policies.

Our methodology involves a multi-step approach to analyze the determinants of travel speed disparities. First, we use a step-by-step model to assess how various factors influence daily mobility choices. Next, we conduct a mediation analysis to disentangle the effects of individual characteristics and locational conditions on travel speed. Then, we apply an interaction model to compare the mobility behaviors and performance of immigrants and natives, highlighting potential differences. We also use a truncated regression model, focusing exclusively on the immigrant population, to investigate the impact of economic and social integration on mobility performance, with a specific emphasis on travel speed. Finally, we use a multinomial Logit model to examine the choices of transport modes of different population groups.

The findings of this study reveal significant differences in travel speed among various population groups. Gender and family circumstances have a more pronounced impact on the mobility of immigrants compared to natives. Residential location is another crucial factor driving variations in travel speed. An immigrant's country of origin and level of integration play essential roles in their mobility performance. Integration factors such as civic involvement are linked to travel speed. Acquiring citizenship and long-term residency suggests that institutional integration also contributes to increased travel speed, highlighting the importance of social and economic inclusion in reducing mobility inequalities.

The interface between agriculture and urbanization. The case study of Bir al-Sika, Israel

Dr. Iyad Snunu¹, Prof. Michael Sofer³, Dr. Noaman Gnayim²

¹Peres Academic Center, Abu Sinan, Israel, ²Bar-Ilan University, , , ³Kaye College, ,

G12-O1 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 27, 2025, 11:00 AM - 1:00 PM

The urbanization process led to significant economic and landscape changes in the Arab settlements in Israel, among them the changing characteristics of agricultural activities and the survival strategies of farming households. The major question: Is the continued existence of agricultural activities an essential element in the urbanization process of the Arab settlements? In other words, what are the survival strategies of Arab farmers under the expansion of urbanization processes and the existence of local and national barriers - economic, social and institutional - to sustainable agricultural development? The discussion is focused on the village of Bir al-Sika, where changes in land uses were examined and estimated according to a chronological sequence, followed by the attitudes of officials. The positions of farmers were reviewed in the context of the continued survival of agriculture as a significant economic activity in the urbanizing settlement.

Along with the decrease in the scope of agricultural activities, with an increase in the intensity and in productivity and a decrease in the demand for labor - as part of the farmers' survival strategy, there are changing trends that indicate the development of alternative sources of income for the farmers. This is accompanied by changes in the nature of the local infrastructure and various aspects that accompany the urbanization process. The accumulation of evolving trends is the product of sociological and conceptual changes in Arab society in Israel, local development mechanisms and processes concerning the Arab communities but is also influenced by mechanisms and processes at the national level.

The effect of computer science at higher education institutions on local labour markets

Mr Lukas Jonas¹, Friederike Hertweck¹, Shihang Hou², Britta Jensen²

¹RWI - Leibniz Institut Für Wirtschaftsforschung, Essen, Germany, ²IAB, Nürnberg, Deutschland

G24-O4 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 29, 2025, 2:00 PM - 4:00 PM

We use a differences-in-differences approach to analyze the local labour market effects of introducing tertiary computer science study programs within commuting zones in Germany, combining administrative

German labour market data with a novel dataset on where and when academic courses were offered. Introducing computer science courses significantly increases the number of employed computer scientists in the treated region, with the supply effect amplifying over time. However, this increased supply is primarily absorbed by the information and communication technology industry, with minimal dispersion into other industries. Despite the substantial increase in supply, wages for computer scientists remain unaffected. While there are some spillover effects on other workers consistent

with endogenous technological change, the shift in local human capital appears to have primarily functioned as an industrial policy, stimulating growth in the local information and communication technology industry in terms of both the number of firms and overall employment.

The process character of vulnerability: dimensions of centre-periphery in narrative interviews about the twin transition

Dr. Anna Davidsson¹, Dr. Martin Hultman², Dr. Sofia Strid³, Dr. Sebastian Svenberg⁴, Dr. Christopher Ali Thorén⁵

¹Gothenburg University, Department of Sociology and Work Science, Gothenburg, Sweden,

²Chalmers University of Technology, Gothenburg, Sweden, ³Gothenburg University, Department of Sociology and Work Science, Gothenburg, Sweden, ⁴Gothenburg University, Department of Sociology and Work Science, Gothenburg, Sweden, ⁵Gothenburg University, Department of Sociology and Work Science, Gothenburg, Sweden

S88-S2 Twin Transition and its Unequal Geography, B2, August 28, 2025, 9:00 AM - 10:30 AM

This paper aims to critically reflect on narrative interview methodology in relation to vulnerability profile of participants in a project about twin transition. A perspective on unequal access to green- and digital technologies will be developed from advancing the centre-periphery dimensions beyond purely regional aspects. The retelling of a process and carrying-out of interviews is told alongside comments on vulnerability and the meaning of inequality under conditions set by the simultaneous digital- and twin transition. The empirical data consists of the Nordic segment of a dataset with qualitative narrative interviews conducted within the project ST4TE, “Strategies for just and equitable transitions in Europe”. The access to green and digital technologies are understood through participants life-stories, anecdotes, relational understandings of self, and the caring for others in challenging or turbulent times. Reflection about the content of the interviews will be done in parallel with reflections on the ability to explore experiences of inequality through narrative interviews as research practice. The centre-periphery dimension is presented as a framework that can be used to problematise relationship between researcher and participant, urban and rural, activity and passivity, and the process character of vulnerability.

Beyond Boundaries: How Entrepreneurs Navigate and Leverage Geographically Unbounded Entrepreneurial Ecosystems

Prof. Ana Daniel¹

¹Universidade de Aveiro, Aveiro, Portugal

G03-O6 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 29, 2025, 9:00 AM - 10:30 AM

Traditionally, the concept of entrepreneurial ecosystem (EE) has provided a place-based perspective on promoting entrepreneurship, especially productive entrepreneurship. Previous research has explored the systemic and framework conditions necessary for fostering entrepreneurship (e.g. Audretsch & Belitski, 2017; Stam, 2015) within specific geographic boundaries, such as cities (Spigel, 2017), communities (Cohen, 2006) or countries (Hechavarría & Ingram, 2019). However, as Audretsch, Fiedler, et al. (2024) highlight, “not everything that needs to be in place for fostering entrepreneurship needs to be in the same place”. This challenges the traditional view that entrepreneurship is primarily shaped by local structures and policies. To address this limitation, the authors introduce the concept of Geographically Unbounded Entrepreneurial Ecosystems (UEEs) - entrepreneurial networks and digital communities that enable access to resources and knowledge beyond physical boundaries. In addition, some authors argue that territorial specificity has diminished relevance in a context of digitalization (Song, 2019; Autio et al., 2018). Driven by globalization, digitalization, and interconnectivity, UEEs allow entrepreneurs to leverage a diverse mix of resources from multiple regions and ecosystems. This perspective aligns more closely with the opportunistic approach entrepreneurs usually adopt, emphasizing flexibility and the ability to navigate global opportunities rather than being constrained by local conditions.

Nevertheless, there remains a limited understanding of how and why entrepreneurs build global networks that connect multiple EE, and how local EE support this process, and how it influences the evolution of EEs themselves (Wurth et al., 2022).

The present study aims to fulfil this gap by assessing how entrepreneurs navigate, leverage, and contribute to both local and global entrepreneurial ecosystems (EEs), particularly within the context of UEEs, through a qualitative approach based on semi-structured interviews with entrepreneurs of a Portuguese EE and data analysis following Gioia et al. (2013)'s approach. Furthermore, it explores the role of local EEs in enabling or constraining these processes and how these interactions, in turn, shape the evolution of EEs themselves.

Understanding these dynamics requires a shift in perspective - from viewing EEs as static, place-bound structures to recognizing them as fluid, interconnected systems that evolve through entrepreneurial agency. Results show that place-based ecosystems provide valuable but sometimes insufficient resources, prompting entrepreneurs to seek external opportunities; local EEs face challenges in engagement, communication, and inclusivity, limiting their impact; entrepreneurs strategically engage with multiple ecosystems to maximize benefits; the decision to integrate into an ecosystem is guided by factors such as logistics, networking, and fiscal incentives.

Assessing Effectiveness of Impact Measurement Tools within the Social Economy

Dr. Zeynep Elburz¹, Özge Ekinçi¹

¹IZTECH, Izmir, Türkiye

G20-O5 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 29,
2025, 2:00 PM - 4:00 PM

Impact assessment; Social Return on Investment (SROI); Cost-benefit analysis; Social economy organizations

Does work from home enhance labour market participation and employment? Evidence from Italy

Prof. Riccardo Crescenzi, Dr. Davide Dottori¹, Dr Davide Rigo

¹Banca D'Italia, Ancona, Italy

G23-O2 Labor Markets, Unemployment, Gig Economy, Digital 'Nomads', Amphitheater II - SAKIS
KARAGIORGAS, August 28, 2025, 4:30 PM - 6:30 PM

We examine how the pandemic-driven rise in work from home (WFH) has affected labour market participation and employment in Italy. Leveraging a unique administrative dataset covering the population of remote workers, we find that WFH has had a positive effect on both activity and employment rates at the local labour market (LLM) level. To address endogeneity concerns, we instrument the observed increase in WFH with its potential, derived from LLM sectoral compositions. Controlling for several demographic and economic factors that could affect the distribution of WFH potential, we find no evidence of pre-trends. We also explore the mechanisms driving our results. The impact is stronger in response to the increase in WFH among women of child-rearing age and in areas with limited childcare services. We also find that the effect is more pronounced in the South and in less densely populated areas. These findings suggest that WFH can play a role in terms of labour market inclusion.

Recreational (night) economy in Turin and Milan

Prof elisabetta ottoz¹, DR Lisa Sella², Professor Francesca Rota³

¹University of Turin CNR IRCRES, TORINO, Italy, ² CNR IRCRES, TORINO, Italy, ³University of Turin CNR IRCRES, TORINO, Italy

G15-O4 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness, Quality of Life, B6, August 28, 2025, 4:30 PM - 6:30 PM

In the last decades, several scholars and policymakers have focused on the opportunities and risks of the night economy. A vibrant night scene is vital to the urban economy, stimulating commercial activities, jobs, and investments. Moreover, it has proved to be a powerful lever of tourism, attractiveness, and regeneration. Nevertheless, the night economy is also a complex, contradictory phenomenon. Night-time recreational activities tend, in fact, to cluster in specific areas within the urban fabric, the so-called Movida neighborhoods, determining tensions with residents. These neighborhoods are thus extensively studied because of their contribution to the creative economy and the conflicts accompanying them in terms of alcohol abuse, foulness, vandalism, criminality, noise violations, and disturbance of public peace. Institutional, social, and cultural contributions represent the majority of the literature on the night economy. In contrast, little attention is paid to its quantification in terms of local units, employees, and turnover and the dynamic analysis of its effects on the sectoral diversification of the local economy. The paper aims to fill this gap assuming the cities of Turin and Milan Movida quarters (Italy) as case study. Using data from Istat database ASIA at years 2018 and 2022 the paper runs an economic analysis of how the night economy changed composition and dimension in the pre- and post-covid period, classifying the local units according to both the type of service they provide and their opening time.

Adapting to Pesticide Regulations through Alternative Biocontrol based Seed Treatments: Importance of the Innovation Ecosystems

Mr Youssef Saadé¹, Ms Armelle Mazé¹

¹Inrae - UMR SADAPT, Palaiseau, France

G03-O3 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 27, 2025, 4:30 PM - 6:30 PM

The seed sector plays a vital role in agriculture, contributing to food security and economic growth. In France, it generates over €3 billion annually and supports more than 12,000 jobs. However, reducing reliance on conventional phytopharmaceutical treatments is a key challenge. Concerns over their environmental and health impacts have led to regulatory changes like Article 83 of the EGALIM law and the European Green Deal, driving the industry toward sustainable alternatives. Alternative treatments such as seed priming and biological control are being explored, but challenges remain in achieving pathogen control. Addressing these issues requires collaboration among stakeholders from various scientific and industrial backgrounds, creating a complex innovation ecosystem at the intersection of biologicals, seeds, and seed technology. This research examines how French seed innovation ecosystems adapt, focusing on industrial districts, local innovation ecosystems, and specialized clusters. The study draws on literature examining innovation ecosystems and the role of technological clusters in fostering collaboration and knowledge exchange. Prior research highlights the benefits of geographic concentration for knowledge transfer but also notes challenges in coordination across institutional boundaries. Theoretical perspectives on knowledge production and dissemination further inform the study, including frameworks on inter-firm collaboration and communities of practice. A mixed-methods approach is used to analyze the structure and dynamics of French seed treatment innovation ecosystems. Key stakeholders, including private companies, public research institutions, and academic organizations, are mapped to understand their roles and connections. Semi-structured interviews provide qualitative insights, while policy documents and industry reports offer context. Network modeling tools like Gephi and Python facilitate intra- and inter-ecosystem comparisons. Findings are validated through stakeholder feedback and triangulation, contributing to theoretical advancements on innovation ecosystems and supporting sustainable agricultural transitions.

High-Speed Railways and Firms Total Factor Productivity: Evidence from a Quasi-Natural Experiment

Prof. Anna Bottasso¹, Prof. Maurizio Conti¹, Prof. Antonella Ferrara², Dr. Simone Robbiano¹

¹University Of Genoa, Genoa, Italy, ²University of Calabria, Arcavacata di Rende, Italy

S29-S1 Counterfactual Methods for Regional Policy Evaluation, E1, August 28, 2025, 4:30 PM - 6:30 PM

The focus of this study is to assess the causal impact of the connection of a local area to a high-speed rail network (HSR) on firms' total factor productivity (TFP). The quasi-random location of the HSR station in the Italian city of Reggio Emilia is exploited in a Difference-in-Differences research design applied to a large sample of firms, observed over the period 2010-2018. The results suggest that the opening of the HSR station improved treated firms' TFP by about 5%; in particular, such effect is larger for firms closer to the HSR station and slightly increases over the sample period. We also find that the impact of the connection to the HSR station is heterogeneous across industries and depends on firms' size and past productivity. Overall results are robust to a large number of sensitivity checks and falsification tests.

Climate Change Resilience-oriented policy guidelines for mountain snow tourism destinations and communities. Insights from the Interreg Alpine Space “BeyondSnow” project.

Dr. Andrea Omizzolo¹, Philipp Corradini¹, Agnese Moroni¹

¹Eurac Research, Bolzano, Italy

S79 Viable Solutions Towards Sustainable Tourism in Mediterranean Tourism Destinations, F5, August 28, 2025, 9:00 AM - 10:30 AM

In the Alps, a project co-funded by the European Union through the Interreg Alpine Space Programme called ‘BeyondSnow’ succeeded in getting 10 pilot areas (PWAs) to work on the hot topic of the lack of snow during the winter due to climate change (CC) and its social and economic implications for winter tourism destinations at medium and low altitudes and their communities.

Based on the theoretical and practical findings and experiences gained within the PWAs, BeyondSnow elaborated specific and concrete CC adaptation- and resilience-oriented policy guidelines for mountain alpine tourism snow destinations, targeting tourism actors, local and regional public authorities and decision-makers such as e.g., Destinations Management Organisations (DMOs) and regional development agencies.

The authors aim at presenting these policy guidelines, one of the main results of the BeyondSnow project, believing that what emerged from the project may stimulate further research steps and serve as blueprints for the initiation and continuation of transition processes in other winter destinations and mountain communities of the Mediterranean region for decreasing the snow-dependency of their respective tourism system, strengthening their resilience regarding CC-induced ecologic & socioeconomic effects.

Transition strategies for decreasing the snow-dependency of the Alpine snow tourism destinations: insights from the BeyondSnow project.

Dr. Andrea Omizzolo¹, Philipp Corradini¹, Agnese Moroni¹

¹Eurac Research, Bolzano, Italy

S15 Regional Climate Change Adaptation, G5, August 27, 2025, 4:30 PM - 6:30 PM

Thanks to the support of the Interreg Alpine Space ‘BeyondSnow’ project, in the last two years a group of ten mountain winter destinations at low-medium altitude, conjointly devised new sustainable development paths and transition processes to increase their socio-ecological climate resilience. These are mainly small tourist destinations and communities, spatially distributed across six Alpine countries, differing in size, development level and criticalities, which are very dependent economically and socially on the presence of snow. They opted for these adaptation path because, due to Climate Change (CC), it is very likely that snow cover in the Alps will continue to decrease in the future. In addition to the ecological impacts, they must therefore also consider the socio-economic consequences of decreasing snow cover. They need to maintain or increase their attractiveness for inhabitants and tourists. Authors aim at presenting the summary of the ten strategies, one of the main outputs of the BeyondSnow project, including an overview of the CC adaptation measures developed in each of ten areas as well as a summary of the processes undertaken for their development. Indeed, authors believe that what emerged may stimulate further research steps and serve as blueprints for the initiation and continuation of transition processes in other winter destinations and mountain communities for decreasing the snow-dependency of their respective tourism system, strengthening their resilience regarding CC-induced ecologic & socioeconomic effects.

Climate Vulnerability and Just Investment Strategies in Energy Transition Regions

Ms Sofia Pavlidou¹, Dr Despoina Kanteler¹, Mr Ioannis Karagiannis¹, Dr Panagiotis Pantazis², Prof. Lefteris Topaloglou¹, Prof. Rafaella-Eleni Sotiropoulou¹

¹University Of Western Macedonia, Kozani, Greece, ²University of Thessaly, Volos, Greece

S40-S1 Just Transition Governance: The Challenges of Justice, Place-based strategies and monitoring mechanisms, F12, August 27, 2025, 11:00 AM - 1:00 PM

The process of energy transition necessitates that regions with a long-standing dependence on coal should develop simultaneously strategies that address the need for economic restructuring, social equity and environmental sustainability. This article explores the importance of integrating climate vulnerability data into strategies for economic transformation. The research focuses on three European regions that have traditionally shown high coal dependency, Western Macedonia in Greece, Silesia in Poland and Stara Zagora in Bulgaria. Specifically, the contribution of geospatial analysis to the development of investment decision support tools is explored through the literature review. The empirical research in the 3 reference regions involves questionnaires, interviews and focus groups among experts in the quadruple helix to examine optimal land use strategies in relation to promoting resilience and just transition. The findings aim to contribute to the discussion on regional development strategies for high carbon-dependent regions, emphasizing climate vulnerability, resilience, and sustainability (McCauley & Heffron, 2018; Sovacool, 2021).

Political belief, attitudes toward risk, and behavior on the road

Prof. Danny Ben-Shahar¹, Prof. Stuart Gabriel, Dr. Dana Nayer¹

¹Tel Aviv University, Tel Aviv, Israel

G05-O2 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August
27, 2025, 2:00 PM - 4:00 PM

We utilize unique information on traffic citations to explore the role of political belief in risk-taking behaviors. Information on this little-explored measure of risky behaviors while driving is obtained from the Israel Police for 2019–2022. We identify political belief based on voting outcomes by small statistical area for the 2019 Israel parliament elections. Controlling for local area socio-economic and demographic characteristics, geographic centrality and access, and police enforcement, results indicate substantial variation in risk-related traffic violations by political belief. Consistent with findings in the finance and public health literatures, results show that liberal voters, compared with politically conservative voters, are associated with fewer risky behaviors behind the wheel, as indicated in an average 20–25 percent lower number of risk-related traffic citations. Outcomes are robust across various sample selection and test design specifications.

Digitalization on the Tourism Industry: Trends, Opportunities, and Challenges

Dr. Zeynep Elburz¹, Dr. Karima Kourtiti², Prof Peter Nijkamp²

¹IZTECH, Izmir, Türkiye, ²Centre for European Studies, Alexandru Ioan Cuza University, Iasi, Romania

G15-O5 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness, Quality of Life, B6, August 29, 2025, 11:00 AM - 1:00 PM

Digitalization reshapes the tourism industry, influencing how travellers interact with destinations and businesses. In the İzmir region, a key tourism destination in Türkiye, digital technologies such as online booking platforms, mobile applications, social media marketing, and smart tourism solutions increasingly influence tourism activities. This study examines the impact of digitalization on tourism in the İzmir region by analyzing web-based data from tourism-related platforms, including TripAdvisor, Booking.com, and other travel websites. The study collects data on online reviews, ratings, and digital booking trends using web scraping techniques. Quantitative analysis methods, including trend analysis and statistical modelling, are applied to assess the relationship between digital presence and key tourism performance indicators, such as visitor interest, accommodation demand, and tourist perceptions. The findings will reveal how online engagement influences tourism dynamics in İzmir, highlighting the role of user-generated content, digital reputation, and booking patterns in destination competitiveness. This research will provide data-driven insights for tourism stakeholders, offering recommendations on leveraging digital tools for sustainable regional tourism growth.

Exploring Hyper-Longevity in Rural Europe: Insights from old population in Ourense through the GRANULAR Living Lab Approach

Dr. Breixo Martins Rodal¹, Dr. María Isabel Doval Ruíz

¹University Of Vigo, Ourense, Spain

S55-S1 Taking into Account Diversity to Shape just Rural Futures: Novel Indicators for Resilient and Inclusive Development, Amph 2, August 27, 2025, 11:00 AM - 1:00 PM

In the framework of the European project GRANULAR (Giving Rural Actors Novel Data and Re-usable Tools to Lead Public Action in Rural Areas), we present the context, process and findings of our research on centenarians and old population in the Northwest Iberian Peninsula. The University of Vigo, as one of the 23 GRANULAR partners, leads the Spanish Living Lab, established in this region. Using qualitative methods, we have analysed interviews with elderly people in the province of Ourense (northwest of the Iberian Peninsula). This is a region with one of the highest ageing rates in Europe and is therefore of great interest to understand both the present and the future of Europe as a whole. Furthermore, this study serves to contextualise the use of the participatory methodologies of the Granular Living Labs in a specific research focus by highlighting their value as spaces for cooperation and social co-creation for the collection of meaningful data and indicators.

In the research, we have obtained detailed information about their daily lives, an under-explored area in relation to the holistic health, resilience and adaptive capacity of this population group, as well as their role in the dynamics of the European rural ecosystem. The topics addressed and the analysis conducted not only provide insights into the life trajectory of the interviewees, but also valuable reflections on resilience, adaptation and transformation of rural society. Both the research process and the results obtained underline the importance of Living Labs as a data collection tool and highlight the value of the personal perspectives of hyper-longevity individuals, providing a direct and personalised approach to the study of longevity in rural Spain and Europe.

Mapping Virtualization Stakeholders. Who is in charge of the online-offline flows in urban services?

Prof. Lukasz Damurski¹, Dr Anna Kierzkowska¹, Dr Michał Ciesielski¹, MsC Aleksandra Pilch¹

¹Wroclaw University of Science and Technology, Wroclaw, Poland

G06-O1 Space and Digital Transformation, A1, August 27, 2025, 11:00 AM - 1:00 PM

One of the manifestations of the growing presence of the ICT in urban space is the virtualization of services. Depending on the relationship between offline and online channels this process is referred as conversion (when the whole facility is transferred to the Internet) or hybridization (when some components of a facility are offered online but others remain available offline). Due to its elusive character, the impact of virtualization on urban areas is often underestimated by the local planning authorities. As such it requires a systematic research approach, outlining the key challenges and proposing particular recommendations for urban governance practitioners.

In this paper we will present preliminary findings from the foresight for urban services in Europe. The main objective of this part of the study is to define the list of stakeholders who are in charge of the virtualization processes and analyse the relationships between them.

The so-called ‘stakeholder mapping’ has been used for distinguishing urban services actors. It involves the identification of particular groups, their interests, possible impacts and influences, as well as their interactions within the process. Stakeholder mapping is not a one-time process though – it requires constant monitoring and revision in order to capture the versatility and dynamics of virtualization phenomena. A stakeholder map can help to visualise different qualities and affiliations of stakeholders, considering legitimacy, resources, and networks that are crucial for the issue at stake.

In this study we have defined a general list of individuals, institutions and organizations who are related to the urban services sector, and in particular to the virtualization phenomena. We have conducted a systematic literature review and semi-structured interviews with carefully selected respondents in order to get a general picture of the stakeholder ecosystem. It involves: (i) public authorities of various levels (national, regional, local) who are in charge of urban governance and spatial decision-making processes; (ii) private companies providing both online and offline urban services (like shops, banks, restaurants etc.); (iii) private companies providing ICT services to urban services providers (like developers, graphic designers etc.); (iv) researchers specialized in urban services sector studies; (v) urban planners and spatial managers.

As a result, we have obtained a comprehensive description of the stakeholders involved in the virtualization processes and a general overview of relationships between them. The findings may be useful for future research on the expected changes in urban areas and for urban policy-making.

Regional manufacturing bases in the EU and their relevance for income and growth.

Dr. Martin Mariš¹

¹University of agriculture, Nitra, Nitra, Slovakia

G01-O9 Urban, Regional, Territorial and Local Resilience, B5, August 29, 2025, 11:00 AM - 1:00 PM

Restoring the competitiveness of the European manufacturing sector and closing the innovation gap with the US and China remain key priorities for the EU. The European Commission, as the EU's principal executive body, primarily relies on regulatory simplification and reforms in fiscal, labour, and industrial policies, implemented mainly at the member-state level (Competitiveness Compass for the EU, 2025). This paper revisits traditional location-based theories to explain regional competitiveness in the EU manufacturing sector, emphasizing the role of industrial density in shaping economic performance. There is considerable variation in industrial density among the EU member states on the regional level. There is evidence that regions with significant manufacturing bases are prone to innovate and retain the competitiveness advantage in the global environment (Porter, 1990, 1998), able to attract skilled workers with significant spillover effects (Marshall, 1890) and realize the economies of scale (Krugman, 1991).

The central focus of the study is the manufacturing employment density measured as the number of workers employed in manufacturing per kilometre square at the NUTS3 regional level. Within the research scope, one basic sample and two subsamples are determined:

- Manufacturing density of regions – includes all EU NUTS3 regions.
- Manufacturing hubs – regions with the highest manufacturing density, where industrial activity is concentrated
- Manufacturing deserts - regions with the lowest manufacturing density, highlighting industrial decline or underdevelopment areas.

In particular, geographical distribution and the potential appearance of "spread" and "polarization" effects between the manufacturing centres among the regions are investigated using spatial analysis methods. For this purpose, the Cluster and Outlier Analysis (Anselin and Local Moran's I) and Incremental Spatial Autocorrelation will investigate spatial relations at the regional level. Finally, the economic implications of manufacturing distribution among the research samples will be evaluated. There is a relatively extensive body of evidence on applying individual regional development theories worldwide in later economic policy formulation (Pitelis & Kelmendi, 2011; Maier & Tödling, 1998; Fratesi, 2023; OECD, 2018).

This paper's novelty lies in its integrated approach to linking manufacturing employment density with location-based competitiveness. It provides empirical evidence on the spatial dynamics of industrial localization. The findings offer valuable insights for regional policy, with implications for income distribution and economic growth.

Walking school buses in the city of Ferrara. A qualitative analysis through social capital theory.

Dr. Giuseppe Rocco¹, Professor Susanna Mancinelli²

¹University Of Ferrara, Ferrara, Italy, ²University Of Ferrara, Ferrara, Italy

G13-O3 Social Capital, Territorial Capital, Institutions and The Commons, G4, August 29, 2025, 9:00 AM - 10:30 AM

Over the past seven decades, the private car has increasingly symbolized connectivity, social inclusion, and status, contributing to higher automobile usage. This trend has led to significant environmental, economic, and societal challenges, including increased greenhouse gas emissions, air and noise pollution, climate change, traffic fatalities, and health issues like obesity and physical inactivity. As a response, active transportation, especially walking, has gained prominence as a promising strategy to mitigate these concerns while providing community-level benefits, fostering social interactions, and building social capital. Europe's focus on sustainable mobility and children's physical health since the late 1990s has led to initiatives like Walking School Buses.

This study explores the barriers to full adoption and the challenges encountered by the Walking School Bus service in Ferrara. Using a qualitative approach, the research utilizes semi-structured interviews to collect data from municipal managers, school managers, and parents. Through thematic analysis, five key themes were identified: "social capital," "service considerations," "environmental sustainability," "service interactions," and "willingness to participate." These themes highlight the influence of parental social structure, parents' perspectives on the service, sustainability practices, factors guiding parental decisions, and reasons for low participation or service discontinuation. The findings provide valuable insights to inform policymakers and enhance the implementation of such services.

Labour market and graduate unemployment in Tunisia: technological and social innovation to improve employability

Prof. Tizaoui Hammad¹, Dr. GARRAOUI THOURAYA²

¹Tunis University-tunisia, Tunis, Tunisia, ²University of Tunisia, Tunis, Tunisia

S74 Entrepreneurship, Innovation and Sustainable Development, Amph 3, August 29, 2025, 11:00 AM - 1:00 PM

Innovation plays a crucial role in making the labour market more fluid and in combating unemployment in general, and graduate unemployment in particular, throughout the world and in Tunisia. It adjusts labour supply and demand in the labour market. In developing countries, and in Tunisia in particular, around half of this market is occupied by the informal sector, which is not very receptive to technological innovation. In this proposal, we explore the impact of ICT use on the employability of unemployed graduates in Tunisia. Our proposal is based on extensive fieldwork and studies that have produced commendable results in the capital Tunis, Tunisia. Based on fieldwork carried out in 2021 with more than 400 graduates living in Greater Tunis, we have been led to consider the contribution of innovation, in its broadest sense, to improving the employability of jobseekers in the 'unemployed graduate' category.

The first level of innovation concerns the institutional sphere, thanks to the public reforms of labour policy and the development of skills that the Tunisian state has been able to put in place using technological and organisational innovations. From a government perspective, innovation can help to align education with market needs and create dynamic labour markets. For graduates, innovation can be seen in three key stages. First, the development of their skills, which can be enhanced through online learning platforms such as Coursera and Udemy, coaching career coaching and mentoring via LinkedIn Learning, and virtual workshops offering practical training. Secondly, the job search is made more efficient through digital job portals such as LinkedIn and Indeed and others existing on the Tunisian market and dedicated to executives, social media such as Facebook, computer-assisted CV creation tools and virtual networking events that connect graduates and recruiters. Thirdly, recruitment and employment opportunities are being expanded through remote and hybrid working, freelancing on platforms such as Upwork and Fiverr, entrepreneurship through social media and e-commerce platforms, and personal branding via LinkedIn and online portfolios. By integrating innovation into every stage of the employment process, graduates can improve their job prospects and adapt to changing labour market demands.

Last but not least, and combining technological and social innovation, is the organisation of mass social movements via social networks, mainly FB, to assert the rights of unemployed graduates.

Supplemental reindustrialisation in Hungary: Transcending the development trap

Dr. Gabor Lux¹

¹HUN-REN CERS Institute For Regional Studies, Pecs, Hungary

S68 The Role of Foreign-Owned Companies in Regional Development: Opportunities and Challenges in a Double-edged Relationship, A5, August 28, 2025, 4:30 PM - 6:30 PM

This paper discusses ongoing reindustrialisation processes in Hungary as an example of the evolving geographic complexity of industrial development in Central and Eastern Europe (CEE). Foreign Direct Investment (FDI) has played a key role in reintegrating CEE regions into global value chains as part of an “integrated periphery”, but this growth model has also come with trade-offs, and shown exhaustion recently in the form of an emerging regional development trap. Simultaneously, the spatial patterns of industry have become more complex as deepening integration, industrial upgrading, and geographic expansion have taken place in different regional contexts. This paper introduces the concept of supplemental reindustrialisation to explain this shift from the emergence of integrated peripheries in CEE to an era where the FDI-driven growth model undergoes internal transformation while facing increasing growth constraints resulting from the exhaustion or “inversion” of previous competitive advantages. The paper thus explores the regional development contradictions of the FDI-based development model, highlighting the emergence of the regional development trap, and the exhaustion of the current growth path. These phenomena are then examined in the context of ongoing reindustrialisation in Hungary, using county-level data and further evidence to capture the complex geographies of supplemental reindustrialisation, simultaneously characterised by geographic broadening, deepening FDI embeddedness, but also evident growth limits in the successful areas of post-socialist industrial development. The paper untangles the emerging spatial patterns and driving forces of this process, while examining the policy implications of supplemental reindustrialisation within the context of new European and CEE industrial policies.

Spatial planning and ecological networks: hints from the Interreg Alpine Space PlanToConnect project.

Dr. Andrea Omizzolo¹, Peter Laner¹, Alessia Pilati¹, Dr. Filippo Favilli¹

¹Eurac Research, Bolzano, Italy

G25-O1 Enriching Research and Policy Methods in Regional Science: Digital Tools, Artificial Intelligence, Participatory Methods, Mapping Techniques, Stakeholder Involvement, Amph 3, August 27, 2025, 11:00 AM - 1:00 PM

Functioning ecological corridors between protected areas are fundamental for biodiversity. However, the integration of conservation measures in landscapes outside protected areas in the Alpine spatial planning systems is lacking and pressures of human activities are increasing, such as the recent acceleration in the renewable energy development. Therefore, the Interreg Alpine Space “PlanToConnect” project recently has developed a model for a coherent ecological network of protected areas in the Alps and demonstrated how it can be broken down to regional and local scales. Based on the existing approach of the Continuum Suitability Index and Strategic Alpine Connectivity Areas, a structural ecological network model to connect protected areas and highly natural areas in the Alps was elaborated by a least-cost-path analysis. The model was used in the study region South Tyrol, and it was cross-checked with a regional GIS model for red deer. First verifications of the linkages were conducted by site visits and tracking snow trails on local level.

Authors aim at presenting the process and the result of the application of the model to the pilot region of South Tyrol, believing that what emerged may stimulate further research steps and serve as blueprints for improving and securing the permeability for wildlife species and the designation of wildlife corridor at different level of spatial planning. The analysis presented could offer concrete tools for planning administrations to facilitate transboundary efforts and enhance ecological networks at both regional and local levels.

Quality of life in cities: how to guide municipal governance?

Prof. Angela Stefania Bergantino¹, Dr. Mario Intini¹, Dr Michele Vitagliano

¹University of Bari, Bari, Italy

S89-S2 Empirical Evidence and Policies for Sustainable and Resilient Cities and Territories, G4, August 29, 2025, 2:00 PM - 4:00 PM

The concept of quality of life has evolved significantly over time, moving beyond economic well-being and life expectancy to encompass a broader range of factors. It is now defined as the degree of satisfaction individuals derive from their social and physical environments (Mulligan, Carruthers, & Cahill, 2004). This comprehensive approach emphasizes both individual and societal well-being, integrating quality of life indicators into public policy to assess the holistic effects of decisions on daily life.

This paper is designed to furnish decision-makers with the pertinent information required to intervene effectively in specific territories, promoting greater alignment across the area or its particular characteristics while addressing the limitations identified in the existing literature. It seeks to explore the relationships between quality of life and a diverse, more granular dataset, employing machine learning (ML) models to identify the key drivers contributing to increasing territorial disparities and preventing the establishment of uniform quality standards. Unlike the previously discussed literature, which tends to isolate territorial disparities based on a single feature, this paper collects a comprehensive set of heterogeneous variables across a more detailed spatial dimension (NUTS-3 level, or Italian provinces). To achieve this, a combination of data from certified institutional sources and web scraping techniques has been utilized. Furthermore, this paper aims to develop a decision-making tool for policymakers through decision tree representations, ensuring enhanced explainability. More specifically, the approach trains machine learning models to identify the key characteristics relevant for distinguishing differences in quality of life. This is represented by a composite indicator known as the Life Quality Index (LQI), which, by design, aggregates several macro-categories and serves as a benchmark to address territorial disparities across various aspects of life. The proposed methodology is neutral, as it avoids any assumptions of functional dependence between the collected objective characteristics and the target variable, LQI. The insights gained can guide decision-makers in developing strategies to enhance the quality of life in similar settings, even if they are situated in different geographical areas.

Theseus Attica Hub4Circularity Horizon Europe Project, Regional Circular Economy (RCE), matchmaking frameworks for synergies within regional territory

Mr Charalampos Manousiadis¹

¹Institute of Communication and Computer Systems (ICCS), Athens, Greece

S44 The Necessity of Circular Economy implementation in a Regional Context, A1, August 27, 2025,
2:00 PM - 4:00 PM

Special Session 44 is based on Theseus Project, exploring the necessity of implementing Circular Economy (CE) in a Regional Context. The Theseus Attica Hub4Circularity (H4C) Horizon Europe Project is the first of a kind H4C that will be established in Greece, beginning in Athens. The project aims to close resource loops with innovative urban solutions and achieve climate neutrality by 2050, in line with P4P goals. Theseus will validate and develop water, energy and material technologies based on regional needs, incorporating digital and robotic solutions, under innovative governance models.

CE is implemented at different levels, as the Industrial Symbiosis (IS), focusing on industrial ecosystems and extending into cities via Industrial-Urban Symbiosis (I-US). Another similar concept is Circular Cities and Regions Initiative (CCRI) having the opposite direction, from urban extending into industrial environment. H4C concept emerges as the next evolutionary stage, combining I-US and CCRI, mainly at regional level, proposing systemic solutions, integrating multiple regional stakeholders and introducing a variety of different operational models, due to the different regional settings and sector needs. H4C will be the main vehicle for the Regional Circular Economy (RCE), which expresses the integration of CE practices into the overall sustainable regional development strategy, based on regional science principles, including economic, social and environmental aspects.

Previous work on identifying and facilitating I-US synergies has been conducted, creating matchmaking frameworks using multicriteria methods, mainly focused on waste streams and stakeholders' compatibility. To support H4C concept, there is a need to align I-US synergies with regional development strategies and relevant regional science methods. A first study of matchmaking for synergies within regional territory is conducted in relevant projects. Theseus will enhance this research, focused on the integration of regional settings, including region's type, characteristics, strategies, resources availability and wastes, infrastructures, special needs or challenges, called as "Regional Scenery", into the matchmaking framework. Based on Regional Scenery, a Profile will be formed aiming to 1) Prioritize the proposed synergies based on the magnitude of the material, water, energy flows or services involved (the "size" occupied and the importance of the specific flows and related sectors within the region); and 2) Assess and further prioritize synergies according to their impact (by fine tuning different impact factors to be specialized to the specific region) into the overall sustainability and related strategy of the Region.

Theseus H4C project, related aspects and the regional framework will be presented in this study.

Gender Fatigue? Framing and Counter-Framing Gender in the Struggle for Equality

Dr. Kamila Borsekova¹, Dr. Ekaterina Yahyaoui², Dr. Maëlle Noir², Dr. Mary McGill², Dr. Jozef Michal Mintal¹

¹Matej Bel University, Banska Bystrica, Slovakia, ²University of Galway, Galway, Ireland

G10-O4 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 29, 2025, 11:00 AM - 1:00 PM

Over the last decade, anti-gender rhetoric has emerged as a cornerstone of illiberal politics across Central and Eastern Europe (CEE), with Slovakia exemplifying this trend. Political actors have strategically redefined “gender” as a divisive and destabilizing concept, framing it as an external imposition that threatens national sovereignty, religious traditions, and social cohesion. This politicization has contributed to growing public fatigue and resistance toward gender-related policies, diverting attention from broader structural inequalities. While existing scholarship has extensively analysed the intersection of anti-gender movements and illiberal governance, less attention has been paid to how the framing of “gender” itself influences public support for equality measures. This paper addresses this gap by drawing on two original empirical datasets. First, we analyse data from the Volebny Kompas 2023 voting advice application (N=134,699), which captures voter attitudes on 39 political, economic, and societal issues. Second, we present findings from a June 2024 survey experiment (N=7,688) that randomly assigned respondents to different versions of an equality statement, systematically varying whether the term “gender” was included. Our results reveal that explicit references to “gender” significantly reduce support for equality-related policies among conservative and Eurosceptic respondents. However, paradoxically, these same individuals express strong backing for policies addressing women’s rights, economic redistribution, and social protections, suggesting that opposition to “gender” as a term does not necessarily imply rejection of equality measures.

We argue that anti-gender politics in Slovakia—and, by extension, the wider CEE region—draw on local historical legacies, religious narratives, and post-communist socio-economic grievances. Rather than signifying a simple rejection of equality, negative reactions to the language of “gender” reflect deeper anxieties about liberal democracy, neoliberal reforms, and perceived external impositions (such as EU directives). By examining how Slovak voters respond differently to variations in equality framing, this paper calls for more nuanced, context-specific communication strategies. We conclude that reclaiming “gender” in public discourse requires greater conceptual clarity, alongside policy initiatives that address socio-economic concerns, if we are to counter the spread of anti-gender narratives and foster democratic resilience.

Strengthening the governance of migration: Lessons learnt from the island of Chios

Dr. Asimina Christoforou¹, Dr. Eleni Gaki², Dr. Danai Toursoglou³, Ms. Jenny Sykala³

¹Panteion University/ Regional Development Institute, Kallithea, Greece, ²University of the Aegean, Chios, Greece, ³Municipality of Chios, Chios, Greece

S42-S2 Strengthening Societal Resilience Through Policy Experimentation, Foresight and Participatory Approaches, D1, August 27, 2025, 4:30 PM - 6:30 PM

In this paper, we discuss the study of the Chios Lab of the Futuresilience project, which focused on the migration influx of 2015 in Chios. The Chios Lab was led by the Municipality of Chios and the Regional Development Institute (RDI) of Panteion University. The aim of the study was to strengthen the governance of migration and build capacities for local resilience to deal with such phenomena in the future. For this purpose, the lab investigated the main factors affecting migration and developed scenarios and policies for dealing with such events by adopting an innovative participatory methodological approach, and by exploring synergies in a multi-level, multi-actor environment.

One of the main reasons for this study is the huge impact of the migration influx, which took place in the heart of the Greek economic crisis, and thus strained resources and created tensions within the local community, including concerns about integration, long-term housing, health, employment, economic impact, and social cohesion. According to the EU, from January 2015 till August 2016, more than one million people seeking international protection, predominantly from Syria, Afghanistan, Pakistan, and Iraq, had entered Greece through Turkey.

The Chios Lab conducted workshops, focus groups, and interviews with multiple stakeholders, representing health, education, governance, the local labour and entrepreneurial institutions. Its study of migration first and foremost revealed that identifying challenges and building local resilience to migration require participatory and multi-stakeholder approaches, which give voice to all interested parties, activate local knowledge and dialogue, and enhance collaboration with regional, national and international actors in the private, public and social spheres. In this manner, we achieve more informed, effective, and just strategies and policies for resilience capacity building. The co-creation activities with local stakeholders brought to the fore the main factors related to the migration crisis, and led to policy actions for strengthening local resilience and the governance of migration in ways that can ensure decent work and living conditions for all community members, both locals and migrants, and can enhance social integration and mutual respect among diverse cultures.

Bohemian Neighborhoods? The economic geography of American artists 1850-1940

Dr. Amir Borges Ferreira Neto¹, Dr. Lukas Kuld², Dr Sara Mitchell³

¹Florida Gulf Coast University, Fort Myers, United States, ²University of Limerick, , Ireland,

³University of Coimbra, , Portugal

G15-O4 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness,
Quality of Life, B6, August 28, 2025, 4:30 PM - 6:30 PM

Florida (2002) argues that the presence and concentration of cultural and artistic occupations (or bohemians) attracts highly skilled, creative individuals, facilitates innovation and entrepreneurship, and drives economic growth. Extensive research has emerged over the last two decades testing these hypotheses, and results provide mixed evidence (Markusen and Gadwa, 2010; Noonan, 2013). We argue that this bohemian label is a misnomer, as those working in cultural and artistic occupations have historically included both bohemians and bourgeoisie. As such, there could be substantial heterogeneity in the within-city patterns of location and clustering within cultural and artistic occupations, as well as patterns of co-location with other industries. In this paper, estimate the concentration and co-location of creative occupations on within-city level following Logan and Parman (2017) We are able to determine how creative co-location patterns vary across city size, region, and urban density, as well as how these patterns shifted over time as the cultural and artistic industries became more professionalized.

Labour Mobility as a Response to Manufacturing Decline: an Empirical Analysis for Italy

Prof. Giulia Bettin¹, Dr. Silvia Mattiozzi¹

¹Università Politecnica Delle Marche - Dipartimento di Scienze Economiche e Sociali, Ancona, Italy
G09-O3 Migration, Mobility Patterns and Impacts Across Space, A1, August 28, 2025, 4:30 PM - 6:30 PM

Globalization had a profound impact on advanced economies, driving down the prices of consumer goods and production inputs while simultaneously contributing to job losses in certain sectors (Dorn and Levell, 2024). Individuals affected by plant closures and mass layoffs often face diminished re-employment opportunities and reduced earning prospects, alongside worsening social conditions. Beyond economic and social consequences, plant closures may also lead to demographic shifts, as individuals reassess their residential choices in response to economic distress, a pattern observed also in the aftermath of natural disasters or political upheavals.

Using a staggered difference-in-differences approach, we investigate how manufacturing decline affected the internal mobility of Italy's working-age population across local labor markets (LLMs) from 2000 to 2019.

The analysis relies on ISTAT microdata tracking residence transfers among Italian municipalities, aggregated at the LLM level. Labor demand shocks are identified by focusing on LLMs designated as areas of complex industrial crises by the Ministry of Economic Development, ensuring that the study captures broader local economic effects rather than firm-specific impacts. The study also explores heterogeneity in migration responses based on individual characteristics — such as gender, citizenship, and age — as well as LLM attributes, including urbanization levels, industrial intensity, and structural conditions.

Preliminary findings indicate a decrease in net migration following industrial crises, due to both reduced inflows from other Italian LLMs and increased outflows towards other LLMs. The results remain robust across different model specifications, alternative DiD estimators, and extended pre-treatment periods. Both Italian and non-Italian citizens exhibit lower net migration, though the effect is apparently driven by increased outflows among foreign citizens. No significant gender differences are observed in migration propensity. Additionally, district-based local labor markets experience a net population decline twice as large as non-district local labor markets. The demographic response to industrial crises is significant in the Center-North of the country but not in the South.

Enhancing Innovation through transport infrastructure: airports expansion and patents in Brazil from 2002 to 2019

Prof. Veneziano Araujo¹, Prof Rosina Moreno², Prof Ernest Miguelez²

¹Federal University Of Sao Paulo, Osasco, Brazil, ²University of Barcelona, Barcelona, Spain

G03-O6 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 29, 2025, 9:00 AM - 10:30 AM

The relationship between transport infrastructure and innovative performance of firms and individuals is a main research topic. Recently, some studies tried to evaluate how investment in transport infrastructure improve innovation in regions. In general, they point that better transport infrastructure reduces travel costs and save time that increases inventors contacts improving innovation in regions. In 2014, Brazil hosted FIFA World Cup and this mega-event motivated a major expansion in airport infrastructure in several cities. Indeed, this event fueled massive investments including a 50% surge in airport capacity in the country. Using data from this period we evaluate how airport capacity correlate with patent activity in Brazil. To do so, we use airport passengers register and patent data filed in Brazil from 2002 to 2019. Since 21 cities had been candidates to venue matches and only 12 were selected to receive investment, we use non-selected candidate cities as a counter factual. Using a fixed effects panel and a difference-in-difference method we estimate the relation between passengers and innovation within 50 miles from the airports. Our preliminary results provide evidence that the more is the number of passengers in a region the more is the innovation. We find an increase in the number of patents in regions that occurred the expansion of the airports, but this result is more pronounced for international coinvented patents. We also perform some additional robustness tests.

Trapped or Moving Up? The Dynamics of Poverty in the United States

Prof. Paul Lewin, Dr. Nadeeka Weerasekara

¹University Of Idaho, Boise, United States

G11-O1 Public Policy Assessment: Inclusiveness and Poverty Alleviation Across Space; Equality in Opportunities and Territorial Justice, A4, August 28, 2025, 4:30 PM - 6:30 PM

This study examines the dynamics of poverty in America, distinguishing between persistent and temporary poverty through an asset-based approach. Traditional poverty measures often fail to capture long-term poverty persistence, overlooking key structural factors determining economic mobility. We argue that some individuals experience temporary poverty due to short-term economic shocks, while others remain trapped in poverty due to insufficient capital endowments. By incorporating asset-based poverty measurement, we can better differentiate between these groups and identify targeted policy interventions.

Capital endowments play a crucial role in shaping individuals' economic positions and their ability to escape poverty. Those in persistent poverty lack the necessary assets to achieve sustained financial stability, whereas those in temporary poverty possess sufficient assets to recover from economic setbacks. This distinction is essential for policy design, as persistent poverty requires structural interventions that help individuals surpass critical asset thresholds, while temporary poverty can be addressed with short-term income support policies.

To refine poverty measurement and inform policy, we adopt the Rural Wealth Framework, which expands the focus from income to wealth and asset ownership. This framework considers multiple forms of capital—natural, cultural, human, intellectual, social, political, built, and financial—that influence economic mobility. By incorporating this broader perspective, we enhance our understanding of how capital endowments impact poverty persistence and recovery.

The research is conducted in three phases. First, we construct an asset index to measure structural and stochastic poverty levels in rural and urban settings. Second, we analyze household characteristics to distinguish between structural and temporary poverty. Third, we investigate asset thresholds required for households to transition out of poverty, using regression models and poverty transition matrices.

This study contributes to poverty research by offering a more precise framework for identifying long-term poverty risks. The findings will help design more effective policies, ensuring that interventions align with the distinct needs of structurally and temporarily poor households.

Trade Impacts on Global Deforestation: Assessing the Effects of the EUDR on Commodity Markets

Mr Jose Victor De Jesus Pereira Borges¹

¹University Of São Paulo, Ibiúna, Brazil

G04-O2 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 27, 2025,

4:30 PM - 6:30 PM

This research seeks to identify the key deforestation-intensive products and commodities, map their countries of origin, and analyze their movement through global value chains. By doing so, it seeks to estimate the potential impacts of trade restrictions on deforestation-linked products, both in international trade and in global deforestation rates. The study will simulate the effects of the EUDR through hypothetical scenarios, with a particular focus on countries with extensive rainforest coverage. This ex-ante analysis will assess the potential outcomes if the EUDR had been in force since 2005, providing insights into its long-term implications for trade and deforestation dynamics

Revisiting the concept of structure and strategic decisions in economic development: an analysis of Big Techs in the Global South

Prof. Ana Claudia Laprovitera Arruda¹

¹Catholic University Of Pernambuco, Recife, Brazil

G06-O4 Space and Digital Transformation, A1, August 29, 2025, 2:00 PM - 4:00 PM

The concepts of structure and strategic decisions have been central to various theoretical approaches in economic development, particularly within the structuralist tradition. Celso Furtado, one of the leading figures of structuralist economics in Brazil, provided a critical analysis of the structural inequalities that hinder economic development in peripheral nations, with a special focus on Brazil.

The notion of structure extends beyond the mere organization of economic sectors or institutions. It encompasses a set of historical, political, social, and economic conditions that shape a nation's development trajectory, either constraining or enabling its progress. These structures, often inherited from the colonial era, have historically reinforced patterns of dependence, inequality, and subordination of peripheral countries to the core economies of global capitalism.

Meanwhile, strategic decisions refer to the fundamental choices a country must make to overcome the constraints imposed by its structural conditions. These decisions involve long-term public policies, critical investments, and actions aimed at fostering economic and technological autonomy. Their ultimate goal is to break the cycle of dependence and underdevelopment by charting a path toward sustainable and inclusive growth.

This article revisits the concepts of structure and strategic decisions in economic development, emphasizing the contemporary relevance of Celso Furtado's work and the structuralists. In particular, it examines the impact of rapid advancements in artificial intelligence and the growing influence of Big Techs on peripheral economies. The structuralist perspective provides a valuable framework for rethinking development strategies that integrate economic, social, and political dimensions while adapting to new global realities.

Cultural Pilgrimage Tourism: A Viable Path to Sustainable Regional Development?

Ms Darina Rojíková¹

¹Matej Bel University, Banská Bystrica, Slovakia

G15-O5 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness, Quality of Life, B6, August 29, 2025, 11:00 AM - 1:00 PM

Tourism is one of the key economic sectors of the European Union, with its impact extending far beyond traditional recreational activities. Among its dynamically evolving forms is cultural pilgrimage tourism, which intertwines spiritual, cultural, and experiential aspects.

Pilgrimage is no longer perceived solely as a religious act. Modern forms of pilgrimage tourism incorporate elements of cultural heritage exploration, the discovery of local architecture and traditions, sustainable travel, and even improvements in physical and mental well-being. This multifaceted approach makes cultural pilgrimage tourism a phenomenon with growing potential. However, a comprehensive theoretical framework defining its relationship with cultural tourism, pilgrimage tourism, and sustainable territorial development is still lacking.

An important question also remains regarding the profile of the cultural pilgrim—who are these travellers, what motivates them, what are their needs, and how do they influence territorial development? The absence of this knowledge complicates strategic planning for infrastructure, products, and services that could effectively support this tourism segment.

The aim of this research is to identify and evaluate cultural pilgrimage tourism as a tool for sustainable regional development. The study builds on the growing recognition of its positive economic, social, and environmental impacts—ranging from supporting local communities and preserving cultural heritage to stimulating regional economies.

This study applies the Delphi method, which, through expert consensus, enables a comprehensive examination of the issue. Experts from academia and practice provide their insights over multiple phases of the research, gradually defining the key characteristics of cultural pilgrimage tourism, the profile of the pilgrim, and its impact on territorial development.

Preliminary findings indicate that cultural pilgrimage tourism represents a unique fusion of spiritual and physical enrichment with the authentic exploration of cultural heritage. In addition to religious motivations, pilgrims increasingly seek personal introspection, relaxation, and a deeper understanding of historical and cultural contexts. Key factors influencing its development include infrastructure accessibility, the digitalisation of information resources, and support from local communities.

The opportunities within cultural pilgrimage tourism primarily lie in strengthening local economies, preserving and revitalising cultural heritage, and fostering community engagement.

Research findings to date highlight the need for an effective development strategy for this segment, incorporating the integration of destinations with local stakeholders, enhanced use of digital tools to deliver authentic experiences, and the sustainable management of pilgrimage sites. This research not only contributes to the theoretical framework of cultural pilgrimage tourism but also provides recommendations for policy-making and development strategies in this field.

Off-Peak truck deliveries at container terminals: the “Good Night” program in Israel - Customers Considerations

Dr. David Bentolila¹

¹Ruppin Academic Center, Kibbutz Kabri, Israel

G05-O3 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 27, 2025, 4:30 PM - 6:30 PM

Avoiding truck congestion and peaks in landside activity is one of the challenges to container terminal managers. The spreading of truck arrivals at terminals can be facilitated by widening the opening hours of terminals at the landside. Israel's Ministry of Transport has instituted the “Good Night Program”, involving monetary incentives for importers and exporters who deliver containers to ports at night. We quantitatively examine the market utility resulting from shifting traffic from daytime to nighttime.

This research presents a continuation to a former study on the Israeli port of Haifa by considering also the customer's considerations as well as the changes in the market utility resulting from shifting truck traffic at deep-sea terminals from daytime to nighttime. The customer's considerations are based on their responses to questionnaires.

For large enterprises - the volume of containers of over 2000 per year, it was found that 35% do not move at night all. 25% of the factories transport less than 2% of the containers at night.

Small and medium sized enterprises – container volume of less than 2000 a year, it was found that 76% do not move at all at night.

We examined these results against data from a questionnaire that was passed on to the transport companies. Most transport companies do not travel at night or do so at very low volumes, on less than 10% of their truck fleet.

It seems that an incentive method by itself is not effective enough, and does not motivate customers to act and find creative solutions to the obstacles they face. To achieve a considerable change in nighttime transport to Israeli ports, more effective methods should be examined.

Interdependence of open governance and new development trends in cities

Ms Katarina Vitálišová¹, Ms Anna Vaňová¹, Ms Mária Vavrušová¹, Ms Darina Rojíková¹

¹Matej Bel University In Banska Bystrica, Faculty of Economics, Banska Bystrica, Slovakia

G19-O2 Urban, Regional and Local Policy Evaluation, G3, August 27, 2025, 4:30 PM - 6:30 PM

The concept of open governance represents a modern approach to public administration, gaining increasing significance due to the progressive development of contemporary technologies. These technologies greatly facilitate access to information, its processing, and its use in decision-making processes, contributing to smarter and more transparent city and municipal management. Moreover, innovative technologies are a key element of new trends in urban development, although their application may vary depending on the specific expectations and objectives of individual municipalities.

This scientific paper explores the relationship between the implementation of the open governance approach and current trends in local development. From a theoretical perspective, the paper identifies the overlaps between open governance theory and new approaches in urban and municipal development. Special attention is given to how the principles of open governance can support sustainability, citizen participation, and the effective utilization of modern technologies in local governance.

The empirical part of the paper presents partial research results from a questionnaire survey conducted among representatives of Slovak district cities in 2024. The aim of the research was to determine the level of open governance implementation in individual cities and to identify which new trends in urban development are most supported by this approach. Based on the collected data, the paper analyses to what extent Slovak cities apply elements of open governance and how they contribute to fulfilling modern development strategies.

The findings of this study provide valuable insights into the current state of open governance implementation in Slovak cities and indicate its further potential in shaping future urban development trends. The research results can be beneficial for public administration professionals, policymakers, and city representatives seeking to introduce modern and efficient approaches to managing municipalities.

Connection of Circular Economy and regional development

Dr. Eleni Gaki¹, Dr Nikolaos-Iason Koufodontis¹

¹University of the Aegean, Chios, Greece

S44 The Necessity of Circular Economy implementation in a Regional Context, A1, August 27, 2025,
2:00 PM - 4:00 PM

The Circular Economy has gained significant attention as a sustainable alternative to the traditional linear economic model, which is inefficient in resource utilization and heavily reliant on fossil fuels. This model promotes resource efficiency, waste valorization, and alternative consumption patterns such as renting and leasing instead of ownership. By adopting Circular Economy strategies, economies can become more resilient, competitive, and sustainable.

Integrating Circular Economy principles into regional development is increasingly seen as a pathway to fostering sustainable economic growth. This approach extends product lifecycles, minimizes waste, and encourages the reuse and recycling of materials. Regional authorities and stakeholders are aligning with national and European strategies to implement Circular Economy practices effectively.

At the regional level, transitioning to a Circular Economy requires tailored strategies that address specific local needs while aligning with broader national and European objectives. These strategies must consider regional economic structures and available resources while ensuring coherence with national policies, such as Circular Economy action plans, to maximize their impact.

At the European level, the European Union's Circular Economy Action Plan (CEAP), launched in 2020, has played a crucial role in guiding regional transitions. It promotes circular practices across industries, waste management, and consumer sectors, encouraging regions to adopt sustainable models that reduce resource consumption and environmental impact.

A key initiative in this context is the Theseus Project, a European effort to establish Greece's first Hub for Circularity (H4C). Focused on promoting Circular Economy practices in the Attica region and beyond, the project aims to integrate circular principles into regional development strategies. One of its primary tasks is the formulation of Circular Economy action plans that provide strategic frameworks for embedding sustainability into regional policies.

This paper explores the relationship between Circular Economy and regional development by analyzing strategic frameworks in the regions involved in the Theseus Project. It examines their alignment with national and European policies and assesses how effectively they leverage Circular Economy principles to drive sustainable growth. Additionally, it highlights the challenges regions face in harmonizing their strategies with broader policy objectives. By offering an in-depth analysis of these frameworks, this paper provides insights into best practices for implementing Circular Economy strategies at the regional level.

The evolution of the “line seabass” labeling process: a comparative analysis of two French regions

Prof. Jean Bonnet¹, Lecturer Bruno Drouot¹

¹CREM - Université de Caen Normandie, Caen Cedex, France

S21 To What Extent Can Territorial Contexts Influence the Strategic Behaviour of Entrepreneurial SMEs, and Vice Versa? Exploration Into the Triple Bottom Line, A5, August 28, 2025, 9:00 AM - 10:30 AM

Consumers in developed countries are becoming increasingly aware of the environmental, social and governance impacts of fishing organisations. (Brécard et al., 2009; Charles et al., 2009; Bronnmann and Asche, 2023, 2017). Depending on the techniques used, fishing can have a greater or lesser impact on the degradation of the sea and fish stocks (Menozzi et al., 2020; Le Bras et al., 2024).

Consequently, consumers are willing to pay more for a better-quality product that is caught responsibly (Lucas and al., 2021). This article compares and analyses the evolution of two labelling approaches in the face of overexploitation of the common sea bass resource.

The overfishing of sea bass has raised questions about the economic sustainability of fishermen reliant on this resource. Fishermen have shown their ability to defend their profession and promote their production by forming part of a social and territorial organisation, (Drouot, 2012, Drouot and Le Corroller, 2019; Bonnet and al., 2025). Various labelling initiatives have faced challenges, with the 'Pointe de Bretagne line-caught bass' label maintained but not the 'Normandy line-caught bass' initiative. Understanding the differences between the two is crucial.

Social and Spatial Integration through Parenthood. An application to the Azorean Islands

Dr. Tomaz Dentinho¹

¹University of Azores, Angra do Heroísmo, Portugal

S14 Migrant Integration Challenges and Policies, F1, August 28, 2025, 4:30 PM - 6:30 PM

Globalization of migration creating new challenges for social and spatial integration within space. The absence of social and spatial integration generates balkanized multicultural societies living in the same spaces. Spatial and social integration promotes cohesion, cooperation, and collective action within communities, build up social capital and reduce disparities. We take parenthood as an indicator of social and spatial integration collect data from a sample of 281 Azorean residents and formulate a Model that estimates the probability of different males and females having a child as a function of the differences in religion, race, age, education, income, and place of birth. We conclude that racial and religious distances are the more important barriers for social integration, age and education do not have a major impact and income has a medium impact. Result indicate that the reduction of economic disparities is the major factor or social and spatial integration.

Disentangle the depopulation process in rural Spain

Prof. Francisco J. Velazquez¹, Prof. David Martín-Barroso¹, Prof. Juan Andrés Núñez-Serrano²

¹Universidad Complutense de Madrid, Pozuelo De Alarcon, Spain, ²Universidad Autónoma de Madrid, Madrid, Spain

G07-O2 Spatial Attributes of (de)Population, Ageing, Loneliness and Demographics, D1, August 28, 2025, 4:30 PM - 6:30 PM

The objective of this paper is to understand and classify the depopulation process of rural Spain into different components and find some structural determinants for this tendency. Firstly, it aims to differentiate between areas (municipalities) that have experienced a historical and ongoing depopulation process over time, and those where depopulation is a more recent, though accelerated, phenomenon. This initial classification helps establish a typology, which leads to a second analysis of the determinants. In the first type of areas, the determinants are "more" structural, derived from their location, and are responsible for the depopulation process. In the second type, the determinants must be sought in the same factors, but in reverse, explaining the population concentration process in cities. In this regard, depopulation is considered the opposite side of agglomeration in cities.

To carry out the analysis, all Spanish population censuses since 1856 have been homogenized, along with the 1842 "quasi-census" – Madoz's dictionary – using the municipal definition of 2020. While other attempts at homogenization have been made, this is the only one that incorporates, with a modern municipal definition, the data available for the 19th century. The aim is to ensure that the observed population trends are not interrupted merely by a methodological change in census preparation (1900) that does not significantly affect the population count. As a result, a historical series of municipal-level population data is available from 1850 to 2020, with decennial information. This is the data initially used to classify the depopulation process. Additionally, as location variables, all physical characteristics – coordinates, altitude, ruggedness, coast, etc. – are available, along with other interaction-related variables such as a market potential measure calculated for each available cross-section, although not related to infrastructure due to the lack of this information.

The provisional results, available at this time, confirm the relevance of some of the location factors, as previously described, in the depopulation process, particularly those related to municipalities showing very long-term historical trends in this regard. Regarding agglomeration factors, two results are evident in some of the specifications. The first is the relevance of market potential, which is a measure that combines the distance to other municipalities along with their population, in the depopulation process, especially in areas where this situation is more recent and intense. The second is that certain population thresholds in the municipalities themselves act as a brake on depopulation.

Wine protected designations of origin as a policy to prevent depopulation: the case of Spain

Prof. Francisco J. Velazquez¹, Prof. David Martin-Barroso¹, Prof. Juan Andrés Núñez-Serrano², Dr. Jacobo Núñez¹

¹Universidad Complutense de Madrid, Pozuelo de Alarcon, Spain, ²Universidad Autónoma de Madrid, Madrid, Spain

G12-O2 Agriculture, Rurality, Agrifood and Rural Entrepreneurship, F1, August 27, 2025, 2:00 PM - 4:00 PM

This paper analyzes the role that Protected Designations of Origin have played in the Spanish wine sector as an element of enhancement and value generation, and as a consequence, becoming a tool that has partially prevented the depopulation of rural areas.

To test this hypothesis, a difference-in-differences model is used, with the dependent variable being the population at the municipal level with a dataset of population at municipality level from 1850 to 2020

With this information and other control variables we first evaluate the effect of Protected Designations of Origin in population dynamics.

In a second analysis we focus on a more recent period (1982-2020), when the majority of current Protected Designations of Origin were established following the adoption of European Union regulations. Additionally, it allows for the use of more precise information at the municipal level from Population and Agricultural Censuses, Agricultural. This allows the incorporation of demographic (age and gender structure), economic (activities chosen by the population, mobility, etc.), and other factors related to agricultural and livestock activity (importance of other productions, property structure, etc.) that could also have contributed to altering the depopulation trend.

The analysis is complemented with location and agglomeration characteristics used in the first analysis. The results show the relevance of the creation of these Protected Designations of Origin in slowing down, or even halting, rural depopulation. The effect is particularly strong in rural areas far from large cities, with certain economic and agricultural activity characteristics. On the other hand, demographic determinants appear to play a marginal role.

To explore whether the mechanism by which Protected Designations of Origin recognition in the wine sector becomes a factor in population retention in the territory could be the generation of economic activity linked to the sector, several complementary analyses are conducted with the second sample, enhanced with information obtained from the Agricultural Farms Structure Surveys (National Statistics Institute of Spain)) and the Surveys on Crop Areas and Yields (Ministry of Agriculture, Fisheries and Food). The first assesses the role of Protected Designations of Origin recognition in the agricultural land dedicated to vineyards for wine production. The second analyzes whether there is an effect on job creation linked to the wine sector in the protected areas. Finally, the effect on agricultural yields and profitability is examined.

Governing Regional Circularity: Exploring Formal and Informal Collaboration in I-US

Dr. Marianna Lena Kambanou¹, Dr. Murat Mirata¹

¹Linköping University, Linköping, Sweden

S44 The Necessity of Circular Economy implementation in a Regional Context, A1, August 27, 2025,
2:00 PM - 4:00 PM

Industrial and Urban Symbiosis (I-US) enables the more efficient and sustainable use of underutilized resources, such as water, energy, residuals, by-products, waste, and infrastructure, through collaboration among local and regional actors. I-US plays a key role in supporting the transition to a circular economy at the regional level. However, successful implementation requires the coordination of diverse stakeholders, such as large industries that traditionally operate in isolation, utility providers, SMEs, technology providers, facilitators, policymakers, research institutions, and emerging business entities that create new value chains.

Given the wide range of actors involved, effective I-US governance models must balance formal governance structures with informal collaboration. Formal governance structures include legally binding contracts between industries, agreements outlining interactions, structured mechanisms for information sharing, the establishment of joint ventures, and the management of shared infrastructure such as buildings, pipes, compressors, waste water processing systems. Meanwhile, informal collaboration through professional networks, trust-based relationships, and knowledge-sharing platforms plays a crucial role in identifying synergies and maintaining long-term partnerships. We find that while informal interactions foster innovation, flexibility, and trust, formal structures provide stability, clarity, and accountability.

By examining case studies of I-US initiatives, this study identifies key formal and informal governance models and explores how they complement each other in facilitating industrial and urban circularity. Findings suggest that while formal governance structures provide regulatory clarity, resource allocation, and risk management, informal collaboration enhances adaptability, stakeholder engagement, and cross-sectoral cooperation. The study highlights the necessity of hybrid governance models that integrate structured approaches with flexible, ad-hoc collaboration to strengthen I-US synergies.

This research contributes to the growing discourse on regional circularity governance by offering insights into the interplay between formal and informal collaboration in I-US. The findings are particularly relevant to regional governments and industrial practitioners seeking to design more inclusive and effective governance strategies that foster I-US synergies in the regional context with the ultimate goal of promoting a circular economy.

Does local fiscal autonomy increase local income? Evidence from Italy

Dr. Benedikt Herrmann¹, Dr. Massimiliano Ferraresi, Dr. Luisa Loiacono, Prof Leonzio Rizzo, Dr Riccardo Secomandi

¹Joint Research Centre, European Commission, Ispra, Italy

G21-O2 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 27, 2025,
4:30 PM - 6:30 PM

Can fiscal autonomy affect per capita income levels? The existing literature shows mixed results on the impact of fiscal autonomy on gross domestic product growth; it often uses crosscountry datasets comparing nations with different socioeconomic contexts. Even when the literature delves into the subnational entities of a nation, either financial indices or institutional dummies are used as proxies for fiscal autonomy; both can entail endogeneity due to either measurement errors or reverse causality. We empirically investigate the impact of fiscal autonomy on per capita income stimulated by the proper use of local financial resources. We do this by exploiting an Italian natural experiment, examining the impact on per capita income of the use of own resources in the municipalities of the Autonomous Province of Trento and the Autonomous Province of Bolzano, which manage almost all their taxes autonomously, compared with the neighbouring regions of Veneto and Lombardy, which manage only a small fraction of the taxes paid by their citizens. We use a spatial fuzzy regression discontinuity design to compare similar municipalities on the border between the pairs of provinces and Lombardy and Veneto. We find that the higher the level of local financial fiscal autonomy, proxied by the ratio of own tax revenue to total revenue, the higher the level of per capita income. The proxy is instrumented using a dummy variable indicating municipalities with institutional fiscal autonomy: those belonging to the provinces of Trento and Bolzano. This allows us to interpret the proxy as an exogenous variation due to institutional fiscal autonomy. We find that a 1-percentage-point increase in financial fiscal autonomy results in a 0.2–0.7 % increase in per capita income. This result seems to be driven by a higher level of employment in the private sector, which provides a conducive environment for businesses and economic engagement.

Territorial effects between natives and immigrants: discrimination and cultural cleavage in Barcelona

Dr. Rosella Nicolini², Mr Juan A. Piedra Peña¹, Dr. José Luis Roig², Dr. Riccardo Turati²

¹University of Oviedo, Oviedo, Spain, ²Universitat Autònoma de Barcelona, Barcelona, Spain

S14 Migrant Integration Challenges and Policies, F1, August 28, 2025, 4:30 PM - 6:30 PM

The scope of our research is to assess the degree of socioeconomic cohesion in Barcelona by referring to the composition of the urban population. Our target is to assess the ways in which groups of immigrants and natives in the city integrate by referring to their choice of location (i.e., place of residence) and whether their integration creates or reduces cultural barriers that could harm the social welfare. The crucial factor driving that effect is the potential interaction that can or cannot be established among natives and immigrants. If that interaction takes place, then the likelihood of achieving social cohesion and possibly limiting the potential drawbacks for polarized or segregated societies is relatively high. From that perspective, the study of the city of Barcelona is extremely appropriate. Since the beginning of the 20th century, Barcelona has ranked among preferred destinations of national and international migrants alike. The city currently hosts important, diverse ethnic groups of immigrants, a condition that makes it vulnerable to the possible creation or consolidation of important segregation effects that can precipitate the fragmentation of urban society, with all of the potential consequences of social instability, as can be perceived when examining other European cities.

Unlike in the literature, we adopt a research strategy that relies on spatial analysis.

First, we assess the relevance of the spatial dimension and the effectiveness of spillover effects across spatial units—in our case, *barris* in Barcelona. The possibility of interaction between individuals belonging to different groups is a clear deterrent of discrimination and cultural cleavage in general. Any initiative that can facilitate the possibility of immigrant–native interaction are definitely welcome as a means to reduce the cultural divide in Barcelona. Last, the dimension of education remains relevant in defining the channel by which the level of income helps to reduce the diversity index. Our results emphasize that a higher level of income helps to reduce the perceived diversity between natives and immigrants. Individuals form such perceptions and beliefs based on several factors, including previous experience, family background, and level of education. Therefore, a deep reading of the results again stresses that the value of education is a primary factor of a higher degree of social cohesion in Barcelona.

Urban Agglomeration and the Relationship Between Environmental Performance and Profitability: Evidence from Global REITs

Dr. Yishuang Xu¹, Dr Voraprapa Nakavachara

¹the University of Manchester, Manchester, United Kingdom

G19-O2 Urban, Regional and Local Policy Evaluation, G3, August 27, 2025, 4:30 PM - 6:30 PM

This study examines how headquarters location in major urban agglomerations weakens the relationship between environmental performance (lower carbon emission intensity) and financial performance (higher profitability) in real estate investment trusts (REITs). Analyzing 375 REITs across 21 economies from 2017 to 2023, we identify a negative, non-linear relationship between carbon emission intensity and profitability. However, this relationship is significantly weaker for REITs headquartered in major urban agglomerations. While environmental performance generally enhances profitability, its impact is diminished in urban agglomerations due to three key mechanisms: weakened environmental differentiation, higher cost pressures, and systemic environmental challenges. In contrast, we find that REITs outside urban agglomerations exhibit a stronger negative relationship between carbon emission intensity and profitability, particularly driven by Scope 2 (indirect) emissions. By highlighting the geographical determinants of corporate sustainability, this study contributes to the discourse on spatial governance in urban agglomerations, emphasizing the need for location specific sustainability strategies and policies.

A Systematic Review of the Literature on SMEs' Strategic Behaviours in Emerging and Developed Countries: Trends and Future Directions

Prof. Jean Bonnet², Prof. Mauricio Castillo-Vergara³, Prof. Marcus Dejardin¹, Prof. Domingo Garcia Pérez de Lema⁴

¹DeFiPP CERPE - Université de Namur & LIDAM CIRTES - UCLouvain, Namur, Belgium,

²Université de Caen Normandie, Caen, France, ³Universidad Alberto Hurtado, Santiago, Chile,

⁴Universidad Politécnica de Cartagena, Cartagena, Spain

S21 To What Extent Can Territorial Contexts Influence the Strategic Behaviour of Entrepreneurial SMEs, and Vice Versa? Exploration Into the Triple Bottom Line, A5, August 28, 2025, 9:00 AM - 10:30 AM

This study analyses SMEs' strategic choices and behaviours in different economic contexts. Research shows significant differences between SMEs in emerging and developed countries due to disparities in economic, cultural, social, and political conditions. SMEs in emerging countries face greater challenges in accessing financial and technological resources, operate in more flexible but less developed regulatory environments, and have limited access to training and education programs. These factors contribute to differences in strategic behaviour.

The study employs a comparative method to analyse SME strategies and public policies across different contexts, comparing developing and developed countries to identify commonalities and differences. Articles from the top 35 journals in the Web of Science database, focusing on SMEs, will be included. The research uses a two-step methodological approach: first, a bibliometric analysis quantitatively analyses existing literature on SME strategic behaviour and public policies in emerging and developed countries. Bibliometric tools identify trends, patterns, and key themes, using visual representations like citation maps and keyword clusters to highlight influential studies and research topics. This analysis aims to identify current trends, measure the impact of SME studies, create a comprehensive knowledge map, detect research gaps, and increase the visibility of SME research. Second, a comparative analysis compares and contrasts SME strategic behaviour and public policies in emerging and developed countries based on bibliometric findings. Theoretical frameworks guide the analysis, summarizing key findings and highlighting differences and similarities in SME behaviour across economic contexts. The study discusses implications for policymakers, practitioners, and researchers, providing recommendations for future research and policy interventions.

Determinants of the location choice of Big Tech firms' R&D internationalization: region-specific or technology-specific? (EPAINOS Paper)

Ms Tingting Liu¹, Mr Deyu Li¹, Ms Kerstin J. Schaefer¹

¹Utrecht University, Utrecht, The Netherlands

S35 The Geography of Innovation: Advancing Knowledge on Industrial Districts and Clusters, E1,

August 29, 2025, 11:00 AM - 1:00 PM

As Big Tech firms such as Google expand their global reach, their internationalization strategies have attracted increasing attention. However, current studies focus mainly on the business expansion of Big Tech firms, and little attention has been paid to their R&D locations. Besides the well-acknowledged region-specific factors, Big Tech firms' R&D is affected by technology-specific factors as well, as their inventions show significant technological heterogeneity. Specifically, Big Tech firms develop both core technologies, characterized by high levels of technological continuity, and application technologies that are beyond enhancing ICTs and are more recombinative. Such technology distinction requires various knowledge bases, yet the underlying mechanisms remain unpacked. Based on patent data in 2010-2020, this study investigates the location choice of Big Tech firms' R&D internationalization, examining the role of knowledge relatedness, i.e., similarity and complementarity, between host locations and Big Tech firms. We expect to find an overall positive association between Big Tech firms' inventions and knowledge relatedness with host regions. Furthermore, Big Tech firms are more likely to locate their R&D in terms of core technologies (core RDI) in regions with a similar knowledge base to ICT fields while locating those related to application technologies (apply RDI) in regions with a complementary knowledge base. This study links evolutionary economic geography to the international business studies, highlights the distinct role of knowledge relatedness, and provides insights for regional innovation policy-making in the digital era.

Telework. From prospects to the actual trends, and from sectors to regions

Prof. Juan R. Cuadrado-Roura¹

¹University C.J. Cela - Madrid., Madrid, Spain

G06-O2 Space and Digital Transformation, A1, August 28, 2025, 9:00 AM - 10:30 AM

As highlighted in the introduction, telework, as a complex phenomenon, can be studied from different perspectives. In this paper we will focus exclusively on its economic and territorial dimensions, exploring the differences that exist when comparing the numbers of teleworkers by country and their recent evolution. The sectoral structure of each economy is a major determinant of telework potential, both now and in the future. But the level of ICT development and the education level play also an important role, as well as the type of jobs. The factors that seem to determine the reduction of their growth expectations in the medium-long term are particularly considered.

--> I am sending an extended Abstract too

--> The complete paper will be ready by presentation

Beyond linear distance: Travel times with(IN) Italy.

Prof. Anna Maria Pinna¹, Dr Vania Licio

¹Cagliari University, Cagliari, Italy

S89-S1 Empirical Evidence and Policies for Sustainable and Resilient Cities and Territories, G4, August
28, 2025, 4:30 PM - 6:30 PM

This paper provides a novel measure of domestic distances within Italy which uses information on the difference between the theoretical travel times (time required to connect two locations without any impediment or congestion factor) and the real travel times (the actual time required at peak hours). Using the distance between the two travel measures provides crucial information on the asymmetric charges on road infrastructure in Italy, which depends on several factors, including the size of the cities, the availability of several transport modalities and the network structure in the economic activities that insist in the wider area. Results of the analysis highlight how differences in domestic distances do not always point to a simple north/south divide of the country. The same kilometre distance can be associated with significantly different travel times in the same macro-region or even in the same NUTS2 region. In this way, the analysis provides detailed evidence of the intervention that policymakers need to facilitate accessibility and promote transportation equality within Italy.

Teleworking and Digitalization: A Spatial Analysis Framework in Portugal in pos-covid times

Prof. Nuno Marques da Costa¹, Dr. Pedro Franco, Prof. Ana Louro, Prof. Eduarda Marques da Costa, Prof. Paulo Morgado

¹CEG/IGOT ULisboa, Lisboa, Portugal

S16 Changing Patterns Of Spatial Mobility During The Twin Transition, A1, August 27, 2025, 4:30 PM - 6:30 PM

Teleworking and Digitalization: A Spatial Analysis Framework in Portugal in pos-covid times

The rise of remote work, particularly teleworking, is a defining feature of the digital transition, reshaping mobility patterns and territorial dynamics. While this phenomenon accelerated during the pandemic, it remains a persistent trend, influencing economic structures, urban-rural interactions, and regional consumption patterns. However, a major challenge in assessing its real impact is the scarcity of consistent and long-term data, particularly at the local scale.

In Portugal, the lack of granular statistical systems limits the ability to track teleworking dynamics over time and across municipalities. To address this gap, we propose a methodological approach that: (1) leverages existing commuting data from censuses and surveys to quantify teleworking trends and their evolution, and (2) identifies territorial patterns of telework adoption, analyzing key economic, social, demographic, infrastructural, and environmental factors.

Using the Portuguese Classification of Professions, we construct an indicator to estimate teleworking potential, which serves as a dependent variable in spatial regression models incorporating major related factors. This approach enables an in-depth analysis of how digital transition dynamics manifest unevenly across territories. The results highlight that while certain variables exert widespread influence, others display significant local variations, underscoring the heterogeneous territorial impacts of digitalization on mobility and accessibility.

By addressing the data scarcity challenge and providing a replicable analytical framework, this research offers valuable insights for policymakers navigating the digital transition's implications for mobility and regional development. Understanding these spatial patterns is key to mitigating emerging territorial inequalities and ensuring that digitalization fosters inclusive and sustainable regional transformation.

The Regional dimensions of the EU-US Productivity gap

Dr. Joaquim Oliveira Martins¹

¹Centre Etudes Prospectives et Informations Internationales (CEPII), France, Paris, France

G02-O6 Regional Growth Models, Competitiveness, and Convergence, B1, August 29, 2025, 11:00 AM
- 1:00 PM

This paper explores the regional dimensions of the productivity gap between the USA and the EU. It uses the OECD regional Database and a taxonomy in five regional types, which allows to capture the exposure to agglomeration. The regional structures and growth regimes in the US and the EU appear rather different. The decomposition of aggregate productivity growth by TL3 region in the US is dominated by regions with large cities, whereas in Europe the regional system is more distributed. The productivity problem in Europe seems to be due both to a lack of agglomeration effects and weak productivity catching-up. This could be labelled as a ‘twin problem’.

What Can Census Data Reveal About Quality of Life? A Comparative Analysis of the Municipalities in the Thessaloniki Urban Complex

Dr. Eva Psatha¹

¹University Of Thessaly, Volos, Greece

S72 From Responding to Adapting and Transforming EU Cities, D12, August 27, 2025, 11:00 AM - 1:00 PM

Measuring urban quality of life (QoL) is a complex yet crucial process for understanding urban dynamics and policy effectiveness. Over the past decade, different methodologies have been developed to assess QoL in Greek cities. In previous research, two composite indicator systems were introduced: DPRD50, a comprehensive framework of 50 indicators derived from 70 variables, and its refined version, DPRD20, which included the most influential indicators and was applied to a subset of cities. These systems required significant data collection efforts from municipalities and various agencies, posing challenges in data availability and standardization.

This presentation develops a new, streamlined system of urban QoL indicators, leveraging existing datasets from the ELSTAT (Hellenic Statistical Authority) census, which takes place every decade. The primary objective is to reduce reliance on data collection from various sources, while ensuring analytical rigor and comparability. The methodology follows a three-step approach: first, the construction of a new composite index, selecting indicators aligned with the previous frameworks; second, a meta-analysis of the existing ELSTAT datasets to assess stability and comparability of data; and third, a comparative analysis across the municipalities in the Thessaloniki Urban Complex, evaluating urban QoL outcomes based on census data. This approach enables a deeper understanding of the shifts in urban QoL measurement and their implications for urban and regional policy.

The findings suggest that census-based indicators may lead to different assessments of urban QoL compared to the existing methodologies, primarily due to data limitations rather than the ineffectiveness of the former. The absence of key variables in census data results in an incomplete measurement of urban QoL, highlighting the need for supplementary indicators. The study concludes by proposing potential additions to the census surveys to enhance their role as an observatory for quality of life in cities and regions.

This research contributes to the harmonization of urban quality of life measurement, facilitating cross- and intra-city comparisons, while reducing data acquisition constraints. The findings offer insights into the applicability of national census data for urban studies and regional policymaking, shedding light on the evolving dynamics of urban development in Greece.

Spatio-temporal analysis of Airbnb data in the Municipality of Athens: Attributes and factors

Ms Maria Kyriakopoulou Deliorga¹, Dr. Panayiotis Manetos¹, Prof. Dimitris Kallioras¹

¹University Of Thessaly, Volos, Greece

G16-O2 Statistical And Econometric Methods of Urban and Regional Analysis, G1, August 27, 2025,

2:00 PM - 4:00 PM

Airbnb constitute a significant urban phenomenon mostly seen in the center of big cities. Their advantages are numerous as owing to these many positions are created (receptionists, cleaners, administrators e.t.c.), many buildings are getting restored and the owners of Airbnb are being provided by an extra income. Consequently they apparently contribute to the development of tourism in a quite energetic way.

The aim of the present study is the special analysis of the variables that affect the revenue the hostess obtain. Effectively it is aimed the detection of those special factors that are used to interpret it and the understanding of their spatiotemporal variation in the Municipality of Athens. A calculated model was created for the needs of research processes and the method of Multiscale Geographically Weighted Regression (MGWR) was used as well. This research was carried out in the interface of GIS and MGWR software. Finally, it was determined the intertemporal comparison and evaluation of the outcomes through the studied years for the month of March.

Short and medium term consequences of exogenous shocks on social infrastructure: natural gas extraction induced earthquakes in the Netherlands

dr Richard Rijnks¹, dr Daragh O'Leary², Dr. Viktor Venhorst¹

¹University of Groningen, Groningen, The Netherlands, ²University of Galway, Galway, Ireland

S38-S5 Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-Trends (ESSPIN),

E14, August 28, 2025, 4:30 PM - 6:30 PM

In this report we set out to investigate the role of regional attractiveness of rural regions, as a pre-market condition, in new firm formation.

Previous studies have shown that rural service delivery is strained due to concentration and government withdrawal. Earlier work shows that those regions that have more favourable pre-market conditions, tend to pull in different people as well as different types of entrepreneurial activity. What is less well known is to what extent lacking favourable pre-market conditions depresses entrepreneurial activity. The literature suggests a bi-directional relationship, where entrepreneurial activity affects regional attractiveness, and vice versa. This study aims to disentangle these two relations and to show the impact of a change in rural attractiveness on entrepreneurial activity. This enables us to disentangle the market response from the pre-market, exogenous, conditions. To do so, we leverage the impact of an exogenous shock, the Groningen earthquakes on entrepreneurial activity. We build on the literature on firm-demographics to establish whether the exogenous shock translated into a change in firm entry- and exit-rates in the affected region. In the models we control for local economic conditions (related and unrelated variety, concentration, and local market size).

The main findings are that increased exposure to earthquakes negatively impact firm entries, with a doubling of the exposure in terms of peak ground velocities leading to a 0.038 point decline in the firm entry rate, while the exposure to earthquakes strong enough to be felt lead to a marginal decrease in new firm formation of 0.012 when looking at all firms combined. There is no significant association with firm exits in either specification. The findings indicate that new firm formation, and relatedly, innovation, new service delivery (Delfmann et al., 2017) are negatively affected by earthquakes. Turning to the more immediate impact on service public goods delivery in rural areas, through social infrastructure, we find that social infrastructure firm entries are not affected by earthquakes.

Energy transitions and the role of actors: A comparative analysis in İzmir and Balıkesir

Ms Melek Gökmeşdan Söyler^{1,2}, Ms Elif Alkay¹

¹Istanbul Technical University, İstanbul, Türkiye, ²Bursa Technical University, Bursa, Türkiye

G05-O5 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 28, 2025, 4:30 PM - 6:30 PM

It is widely recognised that reducing the impacts of global climate change requires a fundamental change and transformation in the way we produce, distribute and consume energy. Energy transitions occur in different ways at different spatial scales. However, spatial scales have been ignored in sustainability transitions studies and the national scale has generally been the focus of the studies. In particular, although there are debates on how energy transition processes occur in regions, our knowledge on this topic remains limited. This has resulted in a lack of competence to understand why energy transitions occur heterogeneously in different places, by different institutions and actors. This study analyses the regime structure and niche development in regional energy transition processes in the context of the shifting roles and interactions of actors. In the energy transition process, both in the transformation of the regime structure and in the emergence of innovations, actors' capacities for action, power relations, visions, competences and responsibilities, and their relations with other actors differ at the regional level. The research takes a qualitative approach and applies a comparative case analysis of the energy transition experiences in two regions of Turkey. In the choice of cases, İzmir and Balıkesir provinces have been considered suitable for the study since they are two provinces with similar development levels, have a high potential in terms of renewable energy resources, are considered as strong investment regions, and prominent in the location preferences of companies producing renewable energy technologies. The research used a semi-structured interview technique in addition to document analysis. Primarily, desk research is conducted and then interviews have been conducted with the private sector, public institutions and NGOs related to the energy sector (interviews are ongoing).

The (tentative) results show that in İzmir region, the development agency has developed visions for energy transformation (Wind Capital and Clean Energy Production Centre) and strengthened the relationship between actors by developing collaborative projects with the private sector, universities and other public institutions in order to transform İzmir into a brand city in renewable energy. However, Balıkesir province lacks strong actors to undertake this role, and the limited number of local firms and their resistance to change are viewed as obstacles to the development of this process. In summary, the activities of various local institutional actors and their interactions reveal that they play an important role in shaping the regional energy transition.

A Spatial Economic Approach to International Trade in High-Quality National Brand Goods and Regional Branding from Developing Countries

Prof. Toshiaki Takita¹

¹Yamagata University, Yamagata, Japan

S12 Place-Based Innovation of Cultural and Creative Industries in Non-Urban and Peripheral Areas:

What Roles for Actors and Policies?, G6, August 27, 2025, 11:00 AM - 1:00 PM

This research deals with a spatial economic model of international trade of national brand goods and services (from branded agricultural products to world-famous animated films). It analyzes the impact of reductions in transaction costs (transportation, traffic communication, and commodity transaction costs) and the formation of quality and brand value on the industrial location of regional brand goods and services in large and small countries. This will clarify the mechanisms behind the home market effect and reverse home market effect caused by the formation of global brands in mountainous and hilly regions of developed countries and in the development of developing countries.

Progress towards universal health coverage as a sustainable development goal (SDG 3.8) in the transformed health system of Türkiye

Dr. İsrail Boyacı¹

¹Istanbul Ticaret University, İstanbul, Türkiye

S66 Sustainable Health: Progress Towards Universal Health Coverage as a Sustainable Development Goal (SDG 3.8) across the Globe, B3, August 29, 2025, 11:00 AM - 1:00 PM

Purpose: This article aims to clarify the progress towards universal health care coverage as a Sustainable Development Goal (SDG 3.8.) in the health system of Türkiye, which was targeted to be achieved with the completion of health reforms under the Health Transformation Program (2003-2013).

Method: In the article, the course of progress in universal health coverage in Türkiye compared to global trends over the years is addressed with comparative descriptive analyses and evaluations that can be input into policy design processes. Data covering 2000-2021 published by the WHO on SDG 3.8.1 Service coverage index (UHC SCI) regarding the provision of health services and SDG 3.8.2.

Findings: It is observed that rapid progress was made in universal health coverage during the Health Transformation Program (2003-2013), which redesigned the Turkish health system in all its dimensions, but this development stalled in the years following this reform program.

Originality: The most current transformation of the Turkish health system has been examined in terms of ‘universal health coverage’ within the framework of the 2030 Sustainable Development Goals (SDGs), and thus the current status and development of the country's health system's health service coverage and financial protection dimensions over the years have been illuminated.

Sharing taxes to get local economic growth and tax compliance?

Dr. Benedikt Herrmann¹, Oleksii Hamaniuk, Prof Felix Rösel

¹Joint Research Centre, European Commission, Ispra, Italy

S22 Taxes, Public Finance and Spatial Development, D12, August 29, 2025, 11:00 AM - 1:00 PM

This study explores the impact of fiscal structure on the tax compliance and local economic growth, focusing on the unique context in Ukraine between 2016 and 2020, during which two distinct fiscal systems operated simultaneously due to the decentralisation reform. Our analysis indicates that transitioning to a fiscal system where municipalities receive a substantially higher share of personal income tax (PIT) results in increased PIT payments even controlling for the night-light index, an economic activity proxy. We attribute these processes to several factors. Firstly, the new fiscal system might stimulate economic growth, leading to an expansion of the tax base as local governments are incentivised to foster local economic development. Secondly, tax compliance might increase within the new framework, aligning with findings from experimental literature on contributions to local versus global public goods. Taxpayers' willingness to pay taxes might increase when taxes are allocated to municipal budgets, making public good provisions more tangible to taxpayers.

European demography in a polycrisis environment – a multidimensional assessment of disruption and recovery 2012 to 2023

Dr. Manuel Wolff¹, Prof. Vlad Mykhnenko², Dr. Tim Leibert³, Prof. Thorsten Wiechmann⁴

¹Humboldt-universität Zu Berlin, Berlin, Germany, ²University of Oxford, Oxford, United Kingdom,

³Leibniz Institute for Regional Geography, Leipzig, Germany, ⁴Technical University of Dortmund, Dortmund, Germany

G07-O1 Spatial Attributes of (de)Population, Ageing, Loneliness and Demographics, A4, August 27, 2025, 2:00 PM - 4:00 PM

The COVID-19 pandemic was a significant traumatic moment for all territories in Europe. As millions fell ill, thousands died and border closures restricted international migration, Europe's population stagnated for the first time since the end of the Second World War. By the last year of the pandemic, it was clear that any discussion of the pandemic's impact on territories must take into account the overlapping effects of parallel shocks and interlocking crises of varying relevance to demographic structures and trends. Between 2020 and 2023, the pandemic led to a significant number of excess deaths, falling birth rates and significant out-migration to previously growing areas such as cities. Russian military aggression in Ukraine since 2022 has forced millions of people to flee the war, leading to huge immigration into European territories - a challenge that reminds policymakers of the so-called refugee crisis of 2015-16. In addition, the legacies of past crises are echoed in recent demographic developments, such as falling birth rates and the subsequent excess of deaths in the aftermath of the financial and economic crisis of 2007-2012. In addition, there are slowly emerging dynamic trends such as the long-term ageing of society, especially in depopulating areas, which led to a situation where the proportion of Europeans aged 65 and over in the total population exceeded 20% in 2018.

While it is increasingly difficult to disentangle the effects of single crises, this paper is interested in investigating how robust territories are with respect to single, agglomerated and recurrent shocks, building on theoretical frameworks of polycrisis and spatial resilience. A robust monitoring assessment of demographic indicators for municipalities in Europe, disaggregated to ensure comparability in collaboration with the Joint Research Centre of the European Commission, maps and characterises the disturbance regimes of European demography between 2012-2023.

In the face of the increasing turbulence and uncertainty of European demographic trends in a context of polycrises, this approach highlights which areas are particularly exposed to certain crises, which show a certain resistance to them, which have the capacity to recover and which do not. Finally, the analysis of the role of births, deaths and net migration in these changes makes it possible to elaborate the multiple role of crisis in a spatially explicit and differentiated perspective in order to inform and support current and future spatial policies in Europe dealing with multiple crises.

From funding to local revitalisation: assessing the role of EU's Cohesion Policy in Romanian territories

Mr Cristian Incaltarau¹, Ms. Karima Kourtiti, Mr. Liviu-George Maha

¹Alexandru Ioan Cuza University Of Iasi, Iasi, Romania

S06-S2 From Vulnerability to Opportunity: Building Resilient and Liveable Cities through Sustainability and Digitalisation, G2, August 28, 2025, 9:00 AM - 10:30 AM

The study's novelty lies in its focus on evaluating the EU's CP as a means to mitigate asymmetric shocks in a time of multiple crises. It delves into the specific context of Romania, a country characterized by notable internal disparities, to conduct a fine-grained territorial assessment of the absorption capacity and actual effectiveness of different EU funding schemes at the local level. These dimensions have been overlooked in the existing scientific literature within this domain. The elements of originality and innovation behind the research project stem from several aspects. Besides identifying the best performers and “cold spots” in terms of European funds absorption (LAU level), the research will provide a fine-grained assessment of the territorial impact of the European Funds in Romania (Romanian Local Administrative Units (LAU) level). With a minimal number of studies examining the effects of the EU funds at the local level, while only focusing on a specific funding programme, our research will capture the whole amounts received during the more recent multi-annual programming period (2014-2020). In addition, the study seeks to carry out more heterogeneity exercises, in order to capture the puzzling variation in terms of ESIF absorption and their impact. Therefore, the units will be grouped into different typologies in order to look for heterogeneous effects, such as: rural vs. urban; level of development; distance from the largest city etc.

Innovative geospatial accessibility KPIs for assessing regional infrastructure endowment

Prof. Angela Stefania Bergantino², Dr. Valentina Costa¹, Prof. Ilaria Delponte¹, Prof. Claudio Ferrari¹, Dr. Mario Intini², Prof. Alessio Tei¹

¹University Of Genoa, Genoa, Italy, ²University of Bari Aldo Moro, Bari, Italy

S90-S1 Transport Policies Shaping Sustainable Cities and Territories, Amphitheater II - SAKIS
KARAGIORGAS, August 29, 2025, 9:00 AM - 10:30 AM

Accessibility is a key-factor for regional socio-economic development, as supported by numerous studies and international initiatives linking regional connectivity to economic performance. Nevertheless, inconsistencies in data availability, standardization, and collection may hamper transferable and comprehensive assessments. This study addresses these gaps by defining innovative geospatial accessibility KPIs to evaluate regional infrastructure endowment and its impacts on socio-economic development, focusing on Italy's NUTS-3 regions. By implementing an hybrid approach, present research integrates infrastructure-based and activity-based measures, thus creating a geodatabase that combines socio-economic, geographical and infrastructural data. Similar database supports advanced spatial queries and geostatistical modelling, thus enabling regional economic assessments. Research questions target the dependency of economic growth rates on connectivity or percolation indexes and the correlation between infrastructure-based accessibility and regional economic structures. Expected outcomes aim to improve regional data maintenance systems and provide insights concerning how infrastructures influence economic growth and specialization. Study findings will contribute to the design of more detailed and targeted economic policies and planning, addressing the limitations of current methodologies and providing a more comprehensive evaluation of regional infrastructural assets and their impacts on economic development and specialization.

The Twin Transition in the UK through Unsupervised-labels of Web Crawl Data

Ms Emerald Dilworth¹, Prof Emmanouil Tranos¹, Dr Daniel Lawson¹

¹University Of Bristol, Bristol, United Kingdom

S88-S3 Twin Transition and its Unequal Geography, B2, August 28, 2025, 4:30 PM - 6:30 PM

When individuals and companies struggle to keep up with new technologies, there can be a wide range of barriers stifling their access, and in turn, many consequences from failing to keep up with the cutting edge.

We look to firms involved in green and digital technologies in the UK to better understand how and where twin transition technologies are developing.

Traditionally researchers have relied on surveys, patent data, and place attribute-based data to investigate such problems. Classification systems such as NACE and SIC are often used, but are not updated frequently enough to classify new industries and technologies well.

Alternative data labelling often hides behind a paywall and a lack of transparency on the labelling procedure.

The temporal lag, poor labelling, or paywall of these data poses a challenge to effective policy design which can drive and facilitate the twin transition.

To address this research gap, we use free to access, monthly updated data at the website level to identify and classify firms involved with digital and/or green technologies in the UK.

We utilise the ``digital breadcrumbs" created simply from the use and adoption of the Web.

From vast quantities of web-crawl data obtained from the Common Crawl, we utilise the webtext to inform if a website has an interest in green and/or digital technologies, by fine-tuning a transformer based language model to label websites, specifically for the task where interested in twin transition technologies.

Analysing the period from 2014 to 2024 allows us to observe temporal changes in twin transition technologies and examine the influence of spatial factors and urban agglomeration on the distribution and evolution of twin transition industries over time.

The taller, the better? Agglomeration determinants and urban structure

Alberto Hidalgo¹, Federico Curci²

¹Universitat de les Illes Balears, Palma de Mallorca, Spain, ²CUNEF, Madrid, Spain

S29-S2 Counterfactual Methods for Regional Policy Evaluation, E1, August 29, 2025, 2:00 PM - 4:00 PM

This study examines the economic impacts of tall building construction in the United States between 2000 and 2017. Using a novel zip-code-level dataset that combines building height data, establishment counts, employment, and housing values, we explore how tall buildings shape local economies. To address endogeneity, we use an instrumental variable strategy leveraging demand and supply factors to isolate the impact of tall buildings on urban economies. Our findings show that tall buildings significantly boost establishments and employment, particularly in business-oriented sectors like offices and hotels. They also foster knowledge-intensive activities, reduce space-intensive sectors such as manufacturing, and lead to housing appreciation. Furthermore, these benefits are concentrated near tall buildings and diminish with distance. Overall, our findings highlight how vertical urban growth fosters economic development and reshapes cities' industrial and spatial organization.

The impact of political alignment on resource rent distribution in Colombia

Dr. Maria Antonieta Collazos-Ortiz², Dr. Pui Hang Wong¹, Prof. David Andrés Londoño Bedoya²

¹Maastricht University, Maastricht, The Netherlands, ²Pontificia Universidad Javeriana, Bogotá, Colombia

G20-O2 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G1, August 28, 2025, 9:00 AM - 10:30 AM

Subnational governments that are politically aligned with the central government tend to receive more fiscal resources than their non-aligned counterparts. However, the motivations behind this remain debatable. While some studies propose that these transfers reward politically aligned regions, others argue that they are intended to buy political support from non-supporting regions. This article revisits this debate using Colombia as a case study. Colombia reformed its royalty revenue-sharing rules in 2012, granting the president greater discretionary power in determining which municipalities could access fiscal resources, thereby inducing an alignment effect. Using municipal-level panel data and fixed-effects models, we find evidence of political alignment. We also observe that the alignment effect is positive for swing municipalities. Overall, our findings underscore the importance of balanced policy design in ensuring unbiased transfer distribution, thus avoiding inequality and inefficiency caused by political alignment.

The Role of Foreign Mobility in Addressing Regional Depopulation in Europe: A Typology of Regions Across Selected Countries

Prof. Marcin Stonawski¹, Prof. Leo Van Wissen²

¹Statistics Denmark / CASPAR, Copenhagen, Denmark, ²Netherlands Interdisciplinary Demographic Institute (NIDI), The Hague, Netherlands

S03-S2 Drivers and Impacts of Migration: New Insights on the Role of Labour Markets, Demographic Change, Human Capital and Networks, G6, August 29, 2025, 9:00 AM - 10:30 AM

The European Union faces significant demographic challenges due to depopulation and ageing, driven by negative natural population change. At the regional level, migration—both internal and international—has become a key factor shaping population dynamics. This study examines the role of mobility of foreigners in population change across regions in Austria, Denmark, the Netherlands, Spain, and Sweden from 2005 to 2022.

Findings show that 70% of analyzed regions experienced population growth, with 42% relying solely on mobility (national and international migration). Notably, in 26% of regions, growth was entirely driven by mobility of foreigners, particularly in Sweden (71%). No region experienced population decline due to foreign mobility alone. However, in 151 regions where depopulation occurred, positive foreign mobility was insufficient to offset negative natural change or native migration losses.

The study identifies five major regional demographic profiles based on population change and components of demographic change (natural change and mobility).

Mobility accounted for over 70% of population turnover, with significant regional differences. Scandinavian countries and the Netherlands exhibited high native mobility, while Austria and Spain relied more on foreign mobility. These findings highlight the crucial role of foreign mobility in mitigating demographic decline and emphasize the need for proper regional policies to address population challenges.

Trade flows, spatial effects and cohesion policy in the EU regions

Dr. Paolo Di Caro, Prof. Ugo Fratesi¹, Prof. Elisa Fusco

¹Politecnico di Milano - DABC, Milano, Italy

G04-O1 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 27, 2025,
11:00 AM - 1:00 PM

The European regions are increasingly interconnected and directly benefit from cohesion policy funds. To jointly study the two phenomena, we combine panel data on regional bilateral trade flows and information on the EU funds and apply a spatial panel origin-destination gravity model. Our empirical analysis points out that EU cohesion policy plays a relevant role for explaining bilateral regional trade flows in Europe. We also find that spatial interactions, both at the origin and destination, are important to understand regional trade flows. Our results are robust to alternative specifications and different sensitivity checks. In policy terms, the analysis points to the need to consider inter-regional and trade effects in the welfare assessment of cohesion policy, as well as to coordinate regional development and market integration policies.

Enhancing Regional Societal Resilience in Attica through Real-World Applications in Water Recovery and Reuse

Dr Klio Monokrousou, Dr. Argyro Plevri¹

¹National Technical University Of Athens, School Of Civil Engineering, Athens, Greece

S44 The Necessity of Circular Economy implementation in a Regional Context, A1, August 27, 2025,
2:00 PM - 4:00 PM

Implementing and validating a range of real-world water recovery and reuse solutions at a local level provides a strategic opportunity to develop a comprehensive and sustainable water management strategy that is easily scalable and seamlessly integrated into a Regional Master Plan for Circular Water and Wastewater Services. As part of the THESEUS project, a wide array of cutting-edge applications will be deployed across selected areas of the Attica region. These include decentralized solutions such as: (i) sewer mining water reuse technologies aimed at enhancing water availability and improving the resilience of urban parks, (ii) Nature-Based Solutions like rain gardens, bioswale systems and green corridors, and as (iii) rainwater harvesting systems installed on the rooftops of schools and other buildings. In parallel, centralized solutions will be tested, including the use of reclaimed water from a particular wastewater treatment plant (WWTP) for fertigation on agricultural fields, assessing both the potential benefits and risks of this practice. Additionally, sewage sludge from the Psyttallia and Metamorfosis WWTPs will be explored as a feedstock, providing valuable insights into resource recovery and the potential for creating closed-loop systems.

For the successful implementation of these initiatives, it is crucial to involve communities and regional stakeholders in the co-creation and co-decision process, ensuring that knowledge is shared and integrated into policy and planning efforts. These practical on-the-ground solutions are designed to mobilize and engage a diverse group of stakeholders including regional authorities, policymakers and potential end users, fostering collaboration and driving broader support for water management initiatives. Collectively, through a practical and scientifically grounded approach, it is attempted to increase societal resilience, enhance the acceptance of innovative solutions, and contribute to the long-term sustainability of the region.

Evaluation of the optimal allocation of fire stations and firefighting units based on the burden of emergency transport operations

Dr. Hiroaki Shirayanagi¹, Mr. Takeshi MATSUYAMA, Dr. Yukisada KITAMURA

¹Osaka Metropolitan University College of Technology, Neyagawa city, Osaka Prefecture, Japan

G19-O6 Urban, Regional and Local Policy Evaluation, G3, August 29, 2025, 2:00 PM - 4:00 PM

The population of Japan has been declining since 2004 and the average age of the population is expected to become increasingly older. The number of emergency calls in Japan has been increasing every year, and has about 1.94 times in the past 24 years (from 3.93 million calls in 1999 to 7.64 million calls in 2023). Moreover, the travel time from the fire station to the location requested by the ambulance has about 1.66 times in the past 21 years (from 6.2 minutes in 2001 to 10.3 minutes in 2022), and the travel time required to arrive at the hospital has about 1.65 times in the past 21 years (from 28.5 minutes in 2001 to 47.2 minutes in 2022), so the burden of emergency transport operations has increased significantly in recent years.

Based on this background, the purpose of this study is to quantitatively discuss the optimal allocation of fire stations and firefighting units from the viewpoints of emergency transport workload in the Kochi City Fire Department. In this study, total transport time per fire station, firefighting unit, and time zone is calculated. The transport time is the sum of time running from the fire station to the location requested by the ambulance, time staying the location requested by the ambulance and time running from the location requested by the ambulance to arrive at the hospital and is an indicator of the workload of emergency transport. We summarize the issues that each station faces regarding workload, and propose measures to improve the assignment of units.

As a result, among the eight stations (four main stations, one branch station, and three sub-stations) in the Kochi City Fire Department, it was the Minami Main Station that presented the over-workload. The total transport time per firefighting unit was 86,044 minutes. The value is the highest among all firefighting units, especially between 9:00 and 21:00. Furthermore, the location of the Minami Main Station, which covers a wide area and is separated from other stations, made it difficult to improve the situation by reorganizing the stations. Furthermore, the arrival time at the hospital is longest among all firefighting units in all time zones, and it was possible to decreasing the workload per unit by working two firefighting units between 9:00 and 21:00.

Exploring higher education “field” and social “milieu” in Turkish Cities

Dr. Eda Yucesoy¹, Mr. Ahmet Salih Odabaş¹, Dr. Alim Arlı²

¹Istanbul Technical University, Istanbul, Türkiye, ²Marmara University, Istanbul, Türkiye

G24-O2 Higher Education Institutions, Universities and Regional Development, Training and Lifelong Learning Policies, F12, August 28, 2025, 4:30 PM - 6:30 PM

Higher education institutions are considered as foundations of economic growth for attracting dynamic labor, services and industries and grounds for innovative practices. The geography of higher education in Turkey has drastically changed with the spreading of higher education institutions from the center to periphery since 1990s. Large state investments for new public universities covering entire country has gone hand in hand with mushrooming private universities, especially in Istanbul. Today higher education in Turkey is formed by a complex system of 208 universities with approximately 20,000 departments, accommodating more than 8.2 million university students (of which 4.6 million are undergraduate and half a million are graduate students). This dispersion of higher education institutions all over the country generates a vibrant yet obscure landscape. While some areas / cities manage to respond to the presence of higher education institutions, others fail despite their advantageous political positions. The distinctive geography of higher education institutions in Turkey produces urban relational systems that call for new tools and analyses.

This paper aims at exploring the relationship between higher education institutions and social characteristics of Turkish cities. Understanding these unique patterns and formulating new perspectives to analyze the complexity of this landscape have become an interesting research topic for us. A novel database is compiled for the research funded by Tubitak (The Scientific and Technological Research Council of Türkiye, project number 119K766). Data covers the 2019 outcomes of university placement test, published by the Higher Education Council and TurkStat 2019 census. The analysis is conducted on a district level in order to locate clusters of specializations, densities and agglomerations that describe the distinctive characteristics of the higher education “field” and social “milieu”.

Analyzing and representing placements of 825.000 students in 922 districts reveal unique spatial typologies through the lens of higher education institutions. The paper adopts a relational mapping perspective, i.e. quantitative inquiry for identifying clusters of higher education institutions and social characteristics of districts. The paper indicates an alternative formation of urban regions and hierarchies in Turkey, based on knowledge-related clusters, social capacities and their competitiveness.

Rule compliance in local administrations: the role of institutions

Prof. Ugo Fratesi¹, Dr Felipe Livert¹

¹Politecnico di Milano - DABC, Milano, Italy

G13-O2 Social Capital, Territorial Capital, Institutions and The Commons, F5, August 27, 2025, 2:00 PM
- 4:00 PM

A large number of studies investigate the role of administrative capacity on regional economic development, the determinants of its effectiveness, how to improve it and which context conditions favour its functioning.

One important aspect of local administrative capacity is the ability of local administrations to effectively implement rules and directions coming from the central government. This may depend on several factors, and partly due to sheer capacity (e.g. in terms of personnel and administrative resources endowment in general), partly to behavioural aspects (e.g. the ownership of the policies), partly to purely political aspects (e.g. the alignment of local authorities with the central government). This paper focuses on the role of local institutions in determining the behaviour of local authorities and uses a unique natural experiment to do it. In fact, the Italian law introduced a compulsory registration of public projects, but only with subsequent reforms this was accompanied with sanctions in case of non-compliance.

This experiment is exploited by looking at the discontinuity introduced in the behaviour of local administrations by the reforms introducing the sanctions. These did not affect the behaviour of some local administrations, while they introduced statistically significant discontinuities in the behaviour of others.

Using a very large database of public project, the presence of these discontinuities in the behaviour of local administrations is first detected and then put in relationship with the level of institutions in the region. In this way, it is possible to demonstrate the extent to which regions with a lower level of institutions had administrations which only complied with the rule after the introduction of specific sanctions.

Do digitalization and institutional capacity improve EU fund access for bridging territorial gaps? Evidence from the Cohesion Policy 2014-2020

Dr. Roberta Barbieri¹, Prof. Benedetta Coluccia², Prof. Francesco Natale¹, Prof. Donatella Porrini³

¹University Of Salento, Department of Economic Sciences, Lecce, Italy, ²Pegaso Telematic University, Department of Management and Economics, Napoli, Italy, ³University of Salento, Department of Cultural Heritage, Lecce, Italy

S56-S3 Digitalization and Inequality: Territorial Disparities and Policy Effectiveness, Amph 2, August 29, 2025, 2:00 PM - 4:00 PM

Government digitalization plays a crucial role in enhancing governance efficiency and facilitating public administration innovation. However, the uneven adoption of digital technologies across regions poses significant challenges, exacerbating economic and social inequalities. At the European level, cohesion policy serves as a fundamental tool for reducing territorial disparities by allocating financial resources to support regional development. Despite substantial EU funding efforts, regional gaps persist, raising questions about the effectiveness of fund distribution. While previous studies have examined the economic impact of EU cohesion policy, limited attention has been paid to the role of digitalization in shaping regional access to European funding. This study addresses this gap by investigating the extent to which government digitalization, in combination with institutional factors, influences the capacity of Italian regions to attract EU financial resources. A quantitative econometric approach is applied to analyze the distribution of EU funds across 20 Italian administrative regions during the 2014-2020 programming period. The analysis focuses on three key funding instruments: the Cohesion Fund (CF), the European Regional Development Fund (ERDF), and the European Social Fund (ESF). A Weighted Least Squares (WLS) model is employed to assess the impact of digitalization (digital infrastructure, literacy, and use) and institutional quality (governance index, corruption, GDP per capita, and inequality) on the amount of EU funds received. Preliminary findings indicate that both digitalization and institutional quality significantly affect regional fund absorption. Regions with advanced digital infrastructure, higher digital competence, and greater digital adoption secure more EU funds, suggesting that strong e-government systems enhance administrative efficiency and fund accessibility. Additionally, well-governed regions with lower corruption levels and better economic conditions attract higher allocations. Conversely, digitally lagging and weakly governed regions struggle to optimize funding opportunities, highlighting the risk of a widening digital divide.

The Spatial Continuum of Healthcare Access: Understanding Inequalities through Individual Characteristics, Amenity Values, and Contextual Factors

Ms Luise Koeppen¹

¹James Hutton Institute, Aberdeen , Scotland

G18 Voting Patterns, Participation, Discontent, Representation, Euroscepticism, B4, August 29, 2025,
11:00 AM - 1:00 PM

This paper examines the spatial continuum of healthcare access, exploring the interplay between individual characteristics, perceived and actual healthcare access inequalities, and contextual factors such as amenity value. Employing a multilevel framework, we investigate how individual demographics, socio-economic status, and access to resources interact with spatial and environmental dynamics to shape healthcare access outcomes. By focusing on both perceived and actual measures of healthcare access, the study contributes to understanding the geography of health inequalities and provides actionable insights for targeted interventions. The withdrawal of government services in a region has long been associated with discontent, this paper examines whether withdrawal of healthcare services is a potential example of this. Drivers of political discontent have thus far been identified as territorial inequalities and socio-demographic inequalities, this paper will attempt to expand this to include structural changes in public sector provisions in detail.

3D printing technology aims students understanding maths and recycling procedure

Dr. Patricia Ikouta Mazza⁴, Professor Maria Mavri², Dr Evgenia Fronimaki³, Mr Dimitris Papandreou¹

¹University Of The Aegean, Chios, Greece, ²University of the Aegean, Chios, Greece, ³University of the Aegean, Chios, Greece, ⁴University of the Aegean, Chios, Greece

S60 The Use of Innovative Digital Technology, Such as 3D Printing, in Education, B1, August 29, 2025,
2:00 PM - 4:00 PM

3D printing is a process that turns digital files into solid objects using a desktop 3D printer. Once the digital files are created, either by using computer design software or a 3D scanner, they are sliced into sections and a 3D printer stacks the raw material into layers. 3D printing uses a new approach in education. As 3D printers and scanners become more affordable, universities and schools are in a better position to purchase more digital manufacturing systems and to train their students in using this technology.

At the European Union level, the mathematics curriculum is primarily aimed at supporting students in decision making and problem solving, using mathematical knowledge and skills. However, there are students who face some learning difficulties related to mathematics. Students usually learn more by “writing” mathematics and less by “thinking” as mathematician. In particular, 6% of students lack mathematical skills and show deficiencies in arithmetic skills, which could be attributed to various cognitive processes. The answer to the need to address the lack of skills could be sought among other areas and fields of knowledge and that of technology and even in the innovative application of 3D printing.

Moreover, the necessary material for 3D printing, called PLA (plastic), could be replaced by a special thread that would be created by students with recycled material while increasing students' interest in protecting the environment and reusing plastics. The goal is twofold, on the one hand the protection of the environment is achieved and on the other hand it produces thread from the plastic, necessary for the use of the printer.

In this light, the application for the 3D-ReMath Project assumed that 3D printing could help primary and secondary school students better understand mathematics and at the same time become familiar with the concept of recycling. The innovation of the 3D-ReMath project, funded by the European Commission, therefore lies in the fact that it managed to combine three different concepts, to create corresponding educational material and to train teachers and students with multiple and beneficial fields such as: 3D printing (cost reduction by creating a special thread instead of buying it), mathematics (introduction of an educational method to reduce inequalities) and ecology (raising awareness on reuse of materials and recycling). Teachers have access to educational material which can introduce the students to a new world where mathematics, 3Dprinting and recycling compose an innovative and sustainable way of living.

The geography of mining and its environmental impact in Europe

Prof. Chiara F. Del Bo¹, Prof. Andrea Bastianin, Mr. Luqman Shamsudin

¹Università Statale di Milano - Dipartimento di Scienze Economiche Aziendali e Statistiche, Milano, Italy

G05-O3 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 27, 2025, 4:30 PM - 6:30 PM

We map the mining sector in Europe, with a focus on Energy Transition Metals (ETMs), and present an in-depth analysis of the environmental impact and associated monetary costs, at the regional level, of extraction activities. We aim to offer a spatially disaggregated view of the current mining projects and associated environmental costs in terms of CO2 emissions and their monetary value. To do this, we collected global warming potential (GWP) data from Life Cycle Assessment Impact Analysis (LCIA) and linked these to their expected monetary value. By considering the full spectrum of sourced ETMs, we map the environmental, physical, and monetary impact of current mining activities in Europe, and understand what a further increase in exploiting European reserves to reduce dependence from abroad and facilitate the green transition, could imply for European regions.

Generational replacement. A critical challenge for the future sustainability of coffee production in Tolima.

Prof. Alexander Blandon Lopez¹, Dr Janeth Gonzalez Rubio¹, Master's Student John Alexander Blandon Castaño²

¹Universidad Del Tolima, Ibague, Colombia, ²Universidad de Ibague, Ibague, Colombia

G07-O1 Spatial Attributes of (de)Population, Ageing, Loneliness and Demographics, A4, August 27, 2025, 2:00 PM - 4:00 PM

Climate change and generational renewal on coffee farms are two fundamental challenges for the future competitiveness of the coffee industry in Colombia. Migration of youth to urban areas among other factors is responsible for this trend and affects mainly small coffee producers.

From the study by Leibovich et al. (2022) it is possible to deduce a demographic trend in the department of Tolima which capital is Ibague, that presents important challenges for the competitiveness of the coffee sector in the region. The gradual decline of the population in coffee-growing households, combined with the ageing of producers and the migration of young people to urban areas, could generate a shortage of skilled labor, particularly critical during harvest periods. This situation is likely to put upward pressure on production costs, as farmers will have to compete for workers.

In the municipality of Ibague, there are 4,515 coffee growers (3,160 men and 1,351 women) who mostly have coffee plantations between 1 to 5 hectares (ha) (65%), followed by less than 1 ha (31.1%); therefore, more than 90% are small and medium producers. The total area planted with coffee amounts to 8,797.6 ha (FNC & IGAC, 2017).

The main purpose of this research is to determine why generational replacement is a critical challenge for the future sustainability of coffee production in the Colombian municipality of Ibague and design strategies to maintain the activity attractive for young producers.

The theoretical framework of the research is supported by two fields of literature, Global value chains and employment and labor studies, in particular the area associated with human resource development. The type of research is quantitative, the scope is descriptive, correlational and analytical, the method is deductive, and the design is non-experimental. A convenience sampling was determined for 37 producers in the municipality of Ibague.

The partial findings of the study show that generational replacement is one of the main challenges faced by coffee producers, where 47.6% of those included in the sample indicate that they have assured family continuity in the coffee activity, while 33.3% have no replacement and 19% are in an uncertain situation. These findings suggest a well-established model of family farming, but with some future challenges for the continuity of these productive units.

Mapping of the Italian Space industry

Prof. Chiara F. Del Bo¹

¹Università Statale di Milano - Dipartimento di Scienze Economiche Aziendali e Statistiche, Milano, Italy

G03-O2 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 27, 2025, 2:00 PM - 4:00 PM

The aim of this contribution is to present a detailed analysis of the Italian Space industry, focusing in particular on the presence of spatial clusters and the evaluation of innovation potential. Results are based on an in depth survey of active firms in the sector, along with additional insights from a Delphi exercise with field experts. Preliminary findings suggest a thriving sector, with significant innovation potential beyond its narrow definition, and characterized by geographic clustering.

Why Do Some Schools Perform Better Than Others? Exploring the Black Box of the School Effect

Prof. Giorgia Casalone¹, Prof. Alessandra Michelangeli², Dr. Jurgena Myftiu³

¹University of Piemonte Orientale, Novara, Italy, ²University of Milan-Bicocca, Milan, Italy,

³University of Bergamo, Bergamo, Italy

S24 Educational Inequalities: Exploring Diverging Territorial Patterns, D12, August 28, 2025, 9:00 AM - 10:30 AM

This study investigates the factors behind the "school effect" or "school value added", defined as the difference between students' actual performance and their predicted performance based on background characteristics. Analysing a nationally representative sample of Italian students who took standardized academic achievement tests in grades 2, 5, and 8 (INVALSI), the paper explores the impact of factors beyond individual characteristics, including the quality of classmates and the attributes of teachers and principals. Regarding teachers, the study examines gender, educational qualifications, experience, and contract type (fixed-term or permanent). For school principals, it considers leadership style (autocratic or democratic), organizational approach, and the school climate they help foster, assessing how these factors may affect students' learning achievements. The literature concerning the teacher value added is extensive (Carrel et al. 2010, Chetty et al. 2014, Barrios- Fernández and Riudavets-Barcons, 2024), whereas the contribution of school principals is less explored, especially in Italy. Utilizing multilevel regression models and factor analysis to uncover latent dimensions such as leadership style and school climate, the analysis investigates how these variables influence student outcomes and reduce the unexplained variance in learning achievements across classes and schools. The findings provide insights into the determinants of school effectiveness, thereby informing educational policy and school management strategies.

3D Printing: a Cultural accelerator for Education

Ms Athanasia Kadrefi⁵, Mrs Athanasia Kadrefi¹, Mrs Maria Mavri², Mrs Dora Chatzi Rodopoulou³, Mrs Patricia Ikouta Mazza⁴

¹University of the Aegean, Chios, Greece, ²University of the Aegean, Chios, Greece, ³University of the Aegean, Chios, Greece, ⁴University of the Aegean, Chios, Greece, ⁵University of the Aegean, Chios, Greece

S60 The Use of Innovative Digital Technology, Such as 3D Printing, in Education, B1, August 29, 2025,
2:00 PM - 4:00 PM

3D Printing is a disruptive and fast adaptive technology. It belongs to a wider group of technologies, Additive Manufacturing. A 3D Printing user needs only one computer and the proper software, in order to print an object. The process begins with designing the object in a CAD program, and through a specific process the file transforms into a .stl file containing all printing factors (speed, volume etc.) ready for print. Through the last years, 3D Printing has expanded its use in multiple sectors such as medical applications, dentistry, automotive even in creating tissues for human bodies through bio-printing. Additionally, there is an increasing interest in the type of materials used in this technology, which makes it possible to print almost everything.

On the other hand, Cultural Heritage is another significant field of research interest. In terms of education, Cultural Heritage plays a crucial role in schools. Students can learn about history and traditions from different countries and cultures. In addition, they can develop a sense of geographical boundaries and learn about places that they may never visit. An efficient heritage education involves a teaching method built on cultural heritage, which incorporates dynamic educational means.

The concept of 3D4CE project, funded by the European Commission, is based on the combination of 3D Printing and Cultural Heritage. More precisely, the main aim of the project was to help raise awareness on the importance of European Cultural Heritage through education, learning and participation of pupils in activities of manufacturing 3D monuments using 3D Printing technology. Through this process, students were able to learn and create on their own, various cultural heritage monuments from EU countries, thus contributing to the dissemination and the promotion of culture among the collaborating institutions. Thus, on the one hand, the students acquired a closer relationship with their region, learning a lot about their culture and history, and on the other hand, they broadened their horizons in terms of cultural representations from the interactive engagement (offered by 3D printing technology) with monuments of other regions and/or countries, which contributed to the development of their European identity. Finally, the great advantage of the 3D4CE project was to keep alive aspects of culture, which are slowly disappearing. The absence of cultural aspects implies changes to social economic and environmental conditions.

Fueling the future: assessing regional investment needs for UK's transition to a hydrogen economy

Dr. Weizhao Huang¹, Professor Nazmiye Ozkan

¹Cranfield University, Bedford, United Kingdom

G05-O5 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 28, 2025, 4:30 PM - 6:30 PM

The UK is at a critical juncture in its energy transition as it strives to meet ambitious decarbonisation targets and achieve net zero emissions by 2050. With the government's commitment to scaling hydrogen as a low-carbon energy carrier, understanding the capital and operational expenditures needed for hydrogen infrastructure is essential. The transition from natural gas to hydrogen presents complex challenges related to technology costs and infrastructure readiness. This paper presents the initial step in developing a comprehensive regional model aimed at quantifying the investment requirements for facilitating a gradual replacement of natural gas with hydrogen in the UK's energy mix.

The model integrates elements of hydrogen production and end-use demand, while accounting for regional factors such as local renewable energy availability, industrial consumption patterns, and infrastructure capacity. Empirical data are drawn from historical UK industrial gas consumption patterns, regional renewable energy potential, and existing cost estimates for hydrogen production technologies. By leveraging insights from recent techno-economic analyses and open energy system models, the model explores a range of investment scenarios to assess the impact of cost uncertainties and policy environments. The study provides policymakers and investors with critical information on the scale of infrastructure investments required to support a regional hydrogen-dominant energy system. As an initial step, the study informs future strategic planning for hydrogen adoption across the UK.

Overcoming Disabilities and Enforce Social Inclusion via 3D printing

Ms Athanasia Kadrefi¹, Mrs Maria Mavri², Mrs Dora Chatzi Rodopoulou³, Mrs Evgenia Fronimaki⁴, Mrs Athanasia Kadrefi⁵

¹University of the Aegean, Chios, Greece, ²University of the Aegean, Chios, Greece, ³University of the Aegean, Chios, Greece, ⁴University of the Aegean, Chios, Greece, ⁵University of the Aegean, Chios, Greece

S60 The Use of Innovative Digital Technology, Such as 3D Printing, in Education, B1, August 29, 2025,
2:00 PM - 4:00 PM

Nowadays, handling people with different types of disabilities is of high attention. Most of the public services such as means of transportation and hospitals want to ensure that all people belonging to these kinds of special groups have equal access to essential resources. In order to successfully accomplish this, people nowadays promote diversity and equality. Education also plays a vital role in this. Inclusive Education aims to break down barriers to learning and create environments where all students feel valued, respected, and supported in reaching their full potential. It recognizes the inherent worth and dignity of every individual and strives to build a more just and inclusive society through Education.

3D Printing (3DP) on the other hand, is a wide-known technology that refers to a process where a digital file is transformed into a solid object. The whole process needs a single user, a computer and a 3D printer. The first step begins with the drawing of the object in a CAD program and then using specific software, the final file is created. There are many types of 3DP techniques, 3D printers as well as other. This gives the opportunity to the users to create a wide range of 3DP objects.

The 3DDeSI project, funded by the European Commission (E.C.), was mainly created to introduce 3DP technology to education and more specifically to compare different types of educational systems (general or special needs schools) to enhance social inclusion in schools. 3DP is a tool that helped students conceptualize and visualize their designs as they developed their work from the development stages of a sketch to the final product. Furthermore, this project promoted socialization aimed at improving interpersonal skills while allowing students to achieve a positive level of autonomy by increasing their involvement, the degree of self-esteem & personal motivation. This project aimed to form a transnational team of partners who would create educational material using the 3DP technology in order to revolutionize the teaching and learning process of both general and special education students, creating opportunities for hands-on, interactive learning while fostering inclusion and acceptance across teacher and student population. The concept and goal of this project are in line with the E.C.'s call for actions that promote the EU Strategy on the Rights of Persons with Disabilities 2021-2030, as well as the SDGs of the UN2030 Agenda for Sustainable Development.

3D Bioprinting: Bioinks for human skin fabrication

Ms Maria Fafaliou¹, Professor Maria Mavri²

¹Quantitative Methods Laboratory, Department of Business Administration, University of the Aegean, Chios, Greece, ²Quantitative Methods Laboratory, Department of Business Administration, University of the Aegean, Chios, Greece

S60 The Use of Innovative Digital Technology, Such as 3D Printing, in Education, B1, August 29, 2025,
2:00 PM - 4:00 PM

Abstract

3D bioprinting is a cutting-edge additive manufacturing technology that combines 3D printing and biofabrication to create complex biological structures such as tissues and organs. This process utilizes bioinks to print viable biomedical components. Among its critical applications, 3D bioprinting of human skin plays a significant role in regenerative medicine, offering potential solutions for wound healing, skin grafting, and pharmaceutical testing, thus reducing the need for clinical trials on human subjects.

The bioprinting process involves three primary techniques: microvalve-based bioprinting, laser-assisted bioprinting, and extrusion-based bioprinting. These techniques differ in precision, cell viability, and printing efficiency. Temperature and pressure regulation are crucial throughout the process, as bioinks contain sensitive biological molecules and living cells that require optimal environmental conditions to remain viable. Hydrogels serve as the primary medium for bioinks due to their ability to retain water and support cellular functions. The solidification or gelation of bioinks after printing is achieved through various methods, ensuring the structural integrity of the printed constructs.

The human skin, the body's largest organ, consists of three layers: the epidermis, dermis, and subcutaneous tissue, each fulfilling essential physiological roles. Successful skin bioprinting relies on careful cell selection, primarily keratinocytes for the epidermis and fibro-blasts for the dermis, to replicate native skin structures. The composition of bioinks is meticulously formulated to meet specific mechanical, rheological, and biological requirements, ensuring proper printability, immunological compatibility, and bio-mimicry of skin tissue.

As 3D bioprinting technology advances, comparative analyses of different bioink formulations, printing methods, and material properties contribute to the refinement of bioprinted skin constructs. Research efforts continue to optimize structural integrity, cell viability, and functional integration, bringing bioprinted skin closer to clinical and commercial applications. This paper presents the fundamental principles, materials, and methodologies involved in 3D bioprinting of skin, highlighting its potential in biomedical engineering and regenerative medicine. Additionally, it aims to identify the most efficient bioprinting method and the optimal bioink composition that ensures the highest cell survival rate, both immediately after the printing process and throughout the incubation period.

Citizens' perception of their quality of life and city smartness in medium-sized Eastern European city

Ms Ioana Bejenaru¹, Mr Bogdan-Constantin Ibănescu², Mr Corneliu Iațu¹

¹Alexandru Ioan Cuza University of Iasi, Faculty of Geography and Geology, Iasi, Romania,

²Alexandru Ioan Cuza University of Iasi, Faculty of Law, Centre for European Studies, Iasi, Romania
S06-S1 From Vulnerability to Opportunity: Building Resilient and Liveable Cities through Sustainability and Digitalisation, E12, August 27, 2025, 4:30 PM - 6:30 PM

Quality of life and smart urban strategies are mutually influential, hinging on “sustainable development” as a foundation, becoming slowly but surely indispensable for urban areas. In this work, we assess how the inhabitants of a highly dynamic city (Iasi, Romania) relate to the authorities’ smart development efforts to improve the overall quality of life for the citizens. This effort has been sustained by implementing smart initiatives at an accelerated pace during the past decade, transforming Iasi Municipality into one of the leading smart cities in Romania. Some of the implemented initiatives are targeting tax payment accessibility for both public transport and municipality taxes, green transport and e-learning. To carry out our analysis, we conducted a large-scale semi-structured survey to acquire various data about their awareness of existing smart initiatives, city mobility, and their “digital life” and evaluate people’s perception of their life quality and what impact smart initiatives have on them. Residents widely recognise and adopt many of the city’s initiatives, significantly influencing their daily lives and improving their overall quality of life. Moreover, we identify and point out some differences between public authorities’ vision and population regarding tax payments, recording complaints and sending notifications, and promoting points of interest for residents and tourists.

Those who create: bohemians, creativity and startup formation in NYC neighborhoods

Mr Jose Blanco-Álvarez¹, Dr. Nadia Campaniello²

¹Universidad de León, Leon, Spain, ²Università degli studi di Torino, Torino, Italy

G03-O1 Innovation, Entrepreneurship and Entrepreneurial Ecosystems, B3, August 27, 2025, 11:00 AM
- 1:00 PM

In the last two decades, the attraction and retention of the so-called creative individuals has been proposed as one of the keys to promote urban and regional development. Despite constituting a fuzzy term, the creativity component can be regarded as a specific type of human capital which is linked to innovation and entrepreneurship processes.

Against this broad consensus in recognizing their relevance, there are conflicting theories in how to maximize the number of creatives. Increasing the investment in education is a necessary but not enough condition as creativity might be driven to some extent by (unobserved) personal traits that cannot be induced or learned only through formal education. There is also empirical evidence showing that mobility increases with the skill level and so the net migration position is the main responsible for the observed agglomeration patterns.

Therefore, some argue that the existing productive structure is the key, as the labor demand of companies is the strongest pull factor for this high skilled (or creative) migration flows. Other theories recognize this point but defend that these individuals have valuable and scarce skills that increase their bargaining power and so they can choose their location considering other factors related to their well-being. A line of research stated that these creative individuals prioritize vibrant cultural scenes and tolerant environments where they can fully express themselves.

In this regard, the “bohemian hypothesis” employs an occupation-based definition of bohemians as those working in arts and entertainment industries and uses their spatial agglomeration as a proxy to signal a tolerant environment. Empirical evidence supporting this hypothesis has been scarce and mostly limited to descriptive analysis with macro data.

This paper employs fine granular data at ZIP code level to offer empirical evidence of the agglomeration of bohemians in New York City neighborhoods being correlated with startup formation rates in the period 2011-2016. The results are robust after controlling for human capital measures, alternative proxies for tolerance, income and living conditions, traditional and cultural amenities and the agglomeration of another economic activities. Furthermore, using full-count census data for 1940 and 1950 and taking advantage of the spatial persistence of creativity over time, we construct an IV where the historical presence of visual artists is interacted with contemporaneous migration flows. The results of these 2SLS regressions provide further support on the causal effect of tolerance on economic activity via their impact on the attraction and retention of creatives.

Social and Economic Regional Convergence in Greece

Mr Panagiotis Artelaris¹, Mr Konstantinos Derdelakos¹, **Ms Georgia Pagiavla**²

¹Harokopio University, Athens, Greece, ²Panteion University, Athens, Greece

S85 Regional Inequality in an Evolving Socio-economic Context, D1, August 29, 2025, 11:00 AM - 1:00 PM

Macroeconomic indicators, such as Gross Domestic Product (GDP), have traditionally been used as a proxy for human well-being. However, many human geographers and economists have recently challenged this mainstream approach, arguing for a broader set of measures that reflect social well-being. Since the ultimate goal of any economy should be to improve human and social well-being, these effects, when possible, should be examined directly through social indicators rather than indirectly through economic measures like GDP. As a result, other social aspects should also be considered, such as life expectancy, educational enrollment and poverty.

The aim of the study is to assess economic and social convergence between regions in Greece over recent decades. Greece has been at the epicentre of significant economic and social changes and continues to experience high levels of regional disparities. The study examines convergence trends using rigorous spatial methods, including inequality indicators, exploratory spatial data analysis, spatial econometrics, and (spatial) decomposition techniques. The results reveal a heterogeneous regional pattern of development in Greece. These findings provide valuable insights for policymakers, helping them better understand and improve the regional development process.

Assessing Regional Resilience and Recovery: Insights from Southern Europe

Mr Panagiotis Artelaris¹, Ms Georgia Pagiavla²

¹Harokopio University, Athens, Greece, ²Panteion University, Athens, Greece

S85 Regional Inequality in an Evolving Socio-economic Context, D1, August 29, 2025, 11:00 AM - 1:00 PM

The 2008 economic crisis and the 2020 pandemic crisis were two significant events of the last several decades that affected most regions of the European Union in different ways. Greece, Spain, Italy, and Portugal were among the hardest-hit countries, particularly during the 2008 crisis. The aim of this study is to assess the resilience of regions in these four Southern European countries at the NUTS 2 level, assessing their ability to react and recover from economic shocks. Despite the lack of unanimity on the concept, economic resilience is, broadly, associated with the ability of an economy to withstand or recover from shocks through adaptive changes and reorganizations to maintain or restore its previous development path or transit to a new, sustainable one.

Two key research questions guide this analysis. The first concerns how crises have influenced regional development and recovery patterns. The second examines the structural characteristics that shape resilience and recovery. To address these, the first step of our empirical analysis is to construct a composite indicator that integrates economic, social, and demographic factors beyond traditional GDP metrics. The second step involves employing spatial econometric models to identify the key factors influencing regional resilience during the crisis and recovery in the post-crisis period.

Nature-based tourism and tourists' wellbeing. Insights from delta regions in Europe

Ms Alexandra Cehan¹, Mrs. Oana Mihaela Stoleriu¹

¹Alexandru Ioan Cuza University Of Iasi, Faculty of Geography and Geology, Iasi, Romania

S82 Well-Being Patterns and Disparities Across European Countries and Regions, F5, August 28, 2025,
4:30 PM - 6:30 PM

The relationship between tourism and wellbeing is a complex one. When referring in particular to nature-based tourism, this relationship is generally regarded from a positive perspective, as tourists' engagement with nature is expected to determine mental and physical benefits for tourists. However, such benefits are highly dependent both on the characteristics of the destinations and on the tourists' behavior. Among the nature-based tourism sites, delta regions stand out since they are rich in biodiversity, represent a paradise for birdwatching and are generally unique places for the exploration of the wildlife. Nonetheless, the manner in which these areas are designed to welcome tourists can have a major effect on the tourists' experience and implicitly on their wellbeing. The current study aims to provide insights regarding the influence of the experiences that tourists have in delta regions on their wellbeing. To reach this aim, online visitor reviews for delta regions from Europe are used, which are analysed by employing both qualitative and quantitative methods. The results emphasize that these nature tourism experiences bring diverse benefits to tourists, dependent on the type of activities that they get involved in, but, at the same time, elements that appear to prevent tourists' wellbeing at the destination are identified. Furthermore, differences are identified between the analysed delta regions regarding tourists' experiences and their relationship to wellbeing, differences which once more stress out the fact that nature destinations do not automatically offer guarantees for the mental and physical wellbeing of tourists, as anthropic factors might interfere and should be considered.

From Crisis to Recovery: Regional Vulnerability and Resilience in Greece Using a Material Deprivation Index

Dr. Thomas Georgiadis¹, Associate Professor Panagiotis Artelaris²

¹Panteion University, Athens, Greece, ²Harokopio University, Athens, Greece

S85 Regional Inequality in an Evolving Socio-economic Context, D1, August 29, 2025, 11:00 AM - 1:00 PM

While the analysis of regional inequalities and well-being using macroeconomic indicators has attracted significant research interest, corresponding analyses based on welfare indicators measured at the individual level remains relatively limited. Utilising information obtained from EU-SILC microdata (at individual level) for the years 2005, 2008, 2011, 2019 and 2023 in Greece, this study aims to provide regional-level evidence on how Greek regions have been affected by the economic crisis and the pandemic across multiple well-being dimensions. This rich database allows us to explore the performance of the Greek regions over a period characterised by significant external macroeconomic shocks, including: i) economic growth (2005, 2008); ii) economic downturn (2011, 2019) and iii) the pandemic (2023). More specifically, this paper aims at addressing the following research questions: 1) What is the state of relative deprivation across Greek regions during the selected years? Are there significant regional inequalities? Has the ranking of regions based on the relative deprivation index changed over time? 2) What were the vulnerability and resilience outcomes of Greek regions over the selected years (including the two crises)? Did regions that were relatively more deprived before the economic crisis exhibit greater vulnerability or greater resilience during the economic downturn and the pandemic? 3) How does the picture of relative well-being vulnerability/resilience outcomes of Greek regions differ when measured using individual-level welfare indicators, compared to conventional macroeconomic indicators such as GDP per capita? What policy implications can be derived from these differences?

In terms of methodology, a composite deprivation index is constructed, to measure household-level relative deprivation across three domains : i) overdue payments; ii) objective well-being; and iii) dwelling conditions. More specifically, we first estimate the relative composite index for each selected year to identify which regions lag behind and by what extent. Then, we pool the data across years to re-estimate the relative deprivation index for the pooled sample, allowing us to examine not only the ranking of each region in each year, but also how they responded to external shocks (testing vulnerability/resilience hypothesis). Through a sensitivity analysis that applies different methodologies to estimate the composite deprivation index, this study provides robust evidence on regional well-being using individual-level data. These findings offer valuable insights for policy design, complementing studies that rely on conventional macroeconomic well-being indicators.

Charting the Course to Just Futures: Empowering Deliberative Democracy through Regional Future Literacy Labs

Dr. Artur Ochojski¹, Prof. Adam Drobniak, Dr. Marcin Baron, Dr. Adam Polko

¹University of Economics in Katowice, Katowice, Poland

S87-S1 Territorial Transitions: Exploring the Scene of Participatory Actions and Common, F5, August 27, 2025, 4:30 PM - 6:30 PM

In the face of profound socio-economic transformations driven by the shift to carbon neutrality, the Horizon Europe DUST project aims to democratize territorial responses to sustainability transitions by maximizing citizen participation and enhancing trust in democratic governance. Recognizing that accountable, transparent, and socially equitable policies are essential—especially for society's least engaged communities—DUST employs Regional Future Literacy Labs (RFLs) that combine innovative design-led territorial, digital, and participatory tools to enable direct citizen engagement in policymaking.

These place-based deliberative tools convene citizens, experts, and policymakers in open dialogue to address regional challenges and co-create just sustainability transition policies. RFL experiments will be conducted in four regions—Norrbotten (Sweden), Lusatian District (Germany), Katowice (Poland), and Stara Zagora (Bulgaria)—with a focus on engaging marginalized communities such as ethnic minorities, youth groups, women, and workers from vulnerable sectors.

Central to the DUST approach is the application of futures literacy, drawing on the UNESCO Futures Literacy Lab (FLL) methodology.

By empowering citizens to anticipate and shape alternative future scenarios, the RFL model emphasizes the regional design dimension—viewing space, place, and territory as vital cultural constructs influencing policy decisions.

Enhanced by e-democracy tools like Pol.is, this framework facilitates large-scale deliberation and proactive positioning in multi-level governance.

The project's findings allow to pragmatically assess if and how these novel instruments empower citizens and communities to anticipate structural changes, build consensus in inclusive decision-making environments, and drive the co-creation of sustainability transition policies that are truly just, inclusive, and responsive to local needs.

The concept of the commons in the planning and implementation of just transition

Dr. Adam Polko¹

¹University of Economics in Katowice, Katowice, Poland

S87-S2 Territorial Transitions: Exploring the Scene of Participatory Actions and Common, G4, August 28, 2025, 4:30 PM - 6:30 PM

This article explores whether the concept and best practices of governing the commons can contribute to the planning and implementation of a just transition.

Climate change and the related energy transition processes represent one of the most pressing global challenges today. Although global in scale, their impacts are primarily felt at the local level, particularly by communities in cities and rural areas. The issue is especially pronounced in marginalized, economically disadvantaged communities, whose voices often remain unheard. The European Commission's policy initiatives under the European Green Deal, aimed at achieving climate neutrality, are frequently misunderstood in the context of widespread disinformation and face resistance from various social and professional groups. Identifying effective strategies and tools to enhance awareness and foster acceptance of these transitions is therefore essential.

Two key perspectives on just transition have been identified: the reductionist perspective and the whole-system perspective (Abram et al., 2022). The reductionist perspective focuses on the immediate negative effects of job losses in fossil fuel-dependent industries, prioritizing technological interventions while treating social, economic, and technological consequences in isolation (Jenkins et al., 2016). In contrast, the whole-system perspective conceptualizes just transition as a complex process involving dynamic interactions across multiple systems. This approach highlights synergies, trade-offs, potential contradictions, and unintended consequences.

The whole-system perspective on just transition aligns closely with the concept of the commons (Ostrom, 1990; Foster & Iaione, 2022; Polko, 2024). Established theoretical frameworks and best practices in governing the commons may offer valuable insights for planning and implementing just transition. This raises several key research questions:

- Is the application of the commons framework a necessary condition for building social and economic resilience in response to climate change and energy transition?
- Can marginalized communities develop greater awareness and acceptance of just transition through commons-based initiatives?
- Is it possible to establish stable local partnerships and communities in collaboration with public authorities through commoning processes that support just transition?

This study employs a mixed-method approach. The first method involves case studies combined with interviews with representatives of urban communities. The second method consists of a social (field) experiment. Both approaches aim to deepen the understanding of planning and implementing just transition in alignment with the principles of governing the commons. The research will be conducted in selected local communities in Polish regions where Territorial Just Transition Plans are in place.

Evaluating the Impact of Cohesion Policy and Horizon 2020 on Regional Growth: The Role of Digitalization Investments

Dr. Anabela Santos¹, Dr. Andrea Conte, Dr. Giovanni Giovanni Cerulli

¹European Commission, Joint Research Centre, Seville, Spain

S57-S1 Cohesion Policy and Industrial Policy: Competition or Complementarity?, Amph 2, August 28, 2025, 4:30 PM - 6:30 PM

This paper investigates the impact of Cohesion Policy and Horizon 2020 funding on regional economic growth, with a specific focus on investments in digitalization. While both funding programs aim to foster innovation and regional development, their combined effect on digital transformation remains insufficiently explored. Using a novel dataset at the NUTS 2 level, we assess how these financial instruments have influenced digital investment patterns and contributed to regional growth. Through econometric analysis, we identify key drivers of synergy between these funding mechanisms and evaluate their role in supporting digital adoption across European regions. The findings provide valuable insights into the effectiveness of EU funding in driving digitalization-led growth and offer policy recommendations to strengthen complementarities between regional and research-driven funding initiatives.

Spatial data disaggregation application in Just Transition monitoring

Mr Yiannis Karagiannis¹, Dr Despoina Kanteler¹, Mrs Sofia Pavlidou¹, Mrs Konstantinia Nikolaidou¹, Dr Lefteris Topaloglou¹

¹University Of Western Macedonia, Kozani, Greece

S40-S2 Just Transition Governance: The Challenges of Justice, Place-based strategies and monitoring mechanisms, F12, August 27, 2025, 2:00 PM - 4:00 PM

In this paper we are going to explore the data disaggregation methodologies that can be used in monitoring Just Transition processes. Data disaggregation methodologies are essential for the success of the "leave no one behind" (LNOB) principle of the 2030 Agenda for Sustainable Development by identifying and addressing inequalities. Data disaggregation is the process of breaking down broad datasets into finer, more specific informational units, of a categorical or spatial nature. By applying these methodologies policymakers, researchers, and organisations can understand how progress toward the SDGs achievement is developing at various hierarchical levels and subsets. One case of specific importance is the spatial data disaggregation of spatial data to lower-level administrative units. Population disaggregation methodologies used in recent decades can be categorised as areal interpolation and dasymetric mapping. Area-based areal interpolation methods are mainly areal weighting and pycnophylactic interpolation. Dasymetric mapping consists of subdividing the source zone into smaller areas that can reflect the spatial changes in the population based on ancillary data. Dasymetric mapping can be categorised into binary dasymetric, multi-class dasymetric, and intelligent dasymetric mapping. Ancillary data used for disaggregation modelling can be land cover, nighttime lights, Infrastructures and Environmental factors. Modern data sources can be open data initiatives, online service providers and data collected through volunteer geographic information activities. The amount of data that can support spatial data disaggregation is increasing. Precision and accuracy of this methodologies and the quality of ancillary data used should always be examined and the results should be evaluated and cross-checked with questionnaires and field surveys.

Socio-professional dynamics as a vector of urban transformability – from vulnerabilities towards opportunities for territorial resilience

Dr. Alexandru Banica^{1,2}, Prof. Gabriela-Carmen Pascariu¹, Prof. Ionel Muntele^{1,2}

¹Alexandru Ioan Cuza University, Iasi, Romania, ²Romanian Academy, Iași Branch, Iași, Romania

S06-S2 From Vulnerability to Opportunity: Building Resilient and Liveable Cities through Sustainability and Digitalisation, G2, August 28, 2025, 9:00 AM - 10:30 AM

Cities are complex systems continuously evolving, undergoing adaptive cycles influenced by the political, social or economic context, and sometimes radical changes that originate within urban areas. The dynamics of the socio-professional structure of the employed population reflects functional changes well. They can contribute to the increase or, on the contrary, the decrease of pre-existing vulnerabilities of a social, economic or environmental nature. They can also influence urban structural changes, which can affect urban planning, functional area design, or the cities' expansion (planned or by urban sprawl). Cities in Central and Eastern Europe, such as those from Romania, have gone through recent transformations, sometimes radical but often slow, managing with difficulty to adapt their functional structures to the new economic and political context in which they found themselves after joining the European Union. The present paper proposes the following aspects: 1) A theoretical insight regarding the socio-economic transformations of cities reflected in the occupational structure and the influence these transformations have on existing urban vulnerabilities and on the multi-dimensional resilience capacity of cities. 2) An in-depth analysis targeting the functional transformations of cities with over 50,000 inhabitants from Romania and their metropolitan areas that will be considered over the last 20 years. The analysis comprises: i) The identification of differentiated models/patterns of functional transformation in cities, metropolitan areas and non-metropolitan areas from Romania; ii) Finding explanatory factors related to the existence of vulnerabilities or characteristics of local resilience. iii) Development of a statistical model that captures the interactions between functional transformations and territorial vulnerability and resilience. 3) Finally, the paper follows the description of the elements of territorial governance and public policies that can decisively influence urban functional transformations that will increase the resilience of cities. From a methodological point of view, the paper uses cluster analysis (using ML techniques) to illustrate the typology of transformations over the last 20 years, which will subsequently be related, as a dependent variable, to a multitude of vulnerability-resilience indicators (e.g. poverty rate, access to EU funding, air pollution) in order to obtain distinct spatial models that show the functional configurations that have currently become the most effective for managing challenges at the urban and metropolitan levels. The results indicate heterogeneous divisions and contradictory developments but still allow the finding of successful functional models or, on the contrary, warning signs for future urban policies and the efficient planning of cities and metropolitan areas.

Are the Biosphere Reserves in Europe governed participatory?

Ms Mária Vavrúšová¹, Mrs Katarína Vitálišová¹, Mrs Anna Vaňová¹, Mrs Darina Rojčíková¹

¹Faculty Of Economics, Matej Bel University, Tajovského 10, 975 90 Banská Bystrica, Slovakia

G21-O4 Multilevel Governance, Local Government, Devolution, Decentralization, G2, August 29, 2025,

11:00 AM - 1:00 PM

Global challenges and environmental changes emphasize the need for sustainable development and effective management of biosphere reserves. These areas represent a unique link between humans and nature, requiring intelligent governance to ensure biodiversity conservation while respecting the needs of local communities. The main goal of the paper is to identify key features of participatory governance ecosystem in the biosphere reserves as specific type of territories that in unique way lined the nature and man. The research is based on theoretical concepts of governance and participatory management and their practical application. The empirical part includes the results of a questionnaire survey conducted among 26 European biosphere reserves from 15 countries. The survey assessed participatory governance mechanisms, stakeholder engagement, and strategic planning methods. Findings indicate that 88% of biosphere reserves actively implement participatory governance, with key stakeholders including local communities, municipalities, research institutions, and environmental organizations. The study confirms the importance of participatory governance for the sustainable development of biosphere reserves, recommending a combination of traditional and digital stakeholder engagement methods. The findings provide valuable insights for policymakers and managers in developing strategies that support ecological and social sustainability in biosphere reserves.

Unpacking multiple positions and innovation in periphery regions. A case study of a Chinese agricultural cluster - (EPAINOS Paper)

Mr Qiang Cao¹

¹Université Paris-saclay, Paris, France

YSS2, G2, August 28, 2025, 11:00 AM - 1:00 PM

While innovation in the periphery has attracted increasing scholarly attention, the mechanisms driving innovation and territorial positional transformation remain largely under-investigated. Theoretically, we adopt a dual core-periphery framework to analyze how both geographical and relational positions shape innovation and positional transformation. We integrate the differentiated knowledge bases approach to examine the relationship between positions and innovation through knowledge processes. Empirically, we examine a Chinese agricultural region that has transitioned from a network periphery to a core position within the national vegetable industry, accumulating substantial synthetic knowledge. Recently, seed breeding firms have emerged as new innovative actors, relying on analytical knowledge for their innovation processes. Focusing on the processes and mechanisms of positional transformation and their influence on new innovative actors, we find that Shouguang's transformation is driven by its territorial innovation system. New innovative actors benefit from their network core position while remaining geographically peripheral, as local social networks facilitate their integration into territorial innovation system, while external networks support their search for analytical knowledge. However, this transformation has also led to environmental and social challenges that are often overlooked due to its peripheral geographical status. This study contributes to economic geography literature by revealing the dynamics, mechanisms, and impacts of innovation in the periphery through a knowledge and evolutionary perspective, considering both geographical and relational positions.

Regional employment dynamics, demographic factors, and economic outcomes: Divergent consequences across EU-27 regions

Dr. Evangelos Rasvanis¹

¹Aristotle University of Thessaloniki, Thessaloniki, Greece

G23-O3 Labor Markets, Unemployment, Gig Economy, Digital 'Nomads', Amphitheater II - SAKIS
KARAGIORGAS, August 29, 2025, 2:00 PM - 4:00 PM

The labour market plays a major role in shaping the economic success of regions within the European Union's 27 (EU-27) member-states. Factors such as unemployment, labour productivity and workforce composition directly influence a region's economic performance. Elevated unemployment levels often indicate that both human and material resources, along with the available workforce, are being underutilised or inefficiently allocated, which consequently diminishes overall productivity, lowers consumption, and slows down regional economic growth. Conversely, allocating financial resources to education and skills training, while simultaneously enhancing the productivity levels of workers, fosters the generation of innovative concepts, strengthens regional competitiveness and promotes sustainable economic growth. This study investigates how labour market conditions and demographic shifts have influenced economic performance in the EU-27 regions from 2003 to 2022, highlighting variations based on each region's developmental stage. Using data from Eurostat's regional database and the European Commission's annual regional database (ARDECO), and employing quantile regressions, this research finds that labour market effects vary across regions. Unemployment hits low- and middle-income regions hardest, making their economies more fragile when jobs are scarce. In these places, a lack of work slows down progress and recovery. However, investing in education and training throughout life pays off in poorer regions by boosting skills and productivity, though the benefits are smaller in richer, more developed areas. Labour productivity stands out as a key factor for growth in all regions, especially helping economies thrive. In wealthier regions, jobs in science and technology have an even bigger impact, boosting innovation and strength. Population factors, such as population density or whether the population of an area is growing or shrinking, also shape economic results. Densely populated regions tend to perform better due to higher levels of economic activity, while areas with declining populations often face challenges in securing an adequate workforce. These findings point to the need for policies that fit each region's needs to reduce gaps between them. In less affluent regions, prioritizing investments in education and innovation can enhance productivity, while in more prosperous regions, ensuring that wage increases align with productivity gains supports economic development. In addition, the age dependency ratio negatively impacts GDP per capita, particularly in wealthier regions, as it places strain on the working population. By addressing these disparities, policymakers can foster a stronger, more equitable economy across the EU-27, reducing inequalities and enhancing overall economic performance.

Mapping twin transition policies in Europe: uncovering tensions, gaps and limitations.

Prof. Christina Kakderi¹

¹Aristotle University Of Thessaloniki, Thessaloniki, Greece

S88-S1 Twin Transition and its Unequal Geography, B2, August 27, 2025, 4:30 PM - 6:30 PM

We are currently experiencing a period of significant transitions. The shift toward sustainable production and consumption, alongside the digital transformation, holds the potential to generate lasting environmental benefits while opening new avenues for economic growth. Europe's green and digital transition must be just and affordable, prioritising the development of new skilled jobs, extensive retraining, smooth labour market transformations and the development of accessible products and services. While these twin transformations present significant opportunities, they also pose challenges to the social fabric, with the risk of increasing (or creating new) inequalities, particularly for people of low socio-economic status and those limited access to infrastructure (European Parliament, 2024; OECD, 2021). The implementation of the two transitions will also vary across territories, as Member States, regions, and cities have different starting points and capacities to respond to both the green and the digital transition, depending on many contextual factors such as their industrial structure, their international connectivity/collaboration and the skills of their populations. Ideally, the two policy streams and societal transitions would complement and reinforce each other. However, their dynamic interdependence makes the twin transition a more complex process with largely unknown (positive and negative) implications to economies and societies. A recent report published by the EC Joint Research Centre (JRC) highlights that these transitions can sometimes clash, creating unintended consequences (Muench et al., 2022). The twin transition is anticipated to generate new layers of cumulative and intertwined inequalities, with conflicting dimensions appearing over different time horizons and geographical areas (Galgóczy, 2023). The paper maps EU policies and initiatives established since 2020, driving the green and digital transition and outlines a typology categorising their different perspective on how they deal with inequalities. The collection of these texts allows for the establishment of a theoretical framework, and a comprehensive understanding of the EU's policy landscape and its approach to ensuring an equitable transition. We reveal tensions, gaps and limitations in how they view transitions-driven inequalities and raise questions about the EU's ability to achieve a just and equitable twin transition.

Public administration digitalization in Romania: drivers, barriers and policy recommendations for a stronger citizen-centered governance

Ms Gabriela Carmen Pascariu¹, Ms Alexandra Gheorghiu¹, Mr Valerică Greavu-Șerban¹, Ms Irina Clipca¹

¹Alexandru Ioan Cuza University of Iasi, Iasi, Romania

S06-S2 From Vulnerability to Opportunity: Building Resilient and Liveable Cities through Sustainability and Digitalisation, G2, August 28, 2025, 9:00 AM - 10:30 AM

The digital transformation of public administration is reshaping institutional processes, improving efficiency, and redefining citizen engagement. While digitalization enhances accessibility and transparency, its implementation remains uneven, shaped by institutional capacity, regional disparities, and public perception.

Our paper examines the role of public institutions in digital communication and how it influences citizens' participation in decision-making. It also identifies the main barriers to adoption and the motivational factors that drive institutions and citizens toward digital governance. Additionally, the research explores institutional perceptions of digitalization's effectiveness and its impact on governance processes.

To achieve these objectives, we conducted a national survey among 568 public institutions in Romania, examining their use of digital communication channels, key adoption barriers, and factors driving engagement. The study also considers regional disparities and urban-rural differences in digital adoption. Additionally, responses from European institutions were collected to provide contextual insights into digitalization processes. The methodology integrates structured questionnaires and qualitative assessments, allowing for a comprehensive understanding of institutional perceptions. With a normative dimension, the paper provides policy recommendations for evidence-based decision-making, addressing institutional challenges and strategies to improve digital communication and citizen engagement.

Distributional Impacts of a Carbon Tax: A Spatial CGE Approach for the Croatian economy

Ms Eduarda Figueiredo¹, Mr Eduardo Haddad¹, Ms Blanka Šimundić²

¹University of Sao Paulo, São Paulo, Brazil, ²University of Croatia, Split, Croatia

G19-O2 Urban, Regional and Local Policy Evaluation, G3, August 27, 2025, 4:30 PM - 6:30 PM

This study examines the distributional impacts of a carbon tax on the Croatian economy, with a particular emphasis on the tourism sector, a key driver of national economic activity. Using an inter-regional computable general equilibrium (CGE) model calibrated for 2018, the research simulates the effects of the tax across Croatia's 21 administrative regions and 65 economic sectors. The results indicate that while the implementation of a carbon tax leads to a general price increase and a long-term reduction in GDP, it also results in a notable rise in average real wages. The most carbon-intensive sectors experience the largest contractions, whereas cleaner sectors — particularly those related to tourism — show increased production, aligning with findings from the existing literature.

The study highlights the significant impact of the tax on the transportation sector, which is essential for Croatian tourism. Air, land, and water transport experience substantial contractions in all simulation scenarios due to their high carbon intensity. Conversely, clean tourism-related activities, such as accommodation and entertainment, see a relative increase in output in the short term. The research underscores the heterogeneous nature of the tax's effects, with regions and sectors dependent on carbon-intensive activities suffering the greatest losses, while those with cleaner economic structures, such as Adriatic and Pannonian Croatia, demonstrate stronger resilience.

Furthermore, the study evaluates the role of revenue recycling as a policy tool to mitigate adverse economic effects. By reinvesting carbon tax revenues into government and household spending, the simulations show that some of the negative impacts on GDP and employment can be alleviated. These findings suggest that well-designed fiscal policies can facilitate the transition toward a low-carbon economy while minimizing economic disruptions.

The study concludes with policy recommendations, emphasizing the need for region- and sector-specific mitigation strategies. Revenue recycling mechanisms could support affected industries and reduce regional inequalities, helping Croatia balance environmental goals with economic stability. These insights contribute to the broader discussion on carbon taxation and its implications for economies reliant on tourism and other carbon-intensive sectors.

Exploring job mismatch for regional resilience in Greece

Ms Reveka Gkerats¹, Ms Maria Tsampra¹

¹University Of Patras, Agrinio, Greece

G01-O1 Urban, Regional, Territorial and Local Resilience, B4, August 27, 2025, 11:00 AM - 1:00 PM

Human capital is considered among the primary mechanisms through which adaptation and resilience emanate in the regional labor markets after a shock. Therefore job mismatch that results in the underutilization of human capital and inefficient allocation of resources could be a factor that determine regional resilience. Labor markets in Greece are diachronically characterized by extensive mismatch with the country typically having the largest share of overqualified graduates in Europe and underperforming in the worldwide rankings regarding the alignment of skills within the labor market, the intensity of skill use in workplaces, and the use of high-performance workplace practices. Using a methodology developed by OECD we explore the relationship between skills supply and skills demand in the 13 regional labor markets of Greece for the period 2011-2022. We proxy skills supply by the percentage of working-age population with tertiary education (ISCED levels 5-8) sourced from secondary regional data. Demand for skills is approximated by the percentage of employment in high-skilled occupations as denoted by the three first digit categories of ISCO-08 in combination with the Gross Valued Added per worker for each region. According to the nature of the relationship the 13 Greek regional labor markets are categorized as those experiencing imbalances either skills shortages or skills surpluses and those experiencing equilibrium of either high or low skills. Furthermore drawing on primary research data retrieved through fieldwork with the use of a structured questionnaire addressing graduates with tertiary education attainment we explore quality aspects of job mismatch covering a cross-regional, cross-sectoral and cross-occupational range of labour employment. Our findings highlight the importance for high-skills utilization in the workplace, otherwise the regional labor market becomes less resilient.

From a film festival city to an entrepreneurial ecosystem in the audiovisual industry: the case of Cannes

Dr. Matina Magkou¹, Gwenaëlle Prigent¹, Rani Dang¹

¹Gredeg/ CNRS University Côte d'Azur, Nice , France

S63 Regional Development and Cultural & Creative Industries, E12, August 28, 2025, 9:00 AM - 10:30

AM

The role of festivals in urban regeneration and regional development has been extensively explored in the literature, with a strong focus on place branding and tourism. However, their potential in fostering entrepreneurial ecosystems remains underexamined. This paper investigates the emergence of an entrepreneurial ecosystem in the cultural and creative industries (CCIs), using Cannes as a case study. Cannes, widely recognised for its prestigious film festival, provides an interesting case of how a globally renowned event can contribute to the development of a sector-specific entrepreneurial ecosystem—in this case, the audiovisual industry.

Drawing on literature on festival and territorial development and entrepreneurial ecosystem theory, we examine how a film festival, typically regarded as a cultural and tourism asset, can serve as a foundation for entrepreneurial activity. The study employs a longitudinal case study approach, integrating qualitative methods such as documentary analysis, semi-structured interviews with key stakeholders, and participant observation at industry events. Findings suggest that the emergence of an entrepreneurial ecosystem in Cannes' audiovisual sector is not a purely organic, bottom-up process, as often assumed in entrepreneurial ecosystem literature. Instead, it is strongly shaped by institutional commitment, strategic branding, and targeted cultural policies. The municipal government, in particular, plays a central role in orchestrating this ecosystem, leveraging Cannes' global reputation to attract investment, foster industry collaboration, and provide dedicated infrastructure for entrepreneurship in the audiovisual industry. The results challenge traditional entrepreneurial ecosystem frameworks by demonstrating that CCIs, due to their reliance on symbolic capital and cultural policy, often require a more interventionist approach to ecosystem development.

Wild animals' transport between zoos as an element of species biodiversity protection in sustainable resources management. Case study of Polish zoos.

Ms Weronika Michalska¹

¹University Of Warsaw, Warsaw, Poland

G05-O7 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 29, 2025, 11:00 AM - 1:00 PM

The basic function of modern zoos, associated with international nature conservation organizations, is to save endangered species of wild animals and provide them with appropriate living conditions. They contribute to maintaining or increasing a healthy population of animals threatened with extinction in captivity. The ZOO Wroclaw and the Łódź ZOO Orientarium in Poland, as a part of the European Association of Zoos and Aquariums (EAZA), implement the mission of modern zoos by participating in the international transport of endangered animal species (Piasecka 2023).

The aim of this paper is to explain how the international transport of wild animals between zoos associated with EAZA contributes to the preservation of animal species biodiversity in the world in the context of sustainable resources management. The analysed case studies are the Wroclaw and Łódź zoos, which are also among the largest in Poland in terms of the number of animals, their species and among the most modern institutions dealing with breeding and protection of animals threatened with extinction in Europe.

The presentation will determine the main reasons and legal conditions for the transport of wild animals between zoos. The required transport conditions for individual species of wild animals will also be presented.

Then, the topic of changes in the frequency and directions of international transport of wild animals will be discussed, using the example of the ZOO Wroclaw and the Łódź ZOO Orientarium. The considerations will concern both the number of animals transported and the network of contacts created together with other zoological institutions.

Understanding drivers of diffuse urbanisation: The case of Croatia

Dr Ivana Katuri², Mr Lucijan Černelić¹, Ms Ana Devčić¹

¹Urbanex, Split, Croatia, ²University of Rijeka, Sustainable urban development, Rijeka, Croatia

G22-O3 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, B6, August 27, 2025, 2:00 PM - 4:00 PM

Diffuse urbanization, also known as urban sprawl, is a pattern of urban development characterised by disjointed, low-density and car-dependent development, and is widely recognised for generating significant social, environmental and economic costs. Mitigation of urban sprawl is present as an objective in spatial planning systems of many European territories, although the effectiveness of public interventions in achieving compact urban development varies significantly, and diffuse urbanization remains a pervasive issue in urban development across Europe.

Recent development of the EU policy discourse shows this issue gaining greater attention. The increasing concern of environmental policies with land take and calls for “no net land take” targets hold significant implications for spatial planning in EU member states. There is a need for greater understanding of the complex drivers of land take to identify barriers to compact urban development. In each territory, the mode of urbanization – whether urban development takes more compact or diffuse patterns - is determined by an interplay of factors influencing the demand for and supply of developable land. These include both broader economic, demographic and cultural factors, as well as public policies at various levels of governance, including spatial planning and governance, as well as sectoral policies.

We aim to contribute to the understanding of the dynamics affecting modes of urbanization through a study of urbanization patterns in Croatia, a country characterised by diffuse urban development throughout most of its territory. Using national census data on demographic changes and data on urban development derived from remote sensing, Croatian municipalities are classified according to land use efficiency. We further examine spatial data derived from local land use plans to explore the influence of planning policies on urbanization.

Our findings highlight a persistent pattern of diffuse urbanization. A key contributor is the widespread zoning of undeveloped land for construction, facilitating self-promoted housing development, which aligns with a housing system dominated by small-scale production and widespread homeownership. Additionally, commercial activities are increasingly concentrated in monofunctional business zones often developed on greenfield land, reinforcing car dependency. These dynamics suggest that urban sprawl in Croatia is not merely an outcome of weak planning controls but a product of institutional arrangements that sustain low-density development patterns. Understanding these mechanisms is essential for designing more effective spatial policies aligned with EU sustainability objectives.

Agglomeration of knowledge intensive activities as driver of high skilled inter-regional migration: a gravity model with Spanish labour mobility data

Mr Jose Blanco-Álvarez¹, Dr. Manuel González-López²

¹Universidad de León, Leon, Spain, ²Universidade de Santiago de Compostela, Santiago de Compostela, Spain

G09-O3 Migration, Mobility Patterns and Impacts Across Space, A1, August 28, 2025, 4:30 PM - 6:30 PM

Human capital has risen to prominence as the main driver of long-term economic development justifying massive public investments in higher education. However, the existence of externalities in the form of agglomeration economies can induce highly skilled individuals to migrate into a reduced number of dynamic urban areas hosting the lion's share of knowledge-intensive activities. Using a rich administrative dataset on labor contracts and business demographic statistics we build a gravity model explaining inter-regional migration by skill level between Spanish regions (Autonomous Communities or CCAA; equivalent to NUTS2) during the last 22 years (2001-2022). Our estimations indicate that the agglomeration of knowledge-intensive activities (especially proxied as knowledge intensive business services, or KIBS) is a significant and strong determinant of high skilled migration after controlling for wage differences, the provision of amenities, housing prices or the existence of different languages among others. These results are robust to different specifications, including OLS, dynamic models or Pseudo-Poisson Maximum Likelihood estimations with different sets of fixed effects by region of origin, region of destination and year. These results also pose an important challenge for policymakers, as they implied that efforts on increasing education opportunities at home regions might be seriously undermined by initial economic differences. There are indicatives of high human capital agglomeration inside other countries (for example London in the UK or Paris in France) and given that no (formal) barriers to migration exist at internal level, this case study is of relevance for them. To the extent that the EU is a free movement area, the case of Spanish regions might be also representative of dynamics taking place at upper levels.

Fostering synergies between climate adaptation strategies and spatial planning: Challenges and some evidence from Mediterranean metropolitan areas.

Prof. Elisavet Thoidou¹, Assoc. Prof. DIMITRIS FOUTAKIS²

¹Aristotle University of Thessaloniki, School of Spatial Planning and Development Engineering, Thessaloniki, Greece, ²International Hellenic University, School of Surveying and Geoinformatics Engineering, Serres, Greece

G01-O1 Urban, Regional, Territorial and Local Resilience, B4, August 27, 2025, 11:00 AM - 1:00 PM

In an era of rapid transformations and uncertainties, cities, regions and metropolitan areas place their expectations for prevention of risks and territorial resilience to the role of planning, especially planning of strategic character. New strategic spatial planning has been re-established since 1990 in many metropolitan areas of the Global North, to guide territorial development with a view to promoting sustainability and competitiveness. While strategic spatial plans have been embedded in the planning systems of many countries, since 2000 new challenges have arisen for metropolitan areas that request new content and synergies between various types of planning. Above all the request for resilience has complemented that for sustainability, thus posing challenges to all types of spatial planning and territorial interventions as well. At the same time, metropolitan areas adopt climate adaptation strategies in seeking to enhance resilience to the impact of climate change and be better prepared for rising risks. These strategies are usually part of a wide system of climate adaptation strategies extending from supranational to national, regional, metropolitan and city/local levels, with characteristics that depend on each country's specificity. However, in most cases climate adaptation strategies do not have their own means of implementation, which raises the need for mainstreaming adaptation measures to pre-existing policies. On the other hand, established policies need to update their concept and content with the aim of promoting territorial resilience. Overall, there is a need for fostering synergies between strategic spatial planning and climate adaptation strategies, as is evident above all in cases of catastrophic events. It is suggested that this should be attained at the following interconnected levels: the governance of planning, the concept and vision of plans, and the content of planning interventions. This paper draws evidence from two Mediterranean cities in Greece and Spain, while seeking to identify ways of fostering synergies between types of plans towards territorial resilience.

Dynamics of Financial Stress Index in Dollarized Economies: A Nonlinear Approach TVAR models

Dr. Marcela Guachamin¹

¹Universidad Escuela Politécnica Nacional Del Ecuador, Quito, Ecuador

G20-O3 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G5, August 28,
2025, 4:30 PM - 6:30 PM

This research develops a Financial Stress Index (FSI) for the dollarized economies of Ecuador, El Salvador and Panama using a Dynamic Factor Model (DFM) to reduce the dimension of a set of variables to a smaller group of latent dynamic factors and to capture the common movements. The FSI identified periods of high financial stress over time such as the Global Financial Crisis (GFC) of 2008 and the health crisis due to the COVID-19 pandemic in 2020. We applied a TVAR model to analyze the impact of a shock to the FSI on the real sector. The results showed that a change in the financial conditions impacts the GDP growth, indebtedness and inflation to a greater extent in the high financial stress regime compared to periods of low financial stress. Thus, the FSI is a useful tool for monitoring financial stability and could ultimately help in macroprudential policy decision-making.

Paying for Euroscepticism

Prof. Andrés Rodríguez-Pose¹, Dr Lewis Dijkstra², Dr Chiara Dorati²

¹London School of Economics, London, United Kingdom, ²Joint Research Centre, European Commission, Ispra, Italy

G18 Voting Patterns, Participation, Discontent, Representation, Euroscepticism, B4, August 29, 2025,
11:00 AM - 1:00 PM

This paper explores the economic consequences of rising support for hard Eurosceptic parties, revealing that moving to political extremes and endorsing anti-European integration in national elections comes at a cost. Contrary to the frequent claims of economic bonanza of Eurosceptic leaders, the study finds significant negative impacts of support to Eurosceptic parties on regional economic development. A 1-percentage-point increase in support for hard Eurosceptic parties correlates with a 0.035-percentage-point reduction in GDP growth and similar declines in productivity over the subsequent electoral cycle. While employment and population growth effects are smaller, they highlight persistent challenges for labour markets and demographic vitality.

Using data from the 2012–2013 austerity crisis, the study also demonstrates that Euroscepticism exacerbates economic disparities by reducing investment, increasing uncertainty, and changing the capacity of regions to grow in income, productivity, and create employment. These findings underscore that political discontent expressed through Eurosceptic voting undermines economic resilience and long-term growth, proving that such support is no free lunch.

CRMs in European Regions: Why the CRM Act May Fall Short?

Prof. Stefano Usai¹, Prof Simona Iammarino, Diego Dessì

¹Università di Cagliari - CRENOS, Cagliari, Italy

G17 Geopolitics, Conflicts and Security: Spatial Impacts and Perspectives, G4, August 28, 2025, 9:00 AM - 10:30 AM

Under the ongoing technological paradigm shifts, critical natural resources and materials have become essential for emerging industries and innovation frontiers. Recent disruptions in global supply chains – due to geopolitical conflicts, trade wars, political instability of the (highly) concentrated deposits worldwide, etc. – have affected the availability of critical raw materials (CRMs), raising concerns about the stability of the supply, and bringing to the fore the alternative of domestic production. Recent EU initiatives, such as the Open Strategic Autonomy (OSA) intended to make the Union more competitive and autonomous by promoting innovation along the entire value chain, particularly the Critical Raw Materials Act (CRMA) represents a bold attempt to secure a stable supply of critical and strategic raw materials. However, the EU's strategy tends to over-rely on domestic opportunities, employing an excessively top-down approach combined with industrial and regulatory provision primarily focused on attracting new investments in the industrial sector by accelerating permitting and funding procedures. This approach risks falling short in addressing key constraints, including local-level implications, limited reserves, uncertain geological data, and inadequate technological and industrial capabilities of European regions. We combined EGDI data from the European Geological Survey (EGS) and S&P Global with BvD ORBIS information to identify vulnerable strategic areas driven by social tensions, technical, and resource constraints and to understand how ownership-driven disparities and strategic underutilization influenced by owner- and region-specific capabilities may impact the CRMA's ability to ensure a secure supply of CRMs while promoting balanced and fair territorial development in Europe and beyond

Shaping cultural policy in Europe's rural areas from the bottom up: Challenges and needs

Prof. Julius Heinicke¹

¹University Of Hildesheim, Germany, Hildesheim, Germany

S12 Place-Based Innovation of Cultural and Creative Industries in Non-Urban and Peripheral Areas:
What Roles for Actors and Policies?, G6, August 27, 2025, 11:00 AM - 1:00 PM

The comparative analysis of cultural policy in rural areas in Europe has revealed the following challenges: In the various regions, different cultural policy actors are responsible for cultural policy decision-making processes. These are often not known in the cultural scenes or cooperate little with each other. As a result, there is often neither a transparent governance structure nor are the objectives and strategies clearly communicated, which is a disadvantage for the development of CCIs structures in rural areas. Furthermore, with regard to European CCI strategies, it is challenging that concepts such as diversity, gender, innovation and culture are defined very differently in the various rural regions and that there are often misunderstandings between the top-down processes and the actors on the ground.

The paper will present the results of the study, as well as needs and practices to address these. In addition to forms of cultural mapping, bottom-up strategies that involve the various stakeholders, but also provide space for the areas of tension between different definitions and concepts of diversity, gender and culture. In addition, formats such as 'Zukunftswertkstatt' and 'Design Thinking' will be further developed for regional cultural policy processes in order to design development plans for the governance of CCIS in non-urban areas.

From the Vistula to the Bosphorus students' attitudes towards the circular economy – a comparative perspective of Poland and Turkey

Dr Jacek Chądzyński¹

¹University of Lodz, Lodz, Poland

S17 Regional Science in Turbulent Times: Embracing Circularity through Multi-stakeholder Engagement, G5, August 27, 2025, 2:00 PM - 4:00 PM

From the Vistula to the Bosphorus – students' attitudes towards the circular economy – a comparative perspective of Poland and Turkey

The aim of the presentation is to present the theoretical and methodological foundations and research results. The subject of the conducted research are the attitudes of students of Polish and Turkish universities in the area of the circular economy. The transition from a linear economy to a circular economy requires the involvement of all stakeholders of these changes, including society. The involvement of society (its members) is essential for the possibility of closing the cycle, or the system that creates this cycle. In the study, we assumed that young, educated people, i.e. students, should be the main driving force of changes that will bring the economy closer to circularity. However, the condition for this is their positive attitude towards the circular economy.

The aim of the study was to identify and diagnose the attitudes of students of Polish and Turkish universities towards the circular economy. The researchers also intend to compare these attitudes in two selected countries. One of them is an integral part of the European Union (EU), which aims to transform national economies towards circularity, and the other remains outside the EU, although it has been trying to join these structures since 1999. On the other hand, in both selected countries, the level of circularity of economies is relatively low, although there is a small difference in favor of Poland.

This objective was achieved by providing answers to the research questions, the two main ones of which are:

How are the attitudes of students of Polish and Turkish universities shaped towards the circular economy?

What are the similarities and differences in the attitudes of students from Polish and Turkish universities towards the circular economy?

The quantitative method – survey – was used in the research. The research material was obtained by using a survey technique and a research tool in the form of an online survey questionnaire. The questionnaire included questions that took into account all three previously mentioned components of attitudes.

The research sample consists of students from Polish and Turkish universities. Due to the unavailability of sampling frames that meet the criteria of adequacy and completeness, accuracy and lack of repetitions, and consequently the possibility of applying random sampling, the sample selection is non-random and is based on the availability of respondents (occasional sample).

Is Remote Working Effective in the Public Utility Sector? The Perspective of Allocation Resources in Administrative and Civil Services

Mr Aygün Kam¹

¹University Of Lodz, Faculty Of Economics And Sociology, Department of Local Government Economics, Lodz, Poland

S17 Regional Science in Turbulent Times: Embracing Circularity through Multi-stakeholder Engagement, G5, August 27, 2025, 2:00 PM - 4:00 PM

In recent years, remote work has become a response to the needs of modern economies where private and public institutions operate and create networks of connections. The public utility sector, which refers to an activity, good, or service that brings benefits or collective interests to the residents of a country, is among them. However, public utility sector organizations are in an extraordinary situation because their primary goal, the current and continued satisfaction of social needs, partly determines innovative behavior. The lack of classic market determinants, such as profit orientation and private ownership, slows the adjustment to the new conditions. Consequently, effective remote work implementation presents a significant challenge for public utility sector organizations. With the widespread use of remote work, there is a need to identify whether and under what conditions remote work is economically effective in public utility sector organizations. Therefore, the study assesses the effectiveness of resource allocation in the public utility sector groups during remote work. As a result, the results indicate that (1) remote work requirements do not occupy a significant portion of annual budgets for public utility services, (2) remote work allows reducing the fixed costs of maintaining stationary working in the short term, (3) even if remote work is a cost-effective method for public utility services and decreases indirect employee costs, it has yet to be incorporated successfully.

Regional attractiveness for migrants is multidimensional and age- and education-dependent

Prof. Leo Van Wissen¹, Dr. Becky Arnold¹

¹NIDI And FRW-RUG, The Hague, The Netherlands

G02-O4 Regional Growth Models, Competitiveness, and Convergence, B1, August 28, 2025, 4:30 PM - 6:30 PM

In different stages of life, people are attracted to different types of regions. At younger ages, urban regions are preferred, later in life regions with other characteristics are preferred. We postulate that the attractiveness of regions is composed of economic, social and environmental dimensions. Using European regional data at the NUTS 3 level on net migration and machine-learning techniques we estimate country-specific models of regional attractiveness which are age-specific. Results show that in many countries the young ages are attracted to regional with a strong economic dimension, whereas regions with a strong social and environmental dimension are more favored by migrants later in life.

Strategic autonomy not for me: the misalignment of regional development and economic sovereignty objectives in the EU

Prof. Vassilis Monastiriotis¹, Dr Tea GAMTKITSULASHVILI¹

¹London School of Economics, London, United Kingdom

S57-S1 Cohesion Policy and Industrial Policy: Competition or Complementarity?, Amph 2, August 28,
2025, 4:30 PM - 6:30 PM

For decades prior to the Global Financial Crisis, the EU had a clear ‘division of labour’ between its regional and (rudimentary) industrial policy. Developments since the early 2000s, however, saw the two policies converging both in character and in the ideas underpinning them. Cohesion Policy started incorporating modern epistemic ideas about ‘entrepreneurial discovery’, ‘related diversification’ and ‘place-based policy’; while industrial policy became increasingly more activist, deploying strategic planning and targeting investment-driven economic restructuring and innovation aiming at ‘directing’ growth and addressing ‘system failures’. Soon, however, and increasingly after the COVID pandemic and the ‘polycrises’ that have followed, EU’s industrial policy ambitions catapulted. The launch in 2019 of the European Green Deal saw the introduction of mission-like ambitions for decarbonisation, energy independence and digital leadership (under the so-called twin transition). Subsequent geopolitical developments led to the re-elaboration of such ambitions, introducing mission-like pursuits for ‘economic sovereignty’, ‘open strategic autonomy’, the ‘resilience of the Single Market’ and the defence of Europe’s ‘values and social market traditions’.

In this paper we examine how these evolutions have affected the ability of Cohesion Policy to deliver on its goals of territorial cohesion and balanced growth and address issues of regional development and inequality. We start by reviewing the evolution of the two policy areas (cohesion/regional and industrial/innovation) and identifying the main concepts and theoretical ideas that underpin them. We argue that despite the ‘entrepreneurial shift’ of Cohesion Policy and the ‘interventionist shift’ of industrial policy, the recent orientation of the latter towards macroscopic, mission-like, objectives has created a ‘misalignment’ between the two policy areas and their objectives (development, whether national or subnational), potentially undermining processes of regional development and convergence supported by Cohesion Policy. We then turn to a ‘forensic’ empirical investigation, examining the spatial footprint of a number of policy initiatives (Industrial Alliances, Sensitive Ecosystems, CRM Board, IPCEIs) and funding schemes (Horizon, RRF, European Innovation Council grants). We show that, by and large, the new industrial policy initiatives of the EU are at odds with the priorities and sectoral-geographical targeting of Cohesion Policy. Funding instruments and state-aid targeting appear to be inversely redistributive, potentially amplifying territorial inequalities; while mission-like initiatives (decarbonisation, resource autonomy) seem to concentrate disadvantages to those regions more likely to be targeted by Cohesion Policy. We conclude with some recommendations on how the two policy areas can be realigned, so as to successfully deliver on their corresponding strategic objectives.

The impact of the demographic, green and digital transformation on economic and health inequalities: A microsimulation study.

Dr. Ashley Burdett, Prof. Matteo Richiardi¹

¹University Of Essex, Colchester, United Kingdom

S56-S1 Digitalization and Inequality: Territorial Disparities and Policy Effectiveness, F1, August 29,
2025, 9:00 AM - 10:30 AM

The paper examines the impact of the major demographic, macroeconomic (green transition) and technological (digital transition) shocks on the future of regional labour markets in five European economies (United Kingdom, Italy, Poland, Hungary and Greece), characterised by different economic models and welfare regimes.

To this aim, we build on an innovative micro-analytical framework to project individual life course trajectories. The framework, originally developed for the UK, is applied to four EU countries, and extended to include regional disaggregation at the NUTS-3 level and incorporation of macroeconomic scenarios derived from a dynamic input-output macro model. This allows us to shed new light on the distributional impact of the ongoing economic and social transformations, beyond the broad picture and simplifying assumptions made in standard macro approaches. Further, our dynamic framework integrates in every simulated period inputs from a static tax-benefit model, permitting analyses of the short-, medium- and long-run effects of fiscal policies.

FinTech and microfinance: what impact on financial inclusion?

Pr. Maher Gassab¹, Dr. Salma Hichri², Dr Rania Ben Hmida³, Dr. Sana Kammoun⁴

¹ESCT- ThEMA, University of Manouba, Tunis, Tunisia, ²FSEGS-CODECI, University of Sfax & DATE-Polytech'Tours, Tunis, Tunisia, ³FSEGS-CODECI, University of Sfax, Tunis, Tunisia, ⁴IHEC – University of Carthage, Tunis, Tunisia

S74 Entrepreneurship, Innovation and Sustainable Development, Amph 3, August 29, 2025, 11:00 AM - 1:00 PM

Microfinance has long been seen as a lever for reducing poverty and developing the entrepreneurial capacities of disadvantaged populations (Yunus, 2003 ; Armendáriz and Morduch, 2010). With the rise of FinTech, microfinance institutions benefit from broader access to markets, reduced transaction costs and better risk assessment, reconfiguring the boundaries of a sector historically rooted in proximity interactions.

This technological mutation raises essential questions concerning disparities in access to financial services and the pursuit of sustainable development objectives. It raises the question of the balance between technological innovation and territorial cohesion, and the risk of new economic and social divides emerging (Kenney and Zysman, 2019). Indeed, while some studies highlight the inclusive potential of FinTechs in peripheral, underbanked areas serving the most marginalized populations (Beck and al, 2018), others emphasize their tendency to reinforce spatial fractures by consolidating financial flows in already dynamic regions benefiting from digital infrastructures (Feldman and Kogler, 2010). This phenomenon is all the more worrying given that spatial disparities in the adoption of these technologies can amplify polarization and regional disparities rather than attenuate them. The aim of this study is to show to what extent the integration of FinTech technologies can actually reduce inequalities in access to financing. In particular, we explore how these technologies can reduce (or reinforce) territorial inequalities in the allocation of financial resources earmarked for the fight against poverty and the ecological transition.

The study uses data from the Microfinance Exchange Market (MIX), covering nearly 2,000 microfinance institutions across different regions. The analysis is based on a dynamic panel model to capture the LT effects of FinTechs on financial inclusion, and to take account of regional heterogeneities. The study aims to contribute to the academic debate, by identifying the conditions under which FinTechs can truly act as a lever for financial inclusion and generate sustainable economic and social benefits, particularly in the most vulnerable regions. It also aims to provide concrete policy recommendations to guide the regulation of the sector towards reconciling technological development and the reduction of regional disparities.

Rural Manufacturing: Understanding the Interplay of Knowledge Sourcing Dynamics And Supplier-Customer Linkages

Mr Arian Osroosh¹, Prof. RNDr. Jan Zenka²

¹University Of Ostrava, Ostrava, Czech Republic, ²University Of Ostrava, Ostrava, Czech Republic
S61-S2 Innovation, Entrepreneurship and Industrial Dynamics in Rural Areas, D12, August 27, 2025,
4:30 PM - 6:30 PM

Development studies have traditionally focused on urban firms and high-tech clusters, with agglomeration economies as a central theme in economic geography. While recent research acknowledges urban bias and examines low-tech firms in peripheral contexts, rural manufacturers—particularly those not classified as innovative—remain understudied. Existing literature has explored knowledge sourcing and customer-supplier linkages separately, yet their combined role in shaping rural firm competitiveness is unclear. This study addresses this gap by investigating how rural manufacturers integrate knowledge acquisition with supplier-customer relationships to enhance performance. We analyze whether constraints in one area affect the other and how firms adapt to their geographical limitations. By synthesizing insights from studies on rural firms, low- and medium-technology sectors, and peripheral contexts, this research contributes to economic geography and rural development policy. Our findings offer recommendations for policymakers on fostering knowledge networks and overcoming structural barriers in rural economies.

AI Governance and Regional Inequalities: A Spatial Analysis of Policy Impacts in Europe

Prof. Tuba Bircan¹

¹Vrije Universiteit Brussel, Brussels, Belgium

S56-S3 Digitalization and Inequality: Territorial Disparities and Policy Effectiveness, Amph 2, August 29,
2025, 2:00 PM - 4:00 PM

Artificial intelligence (AI) is increasingly integrated into public governance, influencing economic decision-making, urban planning, and public service delivery. While AI-driven policies promise enhanced efficiency, they also risk exacerbating regional inequalities due to disparities in digital infrastructure, institutional capacity, and AI investment. Some regions, particularly those with strong innovation ecosystems and advanced digital infrastructure, are better positioned to leverage AI for economic growth, while others may struggle to adopt AI-driven governance. This study examines whether AI governance fosters regional convergence or deepens territorial disparities, analyzing its spatial effects on economic inequalities across Europe.

Drawing on publicly available data from OECD, Eurostat, DESI, and the European Innovation Scoreboard, I construct a Regional AI Policy Index to assess the adoption and impact of AI-related governance strategies at the NUTS-2 level. The study employs a spatial analytical framework to detect patterns of regional AI adoption, assess policy spillovers, and examine the extent to which AI governance influences economic performance. This approach allows us to move beyond national-level comparisons and capture the uneven territorial dynamics of AI-driven policies.

I hypothesise that AI governance reinforces existing regional disparities, as wealthier regions with stronger digital infrastructure and institutional capacity attract more AI-related investment, widening the gap with less developed regions. By applying spatial econometric techniques, I identify whether AI-driven policies cluster in high-performing regions and assess whether they generate positive or negative externalities for neighbouring areas. This spatial perspective is crucial for understanding AI's role in shaping regional economic trajectories and informing policy interventions that promote inclusive digital transformation.

Our findings contribute to the growing debate on AI's impact on regional inequalities, offering empirical insights into how AI adoption in governance interacts with existing economic and spatial structures. The study also provides evidence-based recommendations for designing AI policies that ensure equitable digital development across regions. Addressing these disparities is essential to prevent further territorial polarisation and to leverage AI as a tool for regional cohesion rather than division.

This study advances the understanding of AI's territorial effects and highlights the need for differentiated policy strategies that consider the uneven distribution of AI capabilities across regions, by integrating economic geography, digital governance, and spatial policy analysis. The findings are relevant for policymakers, researchers, and stakeholders aiming to foster a more balanced and inclusive AI-driven transition.

Outdoor Thermal Comfort Mitigation Strategies in Historic Cities: A Bibliometric Review

Ms Courtney Schilling¹, Dr. Ana Caldeira

¹Universidade De Coimbra, Coimbra, Portugal

S75 Cities Under Pressure: Building Resilience and Adapting to Climate Challenges, G5, August 27,
2025, 11:00 AM - 1:00 PM

This article provides a systematic literature review on outdoor thermal comfort mitigation strategies in historic cities designated with UNESCO tangible and cultural world heritage. The bibliometric method was used to analyze descriptive statistics and bibliographic coupling. The emerging results being the Asian-centric nature of current literature and four clusters of mitigation strategies, including 1) Nature-based solutions; 2) Street geometry and urban planning; 3) Integrated strategies; and 4) Water-based strategies. This research helps define the current literature directions related to the theme and promotes further development for studies analyzing mitigation strategies for historic cities with rising temperatures.

Predicting Corruption of Indonesian Local Government: A Machine Learning Approach

Dr. Khoirunurrofik Khoirunurrofik¹, Dr Arief, S. Gusnanto, Dr Bagus Sartono, Arthur H. Bramantyo, Ali Kifayatullah

¹Universitas Indonesia, Jakarta Pusat, Indonesia

G19-O1 Urban, Regional and Local Policy Evaluation, G3, August 27, 2025, 2:00 PM - 4:00 PM

The relationship between political factors and corrupt behaviour, including the way in which leaders and legislators interact in the budgetary decision-making process, has led to many local governments in Indonesia being implicated in corruption cases. This study uses artificial intelligence/machine learning (AI/ML) methods to predict corrupt behaviour based on local political competition, fiscal policy, and economic structure that proposes a new approach to predicting the corrupt behaviour of local governments in Indonesia. We used random forest and gradient boosting algorithms, which are considered the best approaches to artificial intelligence for predicting. Data for corruption cases are provided by the Corruption Eradication Commission (Indonesia: Komisi Pemberantasan Korupsi) and Indonesian Corruption Watch, in particular for cases under investigation by the Regional Prosecutor's Office and the State Prosecutor's Office. The political configuration data is collected by the Ministry of Home Affairs and the General Election Committee. The tax data is collected by the Ministry of Finance, while the economic and geographical data comes from Central Beureu Statistics. From a fiscal point of view, corrupt behaviour also affects the planning budget, as it leads to a budget deficit, a higher share of social assistance and a high share of infrastructure spending. The study found that public expenditure, education expenditure and poverty levels are important predictors of corruption cases. The presence of lag variables, such as education expenditure in the past, suggests that past patterns of expenditure play a significant role in determining the level of susceptibility to corruption in the present. This observation provides an insight that, in addition to focusing on current expenditure, it is also important to assess past expenditure trends in order to understand patterns of recurrent corruption risk. An analysis of the predictability of corrupt behavior in Indonesian local governments could provide an alternative early warning system for the design of government financial policies that can reduce corruption. Lessons learned from major developing countries with big decentralisation reforms will contribute to building a body of knowledge about local public finances and regional academic studies.

Too much or not enough? The dual nature of green discontent and its geography

Mr Francesco Molica¹, Dr Sebastien Bourdin, Dr Anabela Santos

¹EM Normandie, Caen, France, ²Solvay Brussels School of Economics and Management - Université libre de Bruxelles, Brussels, Belgium, ³European Commission - Joint Research Centre, Seville, Spain
S57-S2 JRC Session - Understanding the Territorial Patterns of Climate Discontent, Amph 2, August 29,
2025, 9:00 AM - 10:30 AM

The paper examines the dual nature of green discontent, which manifests as dissatisfaction with insufficient climate action and opposition to policies perceived as overly restrictive or economically disruptive. The analysis focuses on the spatial dimensions of this phenomenon, assessing how socio-economic, climatic, and institutional factors influence public attitudes toward environmental policies. The study relies on Eurobarometer survey data and voting patterns at the NUTS2 level to capture regional variations in green discontent across Europe. The results reveal clear contrasts between urban areas exposed to climate risks, rural regions dependent on carbon-intensive industries, and economically stable territories. These findings emphasize the importance of adopting place-based approaches to design climate policies that are both equitable and effective. The paper concludes with recommendations on how to integrate territorial environmental justice into climate strategies to address regional vulnerabilities and strengthen public support for ecological transition.

Testing Heat Mitigation Strategies in Mediterranean Cities: A Practical Application of a Methodological Framework

Dr. Ana Caldeira¹, Ms. Courtney Schilling², Dr. Susana Silva¹, Dr. Rui Ferreira de Figueiredo¹, Dr. Albano Figueiredo¹, Professor Lúcio Cunha¹

¹Faculty of Arts and Humanities, University of Coimbra, CEGOT - Geography and Spatial Planning Research Centre, Coimbra, Portugal, ²Faculty of Arts and Humanities, University of Coimbra, Coimbra, Portugal

S75 Cities Under Pressure: Building Resilience and Adapting to Climate Challenges, G5, August 27, 2025, 11:00 AM - 1:00 PM

The increasing frequency and intensity of heat waves present significant challenges for Mediterranean cities, particularly affecting urban tourism and residents' quality of life. The Cool Noons Project responds to this challenge by testing innovative heat mitigation strategies across five Mediterranean cities: Budva, Dubrovnik, Imola, Lisbon, and Marseille. This paper describes the practical application of a comprehensive methodological framework designed to assess three key aspects: cooling efficacy of urban interventions, attractiveness of cool paths and cooling interventions for tourists, and overall experience enhancement for both visitors and residents. The methodology employs diverse data collection techniques including satellite imagery, thermal cameras, weather stations, GPS tracking, and Wi-Fi-based location tracking, complemented by innovative survey approaches such as QR code-accessible questionnaires strategically placed along urban paths. Preliminary implementation experiences reveal both successes and challenges in the methodological approach. The involvement of local stakeholders through focus groups has proven essential for identifying contextually appropriate cooling solutions, while real-time ecological momentary assessment via mobile surveys and microclimatic data collection presents both opportunities and limitations for capturing authentic thermal comfort perceptions. This paper offers valuable insights for researchers and practitioners working on climate adaptation in urban tourism contexts, highlighting the importance of integrating multiple data sources and balancing technological sophistication with practical implementation constraints.

BioINSouth: Enhancing Regional Policies and Environmental Sustainability for Bio-based Sectors to Boost Innovation and Inclusivity in Southern Europe

Mr. Mario Bonaccorso¹, Dr. Pierluigi Argoneto¹, Dr. Konstantina (Nadia) Vougiannopoulou⁷, Mrs. María García Alegre², Dr. George Sakellaris³, Mrs Inma Sánchez Cantero⁴, Mr. Filipa Sacadura⁵, Prof. Konstantinos Vorgias⁶, Mr. Lorenzo Sutton⁸, Prof. Francesco Caracciolo⁹, Mrs. Alenka Dovč¹⁰, Dr. Laurent Augier¹¹, Dr. Volkan Pelitli¹², Dr. Cristina Viera Bardón¹³, Dr. Evie Demetriou¹⁴, Mrs. Phoebe Vayannou¹⁴, Dr. Jessica Frigerio¹⁵

¹SPRING - Italian Circular Bioeconomy Cluster, Milan, Italy, ²CTA (Technological Corporation of Andalusia), Seville, Spain, ³BIOEAST HUB CR, Prague, Czech Republic, ⁴LEITAT Technological Center, Barcelona, Spain, ⁵P-BIO - Portuguese Bioindustry Association, Cantanhede, Portugal, ⁶National and Kapodistrian University of Athens, Athens, Greece, ⁷PNO Innovation (Greece), Athens, Greece, ⁸Innovation Engineering, Rome, Italy, ⁹University of Naples Federico II, Naples, Italy, ¹⁰Chamber of Commerce and Industry of Slovenia, Ljubljana, Slovenia, ¹¹Agri Sud-Ouest Innovation, Castanet-Tolosan, France, ¹²TÜBİTAK MARMARA RESEARCH CENTER, Gebze Kocaeli, Türkiye, ¹³ASINCAR Agrifood Cluster of Asturias, Noreña, Spain, ¹⁴Frederick University, Nicosia, Cyprus, ¹⁵University of Milan Bicocca, Milan, Italy

S53 Promoting Circular Bioeconomy at the regional level. Potentials and challenges, Amph 2, August 28, 2025, 9:00 AM - 10:30 AM

BioINSouth project aims to support regional policymakers in integrating ecological limits into bioeconomy strategies and roadmaps for circular bio-based activities. By developing guidelines and digital tools within the safe and sustainable by design (SSbD) assessment framework, the project fosters innovative methodologies for assessing environmental impacts across various industrial bio-based systems.

Targeting Southern Mediterranean European regions, particularly those lagging behind such as Cyprus, Slovenia, Greece, and Portugal, BioINSouth will also involve broader participation from Spain, France, Italy, and international cooperation with Türkiye. Leveraging the BIOEAST initiative that focuses on central Europe, BioINSouth will establish QH-based regional Multi-Actor Regional Groups (MARGs) to lead co-creation activities in the establishment of eight bioeconomy-oriented regional HUBs in Campania (Italy), Peloponnese (Greece), Andalusia and Asturias (Spain), Centro (Portugal), Slovenia, Nouvelle-Aquitaine (France), and Cyprus. These HUBs will promote the exchange of best practices, and foster innovative methodologies for assessing environmental impacts and circularity in bio-based sectors. BioINSouth aims to enhance regional competitiveness, innovation capacity, and contribute to the EU's fair and green transition.

A key component of BioINSouth is the analysis of regional stakeholders. Using the digital tool Wheesbee, developed by Innovation Engineering (PNO Group), the project determined bioeconomy technologies and top innovators based on their participation in funded projects over the last 10 years. This tool helped map stakeholders in BioINSouth HUBs regions, understanding the interests, objectives, and relationships of local actors, for developing effective bioeconomy strategies. By engaging diverse stakeholders, including policymakers, public authorities, market operators, civil society, and research organizations, the project ensures that methodologies and tools are tailored to regional needs and challenges. The stakeholder analysis identifies opportunities and barriers, enabling targeted interventions that drive sustainable bioeconomy practices.

The overall methodology promotes collaboration and the exchange of best practices within a macro-regional BioINSouth Network and with international organizations. Demonstrated in eight regions, the concept will be transferable and replicable throughout other Southern European regions and beyond, ensuring sustainability and circularity in bio-based sectors. This project underscores the importance of regional policies in driving sustainable bioeconomy practices and fostering inclusive growth.

Acknowledgment: Project BioINSouth (Grant Agreement No. 101156363) is co-funded by the European Union and supported by the Circular Bio-based Europe Joint Undertaking and its members. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU. Neither the European Union nor the CBE JU can be held responsible for them.

Climate Effects, Policies, and Discontent: Exploring their relationship

Dr. Anabela Santos¹, Dr. Andrea Conte, Prof. Andres Rodriguez Pose, Dr. Francesco Molica

¹European Commission, Joint Research Centre, Seville, Spain

S57-S2 JRC Session - Understanding the Territorial Patterns of Climate Discontent, Amph 2, August 29,
2025, 9:00 AM - 10:30 AM

Discontent can arise either from the direct effects of climate change or from the implementation of climate policies. Measuring the socio-economic impacts of climate change is inherently complex and requires a comprehensive, multi-dimensional approach. Climate policies, even if applied uniformly across a country or the EU, may have different impacts in different regions due to sectoral and economic differences. This paper presents a novel measure of climate discontent and assesses its relationship with climate effects and climate policy effects. Combining data from the Chapel Hill Expert Survey and Schraff et al. (2022), we develop a novel regional voting index to assess the position and salience of political parties on environmental sustainability. We examine the relationship between voting patterns and climate effects using a fractional probit model and data from three European election periods covering 2009-2024. The results show that regions experiencing stronger climate impacts (e.g., more frequent extreme weather events, rising temperatures, or economic losses due to climate change) have a higher vote share index for parties prioritizing green policies. This is consistent with the idea that people directly affected by climate change are more likely to support policies that address environmental issues. Regions that are more vulnerable to climate policies (i.e., those with high employment in fossil fuel industries, high emissions, or high dependence on sectors affected by decarbonization) show lower support for parties that prioritize green policies. This is because green policies may be perceived as a threat to local economic structures and jobs.

Rethinking transport infrastructure's role in spatial transformations

Dr. Felix Pot¹, Prof. Taede Tillema¹

¹University of Groningen, Groningen, The Netherlands

G05-O2 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August
27, 2025, 2:00 PM - 4:00 PM

Infrastructure investments are traditionally assessed based on estimated economic benefits under *ceteris paribus* conditions, isolating their effects from contextual changes. Mainstream spatial-economic theories suggest that large-scale interregional transport infrastructure primarily benefits already strong regions at the expense of weaker economic areas. From a cost-benefit analysis (CBA) perspective, such projects are often deemed unviable due to low projected passenger numbers, while agglomeration effects reinforce economic concentration rather than regional redistribution. Consequently, infrastructure development remains focused on forecasted growth areas. However, the spatial structure of many countries face significant transformations in the coming decades, as factors beyond economic growth (such as climate adaptation, housing demands, and regional disparities) are becoming increasingly relevant. major spatial transformation efforts underway, infrastructure may play a crucial role in ensuring spatial and economic balance that is overlooked in *ceteris paribus* evaluations. These changing long-term conditions and associated uncertainty with context raises fundamental questions regarding the feasibility of applying traditional spatial economic paradigms based on *ceteris paribus* focused on economic benefits.

This exploratory study investigates how the large-scale transformation of the Netherlands influences perspectives on the spatial structuring role of infrastructure. The research focuses on two key questions: (1) How do different spatial-economic theories interpret the effects of large infrastructure investments on economically weaker regions, and what terminology is used across disciplines? (2) How do experts from different fields (spatial economics, planning, design, and future studies) assess the structuring effects of major transport infrastructure under conditions of uncertainty and spatial equity concerns? The findings will contribute to a better understanding of whether alternative evaluative frameworks are needed to assess the role of infrastructure investments within large-scale spatial transformations, where the evolving context shapes their role and effectiveness rather than the other way around.

Left-behind places and left-behind people

Dr. Ana Viñuela¹

¹Universidad de Oviedo, Oviedo, Spain

S91 Microdata in Regional Science, F12, August 29, 2025, 9:00 AM - 10:30 AM

What part of our present, personal and quantifiable outcomes (from educational level to well-being or waged income) depend on things out of our control? What part of whatever individual or household economic phenomena can be explained by the characteristics and performance of the area (as opposed to region) where the household is located? How deterministic is our *homo economicus* existence, behaviour or outcome after including in the economic phenomena under analysis the attributes of the area where we reside?

Obviously one could claim that individuals have the option to abandon the area where they live (voting with their feet), but in most of the cases truth is that left behind places -and regions- might have a high concentration also of left-behind people.

Using EU SILC microdata, the aim of this work is aligned with the present territorial cohesion agenda, which emphasis has moved from “regions” to “individuals” and “places”. Multiple local indicators covering not only the economic characteristics of an area (as opposed to region) but also sociological, demographic and physical aspects of the localities obtained from the EXIT Project are also considered to reveal the importance of the left-behindness typology

Green discontent and regional policies

Dr. Andrea Conte¹, Ugo Fratesi, Anabela Marques Santos

¹European Commission - JRC - Joint Research Centre, Seville, Spain

S57-S2 JRC Session - Understanding the Territorial Patterns of Climate Discontent, Amph 2, August 29,
2025, 9:00 AM - 10:30 AM

Regional policies have always been concerned with the environment. Indeed, since at least the 1970s, environmental protection has been one of the four main objectives, along with spatial equity/reduction of disparities, efficiency/growth and regional well-being. However, the way in which this objective has been interpreted has changed over time: previously, the rationale for this objective came from local problems and externalities, since too much agglomeration and congestion can lead to environmental degradation and pollution.

Today, however, the issues to be addressed have taken on a global dimension, with climate change playing a prominent role. For this reason, the regions are called upon to intervene in these aspects, as several problems can only be addressed with local solutions, thinking of adaptation measures or several mitigation measures. The problem is that less developed regions are not only on average more vulnerable to climate change, they are also less able to afford adaptation measures and, due to their specialisation, are more affected by the counter-effects of mitigation measures. This can lead to discontent in the regions, which regional policies can reduce or increase depending on the local situation and the policies implemented.

For this reason, this paper analyses the relationship between regional policies and two types of green discontent: 'we are doing too much' versus 'we are not doing enough'. To do this, the regions are classified according to the level and type of green policies implemented, and a multivariate analysis is then carried out to see which are the factors that influence the relationship between the two main variables and, in particular, whether there are some conditioning factors on them, including regional vulnerability to climate change and the presence in the region of important socio-economic issues that also need to be addressed.

The conclusions are that places that are more economically deprived are more likely to have 'too much' discontent, while places that are better off are more likely to have 'not enough' discontent; that there is no clear relationship between green policies and green discontent, as the sign depends on which type of policy and which type of discontent; that contextual factors are important and affect the relationship; that people's response to the same regional policy initiatives seems to depend on the most pressing issues in their region.

Monitoring systems for postgrowth cities. Pathways and recommendations to monitor societal progress

Prof. Eveline van Leeuwen^{1,2}, MSc Fabio Tejedor^{1,2}, Dr. Joppe van Driel²

¹Wageningen University & Research, Wageningen, The Netherlands, ²Amsterdam Institute for Advanced Metropolitan Solutions, Amsterdam, the Netherlands

S86-S2 Rethinking Economic Growth in Regional Science: on New Narratives and Indicators, G4,
August 27, 2025, 4:30 PM - 6:30 PM

Today, cities play a significant role in the discussion about sustainable development (SD). During the last 50 years, the unstoppable urbanisation process has been accompanied by perceiving cities as places of higher well-being. Elements such as education, health services, jobs, access to essential utility services, urban infrastructure, human connectivity, and innovative economies are positively perceived. However, a negative counterpart is rooted in the consumption of transboundary resources impacting natural ecosystems or the increasing inequality that leads to detrimental human well-being. This ambivalent position of looking at cities leads to locating the discussion within the scope of pursuing cities' sustainable development for current and future generations.

One key aspect relates to how cities transition towards SD and if alternative paradigms such as postgrowth could promote ecological balance, social justice and local resilience. In particular, the role of urban monitoring systems and indicators are key because they facilitate bridging the abstraction of SD with the policy-making process. In this regard, the volume of metrics and indicators is expanding according to an increasing data production and growing ICT technologies, such as AI and big data analytics. Moreover, urban monitoring systems are often developed according to a specific framework, leading to redundancy and fragmentation in the decision-making process. For instance, the operationalisation of SD according to the SDGs, Doughnut Economics (DE), and Broad Prosperity (BP) in Amsterdam present overlapping visions about the city's SD while simultaneously limiting collaboration and communication across different stakeholders.

This study thus aims to identify key factors that enhance urban monitoring systems to better envision post-growth cities. It does so by conceptually and empirically comparing the SDGs, DE and BP frameworks and their monitoring systems and identifying how the local governments and policymakers can use this knowledge in the policy-making process. We used the city of Amsterdam as a case study.

Rethinking economic growth in Regional Science: on (new) narratives and indicators

Prof. Eveline van Leeuwen^{1,3}, Prof. Aleid Brouwer²

¹Wageningen University & Research, Wageningen, The Netherlands, ²University of Groningen, Groningen, The Netherlands, ³Amsterdam Institute for Advanced Metropolitan Solutions, Amsterdam, the Netherlands

S86-S1 Rethinking Economic Growth in Regional Science: on New Narratives and Indicators, G4,
August 27, 2025, 2:00 PM - 4:00 PM

Economic growth has been a dominant goal and narrative, basically since the development of GDP after the Second World War. The modern concept of Gross Domestic Product (GDP) was first developed by Simon Kuznets for a 1934 U.S. Congress report, where he warned against its use as a measure of welfare. After the Bretton Woods Conference in 1944, GDP became the main tool for measuring a country's economy. And it not only became the main measuring tool, economic growth (as measured by GDP) also became the 'main solution for everything': from poverty, unemployment, environmental destruction, climate change, financial instability, etc. (Daly, 2019). Many scientists, including Noble prize winner Joseph Stiglitz, have shown that society in general and the economics discipline more specifically needs a different compass than GDP (Hoekstra, 2019). Alternative economic models have been proposed, such as Doughnut Economics, Sustainable Development Goals, Steady State Economics, De-growth and Green Growth (D'Alessandro et al., 2020). The fundamental value which these models have in common is that they make a distinction between present wellbeing, future wellbeing (sustainability) and also the distribution of wellbeing within and between countries (inclusion). But how to conceptualize and measure this in a way that is meaningful (i.e. measuring what matters) and clear (through a moderate number of indicators), as well as appropriate for the right spatial scale?

In this paper, we analyze how economic growth is used within the regional science literature: to which topics is it linked, what conclusions are drawn and how is this translated into policy recommendations? In a next step, we will analyze to what extent new concepts as broad prosperity and postgrowth are used and implemented.

To answer these questions, a structured literature review within the ERSA/RSAl journals will be performed.

Noise valuation through the shock of airport closure: testing a new causal identification strategy for hedonic pricing based on comparables

Dr. Sotirios Thanos¹, Prof Jean Dubé²

¹University Of Manchester, Manchester, United Kingdom, ²Laval University, Quebec City, Canada

G16-O2 Statistical And Econometric Methods of Urban and Regional Analysis, G1, August 27, 2025,

2:00 PM - 4:00 PM

A key tool for the valuation of spatial amenities is the Difference-in-difference Hedonic Pricing (DiD-HP) model that exploits exogenous shocks to capture causal effects but relies heavily on fixed effects (FE) to address spatial and temporal omitted variable bias (OVB). This paper first develops a “differenced Comparables Sales approach” (dCSA) approach based on comparable sales occurring in close spatial proximity and tight time-window before a house sale. By differencing out common spatial observable and unobservable amenities between comparables, dCSA is evidenced to deliver a spatiotemporal OVB treatment without relying on FEs, which is especially useful in cases of sparse and challenging data. We then develop a causal identification strategy that integrates DiD and dCSA. We first validate the dCSA-DiD approach by replicating Linden and Rockoff (2008) results with improved statistical significance. We, then, employ the unique exogenous shock of airport closure in Athens, Greece, to construct a quasi-experimental setting for aviation noise valuation, which is not possible through HP-DiD due to its limitations. Through the dCSA-DiD, we find that the airport closure resulted on average to a 5.41% price increase or a 0.74% price increase per decibel of noise reduction. When we consider the total number of previously exposed houses, our results suggest over 1 billion €s of potential benefits capitalised in the local housing stock because of the aviation noise termination. We also found that noise reductions are not valued linearly above 65 decibels, as for instance we find a 4.6% price increase per decibel for noise reductions above 70 decibels, which translates to a substantial €219,649 price increase.

Which Factors Matter in Location Choice of Restaurants and Bars? A Longitudinal Analysis of Temporal, Ethno-Demographic, Socio-Economic and Accessibility Attributes

Mr Jonathan Wood¹, Dr. Sotirios Thanos¹, Prof Anupam Nanda¹

¹University of Manchester, Manchester, United Kingdom

G22-O4 Housing, Real Estate, Urban Renewal, Gentrification, Displacement, Urban Policy and Urban Transformation, Living Conditions, Built Environment, G6, August 28, 2025, 4:30 PM - 6:30 PM

The literature of bar and restaurant location patterns does not account sufficiently for temporal dynamics and the role of urban spatial. We address these gaps by developing a novel urban economic framework with a two-fold empirical approach: a) dynamic longitudinal Poisson models that incorporate socio-economics, demographics and accessibility to analyse temporal shifts in the concentration of bar and restaurants, or ‘hotspots’; and b) a longitudinal logit approach that models the determinants of bar and restaurant ‘deserts’. We compile a unique dataset of more than 1100 small areas over a 17-year period (2002–2019) across two carefully selected UK city-regions, Greater Manchester and Nottingham. The key findings reflect a fundamental shift in consumer preference over time. During the study period, the probability of bar ‘desert’ formation increased almost 20-fold along with the reduction in bar counts by around 35 percent in both study-areas. Conversely, restaurant numbers have increased by almost 35 percent and the probability of restaurant ‘deserts’ reduced by at least a factor of 5. While, the Poisson specification provides evidence of positive path dependence in areas with an established bar and restaurant ‘ecosystem’, both approaches show significant accessibility, agglomeration, and socioeconomic sorting effects.

How economic policy uncertainty and financial development impact CO2 emissions?

Prof. Mei-se Chien¹

¹National Kaohsiung University Of Science And Technology, Kaohsiung, Taiwan

G20-O3 Regional Policy, Cohesion Policy, Financial Instruments and Policy Assessment, G5, August 28,
2025, 4:30 PM - 6:30 PM

This paper examines the impact of economic policy uncertainty and financial development on CO2 emissions. The methodology employs panel Autoregressive Distributed Lag (ARDL) bound testing and impulse response analysis for estimation, using panel data from 2000 to 2020 for 109 countries, including 30 developed countries and 79 developing countries. The empirical results can be summarized as follows:

First, the ARDL long-term relationship estimation for the full sample shows: (1) Financial institution development, financial market development, and overall financial development all increase CO2 emissions. Compared to financial institution development, financial market development has a smaller effect on increasing CO2 emissions. (2) The negative impact of World Uncertainty Index (WUI) on CO2 emissions, indicating that higher economic policy uncertainty reduces CO2 emissions.

Additionally, the higher interaction effect between WUI and overall financial development increases CO2 emissions, but the interaction effects of financial institutions and financial markets with WUI show no significant impact.

Second, the ARDL long-term relationships for developed and developing country groups show: (1) In both developed and developing countries, financial institutions, financial markets, or overall financial development increase CO2 emissions, with this effect being greater in developed countries. (2) An increase in the World Uncertainty Index (WUI) reduces CO2 emissions in developing countries but has no significant effect in developed countries.

Finally, impulse response analysis shows that in developed countries, changes in both financial markets (FM) and financial institutions (FI) have significant positive impacts on CO2 emissions within two years, while in developing countries, only financial markets (FM) have a significant positive impact on CO2 emissions in the third year. Furthermore, regardless of whether countries are developed or developing, the impact of the World Uncertainty Index on CO2 emissions is insignificant.

Energy poverty response to COVID-19 and energy crisis in European NUTS 1 regions

Dr. Lilia Karpinska¹, Professor Sławomir Śmiech¹

¹Krakow University Of Economics, Krakow, Poland

G10-O5 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,

August 29, 2025, 2:00 PM - 4:00 PM

The recent energy crisis and the preceding COVID-19 pandemic impose danger on the well-being of the most vulnerable groups, causing the spread of energy poverty across Europe. This study examines the level and dynamics of energy poverty in 2019, 2021, and 2022, focusing on macro-regions (NUTS1) in 23 European countries. The data is aggregated from the EU Survey on Income and Living Conditions conducted with households in all EU countries. Following the Mazziotta-Pareto approach, we put forward a new comprehensive measure of energy poverty comprising several non-substitutable indicators with the possibility of conducting intertemporal comparisons. Latent hierarchical models are built to assess the variability within and between countries. Our results indicate that 2019-2022, European regions faced diverse levels and dynamics of energy poverty within countries. Bulgaria, Lithuania, Greece, and Portugal experienced the most hardship. We note substantial regional variability and opposite dynamics in Romania, Portugal, Italy, and Greece, which calls for a mindful regional cohesion policy. Our analysis reveals considerable regional heterogeneity in energy poverty levels. However, changes in these levels are predominantly driven by national rather than regional factors. This may indicate either the pivotal role of national policies in responding to crises or the absence of regional policies specifically aimed at combating energy poverty. Regional trends are strongly influenced by the broader national context, suggesting that energy-related programmes targeting households were largely implemented nationwide.

Predicting regional patents diversification and their triggers: an explainable machine learning approach

Mr Bennour Mohamed Hsin¹

¹PTE KTK, Pécs, Hungary

S68 The Role of Foreign-Owned Companies in Regional Development: Opportunities and Challenges in a Double-edged Relationship, A5, August 28, 2025, 4:30 PM - 6:30 PM

The complexity literature offers an elegant implementation of the principle of relatedness. However, it faces limitations due to having more categories than regional anchors, given its reliance on co-occurrence, which can obscure actual relationships. This prompts the need to capture these relationships using non-linear methods. In this paper, we leverage Random Forest, a tree-based machine learning algorithm, to capture complex, non-linear relationships among patent classes. We first construct the Revealed Comparative Advantage (RCA) matrix at the NUTS2 regional level for each year from 1978 to 2018, then train a Random Forest model for each of the 641 patent classes, using a 4-year lag structure to predict future regional expertise. Our results effectively capture relationships between technologies and successfully predicted the structural break in patenting activities observed in 2011, particularly for highly complex technologies, using data from 2007. Additionally, we address class imbalance in our data and utilize these predictions to propose a comparative framework assessing regions' efficiency in leveraging their technological landscape advantages. This framework also opens opportunities for identifying optimal regional diversification strategies through network-based and Bayesian approaches.

The role of digitalization in improving SMEs' access to finance

Dr. Valentina Diana Rusu¹, Professor Angela Roman¹

¹Alexandru Ioan Cuza University of Iasi Institute Of Interdisciplinary Research, Iasi, Romania

G06-O2 Space and Digital Transformation, A1, August 28, 2025, 9:00 AM - 10:30 AM

Due to its substantial contribution to the creation of new jobs, added value, and innovations, the small and medium-sized business (SME) sector is essential to a nation's economic and social development. However, small and medium-sized businesses encounter many barriers to financing when compared to larger companies. The global business landscape has changed dramatically in recent years due to advancements made possible by digital technologies. They also provided SMEs with new chances to enter new markets, strengthen their resilience, and remove barriers to funding. Therefore, we investigate the degree to which SMEs' access to financing would be enhanced by the use of digital technology. Furthermore, we seek to determine whether the relationship between a firm's access to financing and the use of digital technology varies depending on the size of the firm. Our investigation, which is based on statistical data for 2009–2023, applies panel data estimation techniques to a selection of European nations. Two indicators that gauge SMEs' financial accessibility serve as the dependent variable in the econometric model, while several indicators pertaining to the use of digital technologies serve as the independent variables. Overall, our findings demonstrate that by reducing financial barriers, digital technology use can have a major impact on SMEs' access to funding. Policymakers who are interested in implementing certain policies to promote SMEs' use of digital technologies to reduce barriers to obtaining outside funding sources could find our results useful.

Spatial dimensions of social exclusion & gender inequalities: municipality of myki in the regional unit of Xanthi, Greece

Dr. Dimitra Foufri¹, Dr Yannis Doukas¹

¹National And Kapodistrian University Of Athens, Athens, Greece

G10-O2 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 27, 2025, 2:00 PM - 4:00 PM

This paper is about the social inequalities inscribed in space and the role they play in the social exclusion of women. The Municipality of Myki, in the Regional Unit of Xanthi, which is mainly inhabited by the Pomaks group of the Greek Muslim minority, was chosen as the field of research. In the study area, social inequalities are also inscribed in the spatial development of the population. In this paper, the position of women and in particular the differentiation of the social composition of the area of the Pomaks of the Municipality of Mykes from that of the wider area of the Regional Unit (RU) of Xanthi, as well as from the whole of Greece, is examined.

In this research, the data from the latest ELSTAT census (2021) were studied and analyzed.

The analysis gives priority to two parameters that are critical for the study of the spatial and social exclusion of the Pomaks of Xanthi and especially of the women of this group. The following are analysed: (a) the labour market integration of the population and especially of women and (b) the level of education of the population and especially of women.

This study delves into the gender dimension by examining the integration in the productive process and the level of education of women in the study area. It reveals a significant differentiation in educational attainment between men and women, greater than that of the Regional Unit of Xanthi and the country as a whole.

Also, as the data show, women in the Municipality of Myki are doubly excluded because of the area where they live and because of their gender. The Pomaks of the Municipality of Myki, especially women, have difficulty in integrating in terms of equal opportunities in the labour market and a low level of education, which limits access to high-income occupations and higher social status.

Here, an attempt is made to investigate one aspect of the process of spatial social exclusion of the Pomaks, particularly women in the study area, in order to arrive at a broader explanatory scheme of the spatial social exclusion of women in the Municipality of Myki.

Keywords: spatial-social exclusion, gender inequalities, unequal spatial development

Conceptualising Regional Labour Market Transformation in the context of the Green and Digital Transition: Job Destruction, Job Creation, Geographical Implications

Dr. Nikos Kapitsinis¹

¹University Of Copenhagen, Copenhagen, Denmark

S40-S2 Just Transition Governance: The Challenges of Justice, Place-based strategies and monitoring mechanisms, F12, August 27, 2025, 2:00 PM - 4:00 PM

Macro drivers of change, including technological change, globalisation, and green transition, as well as extraordinary phenomena, such as the 2008 global economic crisis and the Covid-19 pandemic, have restructured labour. The green transition transforms European labour markets, though its effects on job creation and destruction (JCD) vary significantly across regions. Carbon-intensive areas are particularly vulnerable, facing the most severe implications. This occurs alongside the digital transition that promotes more sustainable production methods, including automation and autonomy.

Digitalization and greening the economy are interconnected and mutually reinforcing: on the one hand, digitalization contributes to more environmentally friendly production processes, while the greening of the economy necessitates the adoption of digital solutions and more advanced technologies to accompany structural changes. These uneven implications are not only economic, with recent literature on economic geography introducing concepts such the “geography of discontent” or the “revenge of places that don’t matter” that remark the idea that places that suffer declines on their economic dynamism and a loss on jobs offered, are more prone to express their discontent. Vulnerable groups—such as migrants, NEETs (young people not in education, employment, or training), and low-skilled workers—are especially at risk, as they are overrepresented in high-risk sectors and face greater challenges when seeking re-employment.

Existing views on the process of JCD have provided crucial insights for the transformation of labour markets in the current transitional period, although focusing on the demand side, particularly related to skills needed. Moreover, the largest part of literatures on JCD and its effects focuses on the national level, particular sectors, predominantly approaching them from a quantitative perspective, thus relatively overlooking working conditions in the jobs created. Thus, the conceptualization of JCD remains rather constrained by these limitations.

This paper will propose a comprehensive conceptual framework on JCD and its geographically and socially uneven effects that will adopt a geographical political economy approach on the transitions, since the latter are frequently localised processes that occur in multi-actor, multi-scalar and multi-dimensional environments, with the aspects of the geographically-specific context shaping the evolution of transitions in various places and territories. This framework seeks to evaluate the long-term effects of JCD, accounting for the gender dimension, and from both demand and supply sides, issues that have been relatively neglected in the academic and policy debates, while also providing with alternative explanations on the factors of uneven implications of JCD.

Age-friendly Urban Public Space in a 15-minute City Concept

Dr. Elżbieta Zysk¹

¹University of Warmia and Mazury in Olsztyn, Olsztyn, Poland

G07-O1 Spatial Attributes of (de)Population, Ageing, Loneliness and Demographics, A4, August 27,
2025, 2:00 PM - 4:00 PM

Urban development and the growth of the older citizen population pose new challenges for spatial policy in urban areas. Taking into consideration the variety of needs and expectations of vulnerable groups (older people) as residents and users of urban public spaces is a fundamental task facing today's city managers. The aim of this research is to elaborate on the determinants relevant to vulnerable groups (older people) in identifying the friendliness of urban public spaces in the concept of 15-minute cities. Various methods and techniques were used to realise the set aim. The added value of the research conducted is the complementation of the required knowledge on age-friendly cities in the concept of 15-minute cities.

An original input is the development of a universal methodology for the identification of Strategic Intervention Areas for the 60+ population (SAI 60+), validated on the example of a selected city in Poland.

Women in urban public spaces in European selected countries

Dr. Elżbieta Zysk¹

¹University of Warmia and Mazury in Olsztyn, Olsztyn, Poland

G10-O3 Socio-Spatial Inequalities: Segregation, Migration; Gender, Discrimination, Social Exclusion, B2,
August 29, 2025, 9:00 AM - 10:30 AM

Urban development and population growth present new challenges for the development of urban public spaces (UPS) in cities. Efficient (UPS) management and the creation of welcoming public spaces is an important determinant for creating egalitarian and inclusive cities. Considering the diversity of needs and expectations of (women) as residents and users of urban public spaces is a key task facing modern city managers. Women's public participation is important because identifying their needs and taking them into account in urban spatial policy contributes to the creation of safe, egalitarian and inclusive cities, tailored to the needs and expectations of residents and users, according to the 'everyone is important' principle. The aim of this article is to identify women's needs and expectations of urban public spaces in selected European countries. Various research techniques and methods were used to achieve the objective. The added value of the research carried out is to fill a research gap in urban planning in cities to focused sensitive groups such as women.

Factors impacting e-government development in Greece

Ms. Konstadina Kasabali¹, Prof. Persefoni Polychronidou¹

¹International Hellenic University, Serres, Greece

S56-S3 Digitalization and Inequality: Territorial Disparities and Policy Effectiveness, Amph 2, August 29,
2025, 2:00 PM - 4:00 PM

This paper explores the factors influencing the development of e-government in Greece, drawing insights from existing research on socio-demographic characteristics, economic growth, and technological advancements. E-government, which leverages internet technologies to enhance public administration and citizen engagement, varies significantly in adoption across different regions. By examining socio-demographic factors such as urban population, education levels, and age, as well as economic indicators like GDP growth and e-commerce development, this study aims to identify key determinants of e-government progress in Greece. Utilizing a regression model the research assesses data from various sources, to provide a comprehensive understanding of how information and computer technology, human capital, and economic conditions impact e-government development. The findings highlight the importance of these factors in shaping the effectiveness and reach of e-government initiatives, offering valuable insights for policymakers and stakeholders in Greece.

BEV adoption in Germany – Regional analysis of attitudinal, socio-economic and contextual factors

Mr Johannes Lohwasser¹, Mr. Axel Schaffer, Mr. Sebastian Brun

¹Bundeswehr University Munich, Neubiberg, Germany

G05-O4 Transportation, Energy and Communication Infrastructures: Regional Dimension, A2, August 28, 2025, 9:00 AM - 10:30 AM

The discussion on the adoption of battery electric vehicles (BEVs) often differentiates among attitudinal, socio-economic, and contextual factors. In this context our interest lies in the regional manifestation of these factors for BEV adoption in the full sample of 399 German districts and in two subgroups (independent city districts, counties). In contrast to earlier studies, the rich data allow for an analysis of actual purchasing decisions and a separated consideration of private and commercial BEV adoption. While the commercial BEV fleet is larger in the cities, and often related to a region's economic wealth, BEV adoption in less urbanized regions is more dependent on private households and particularly affected by socio-demographic drivers (e.g., size of households). Furthermore, we find positive impacts of pro-environmental attitude for both segments, indicating that commercial BEV procurement is not solely driven by an economic rationale. Finally, BEV adoption relates to private and public charging infrastructure and to other transport modes and concepts (e.g., car sharing and public transport). Based on the empirical findings we offer three main policy implications: First, policy should strengthen the pro-environmental aspects of e-mobility. Second, measures to improve the charging infrastructure should address both, public and private access in all types of regions. Finally, efficacy of policies to foster BEV adoption relate to other transport policies and should be embedded into an integrative mobility concept.

Disentangling regional policy paradigms. Using eTools to understand and compare the impact of regional development policies in the European Union

Dr. Peter Meister-Broekema¹

¹Hanze, Groningen, The Netherlands

G25-O2 Enriching Research and Policy Methods in Regional Science: Digital Tools, Artificial Intelligence, Participatory Methods, Mapping Techniques, Stakeholder Involvement, Amph 3, August 28, 2025, 4:30 PM - 6:30 PM

Regional development has often been described in economic terms, using economic indicators such as growth in GDP or demographic indicators such as net migration or employment. Some researchers argued that regional development should be understood broader, by including for example social indicators and living environment indicators. Recently, researchers have shown that policies directed towards regional development have broadened as well, but are also still evaluated within specific narratives or frameworks that often constitute the goals of the policy. This self-constituting practice of an amalgam of related policies has also been referred to as a policy paradigm. Because policies are often evaluated within these policy paradigms it becomes difficult to decontextualise them, disentangle them and compare policies with each other.

In this paper we propose to use a different, more quantitative and comparative method. By applying the above mentioned work from Andy Pike on numerous data sources from EUROSTAT and OECD, researchers from the PREMIUM_EU project developed a new framework that is measuring Regional Development (dubbed “R”) using economic, social and living environment indicators.

Method

By regarding this “R” (and individual indicators) as an outcome of public policies on the local, regional, national and international level and by analysing regional development policies on different levels from 2010 and onwards we believe it is possible to understand the impact of these policies in a more evidenced based sense, regardless of the above mentioned different types of narratives or frameworks.

Based on the work of Moritz Schütz presented during the ERSA 2024 conference, we developed and employed a webcrawler to automatically download and summarise policies from municipalities, regional and national authorities and analyse the results of this exercise.

Findings/results

The webcrawling and -mining exercise in combination with the new set of indicators will offer a much broader and more comprehensive view of the use and necessity of regional development policies. The findings will be discussed in dedicated policy labs with policymakers and researchers from the respective regions.

Discussion/conclusions

Both the new set of indicators and the analysis of the policies are not only innovative, but will also be viewed as speculative. Although we believe that a direct causal relationship between policies and the regional development will be hard to uncover, we do believe that this research will move the field of policy analysis forward, because it is more focused on evidence-based indicators and is based on larger sets of policies.

Detection of Resilient Structures in the Input-Output tables of Greece: a Complex Networks Approach

Dr. Dimitrios Tsiotas¹, Dr. Elias Giannakis², Prof. Christos Papadas²

¹Agricultural University of Athens, Amfissa, Greece, ²Agricultural University of Athens, Athens, Greece

G16-O1 Statistical And Econometric Methods of Urban and Regional Analysis, G1, August 27, 2025,
11:00 AM - 1:00 PM

An Input-Output (IO) Table is a model that captures financial exchanges among sectors at various macroeconomic levels, including international, national, multiregional, and regional. By recording the volume of sectorial interconnections, an IO-Table provides a useful model for understanding an economy's structure, which is a major determinant of its functionality in response to disruptions. While traditional approaches to IO analysis examine the structure of the economy based on multiplier and linkage analysis, this paper conceives the square matrix of intermediate demand of an IO Table as a graph model and applies complex network and community detection analysis. Using the network paradigm to examine an IO economy allows the unveiling of structural information beyond the traditional approaches. Based on national sectorial data of the period 2005-2015 from Greece, this paper examines the topological features of the Greek IO economy prior to and after the 2008 economic crisis and detects sectors (IO network nodes) and markets (IO network communities) that were either resilient and vulnerable to this disturbance. The analysis provides empirical insights into the resilient performance of the Greek economy in terms of sectorial clustering at the neighborhood scale; the country's tertiary specialization; the fixedness in the community membership of the trade and transportation industries; the inelastic demand in energy-related economic activities; and the commuting behavior in connectivity of the construction-related economic activities and the public sector. The analysis also provides evidence to consider tourism as a dynamic sector in Greece more due to its derived demand than its direct product. The community detection analysis revealed that the primary sector in the Greek economy is underperforming, while there is a significant level of integration between the secondary and tertiary sectors, particularly in tourism, transportation, and energy activities. Overall, this paper promotes the use of network analysis in input-output models and emphasizes the importance of interdisciplinary approaches in Regional Science.

The effects of internal migration on manufacturing firms: Evidence from Vietnam

Dr Steven Bond-Smith¹, Dr Toan Nguyen², Mr Duy-Anh Phan³

¹University of Hawai‘i at Mānoa, Honolulu, United States, ²Australian National University, Canberra, Australia, ³Monash University, Melbourne, Australia

G09-O4 Migration, Mobility Patterns and Impacts Across Space, A4, August 29, 2025, 2:00 PM - 4:00 PM

We exploit exogenous agricultural income shocks in Vietnam to examine the role of internal migration in economic development. By studying richly detailed administrative data on all manufacturing plants, this study offers the first examination of the causal effects of internal migration on quantity-based firm productivity, as well as several other dimensions of manufacturing firm performance. Our analysis reveals that migration initially leads to lower marginal costs, prices, and wages within existing firms. However, we find no evidence of persistent impacts on quantity-based firm productivity, quantity per worker, revenue per worker, size, or capital intensity. Instead, excess labor is absorbed by new firm entry. Our findings suggest that in environments with low entry barriers, internal migration drives structural change and aggregate output growth primarily through firm creation, without impacting the productivity of incumbent firms.

The trade and growth effects of a common language policy for the EU regions

Dr. Jorge Díaz Lanchas¹, Dr. Javier Barbero², Dr. Gonzalo Gómez Bengoechea¹, Davide Rognini¹

¹Comillas Pontifical University - ICADE, Madrid, Spain, ²Universidad Autonoma de Madrid, Madrid, Spain

G04-O1 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 27, 2025,
11:00 AM - 1:00 PM

Language is considered one of the main determinants of trade integration. It operates as a facilitator or impediment to trade for regions. In this paper, we contend that language has heterogeneous effects on trade performance of the European regions. We hypothesize that left-behind regions are negatively affected by their lower competence in speaking foreign languages. We create a novel language similarity indicator for the EU based on individuals' linguistic capabilities across EU regions and resort to a structural gravity model to estimate its impact on trade flows. Results show that language similarity reduces border effects and upgrades trade integration. These results get stronger in neighboring regions at a national border. Furthermore, we simulate the impacts on trade and GDP of an EU-wide policy shock based on the promotion of English as the most spoken learnt language in the EU. Results point out to positive aggregate increases on European trade flows and GDP of around 3.4% and 0.54%. These effects are concentrated in the poorest and left-behind European regions whereas native English speaking regions suffer from trade diversion effects. In a context characterized by hot dilemmas around territorial disparities, our paper contributes to this debate by highlighting the advantages of a language promotion strategy across low-income and left-behind European regions.

The impact of AI and other digital technologies on the financial sector in Central and Eastern European countries

Ms Amanda Wolf¹, Prof. Dr. Márta Konczos Szombathelyi¹, Prof. Dr. Tamás Dusek¹

¹Széchenyi István University, Győr, Hungary

S70 The Role of AI in Turbulent Times: Challenges, Opportunities and Best Practices for Data-Driven
Regional Resilience, Amph 3, August 29, 2025, 9:00 AM - 10:30 AM

The impact of AI and other digital technologies on the financial sector in Central and Eastern European countries

Amanda Wolf, Márta Konczos Szombathelyi, Tamás Dusek

Széchenyi István University, Doctoral School of Regional- and Business Administration Sciences, Győr, Hungary, ORCID ID: 0009-0001-4271-2060, wolf.amanda@sze.hu

Széchenyi István University, Doctoral School of Regional- and Business Administration Sciences, Győr, Hungary, ORCID ID: 0000-0001-5248-7752, kszm@sze.hu

Széchenyi István University, Doctoral School of Regional- and Business Administration Sciences, Győr, Hungary, ORCID ID: 0000-0001-9953-2127, dusekt@sze.hu

Abstract

The rapid development of Artificial Intelligence (AI) and other digital technologies are having a significant impact on the financial sector worldwide. This paper takes a comprehensive look at the impact of AI and digital technologies in investment strategies and corporate finance in East Central Europe. The research is based on empirical data analysis and qualitative and quantitative methods. It aims to identify technological trends and their impact on financial decision-making processes and market performance. The results will focus on three main areas: firstly, it will present the potential of AI and other digital and other technologies in financial analysis and portfolio management, highlighting the potential for efficiency gains and risk mitigation. Second, it discusses the potential of AI integration, including privacy issues and ethical challenges, which are important considerations for the safe and sustainable application of AI. Third, analyses the role of AI in driving financial innovation and market competitiveness, especially in the East Central European context. The results and conclusions offer a number of relevant implications for financial sector actors, the policy makers and regulators. In addition to the need for further research and development, the study provides recommendations for the financial sector on how to engage with and leverage the opportunities offered by AI and digital technologies to achieve sustainable growth and competitiveness.

Keywords: algorithms, artificial intelligence, Central and Eastern Europe, financial sector, forecasting, market trends, portfolio

JEL Classification: G11, G14, G15, G17, G21, G24, G32

Trade diversion: how US tariffs redefine trade between European regions

Prof. Roberta Arbolino¹, Dr. Raffaele Boffardi¹, Prof Nicola Spagnolo²

¹University of Naples L'Orientale, Naples, Italy, ²University of Campania Luigi Vanvitelli, Caserta, Italy

G04-O5 International Trade, Global Value Chains (Gvcs) And Regional Growth, A4, August 29, 2025,
11:00 AM - 1:00 PM

In recent years, the intensification of global protectionist tensions, as demonstrated by the trade war between the US and China that began in 2018, has raised questions about the indirect impact of international trade shocks on third-party economies. This study analyzes whether and to what extent a reduction of exports from some European regions to the United States - induced by tariff barriers - can generate a reallocation of sales to other regions of the European Union, leading to intra-EU trade diversion.

The analysis is developed at sub-national level (NUTS-2) and adopts the methodology of local projections (Jordà, 2005) to dynamically estimate the effect of an exogenous trade shock on intra-European import flows. The shock measure is based on the variation of US tariffs imposed between 2018 and 2025 on specific sectors, allowing a plausible exogenous identification. The basic assumption is that the regions affected by the contraction of US demand will redirect part of their production towards European domestic markets, with heterogeneous effects depending on the pre-existing trade structure, the sectoral substitutability of goods, the stage of the prevailing economic cycle and monetary regime.

The empirical approach allows to test an articulated set of hypotheses: (i) the existence of significant intra-EU trade diversion effects in response to an external trade shock; (ii) the dependence of the intensity of the phenomenon on the degree of trade exposure between regions; (iii) the facilitating role of the sectoral substitutability of goods; (iv) the greater absorption capacity of regions in expansion phase of the cycle; (v) the modulation of effects according to the presence of monetary policy constraints (ZLB).

The expected results make a twofold contribution. From a theoretical point of view, the work extends the literature on the indirect effects of global shocks by demonstrating that the European interregional trade structure can act as a channel for transmission and absorption. On the policy side, empirical evidence can guide the definition of strategies for industrial resilience and territorial cohesion, suggesting the importance of policies aimed at supporting regions that can offset external demand with new internal opportunities.

Talent geography comparison from the perspective of social value creation – three peripheral regions of three European countries

Dr. Tibor Kovács¹, Dr. Szabolcs Mátyás², Dr. Mária Vasvári³

¹Hungarian University Of Agriculture And Life Sciences, Gyöngyös, Hungary, ²Ludovika University of Public Service, , , ³Debrecen University, ,

G13-O1 Social Capital, Territorial Capital, Institutions and The Commons, F5, August 27, 2025, 11:00 AM - 1:00 PM

The spatial concentration, migration and retention of talent play an increasingly important role in understanding the dynamics of regional development and socio-economic inequalities. The interdisciplinary approach of talent geography draws attention to the fact that the spatial and social environment—the institutional background, community attitudes and development policy guidelines—fundamentally influence the identification, support and empowerment of talent. This issue is particularly critical in the case of peripheral regions, where migration, ageing and lack of resources pose serious challenges to the renewal of human capital.

The study is based on a comparative analysis of talent management practices in three European NUTS3 regions with different socio-economic conditions but similarly peripheral—Jász-Nagykun-Szolnok (Hungary), Altmarkkreis Salzwedel (Germany) and North Ostrobothnia (Finland). The aim of the study is to explore to what extent and in what way talent management is reflected in the educational-cultural institutional system, in social discourse and in local or regional development policy strategies in the regions. The research also seeks to identify good practices that can be adapted for other disadvantaged regions.

The research uses both qualitative document analysis and quantitative statistical analysis. In addition to examining the socio-economic characteristics of the regions—demography, education, income situation, labour market opportunities—the institutional environment and operational logic of talent management were mapped.

According to the results, the Finnish North Ostrobothnia has the most coherent, institutionalized, and long-term functioning talent management system. The strength of the Finnish model is the network cooperation between state, local government, civil society, and educational actors, and the fact that talent management is an integrated part of regional innovation and development strategies. In contrast, in the Altmarkkreis Salzwedel region in eastern Germany, decades of emigration, population aging, and institutional anomalies hinder the systemic embedding of talent support, while in the Hungarian Jász-Nagykun-Szolnok county the situation is even worse, as the lack of strategic planning, institutional fragmentation, central dependence, and the strengthening of state re-centralization over the past decade and a half have led to talent management being mostly limited to project-based, short-term, isolated initiatives.

The practical message of the research is that talent management is not only an educational policy issue, but should be an integral part of regional development policy. A complex, network-based approach can help retain and withdraw human resources and strengthen regional value creation. Finnish practice can be a useful compass for Central European regions as well.

Cultural renewal in Kisújszállás: A path to sustainability of a Hungarian small town?

Dr. Tibor Kovács¹, Dr. Mária Vasvári²

¹Hungarian University Of Agriculture And Life Sciences, Gyöngyös, Hungary, ²Debrecen University, Debrecen, Hungary

G15-O6 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness, Quality of Life, B6, August 29, 2025, 2:00 PM - 4:00 PM

This case study explores the potential for cultural-based renewal in Kisújszállás, a small town located in the Hungarian Great Plain. The town, facing demographic decline, socio-economic challenges, and environmental constraints, is searching for sustainable development paths rooted in its unique cultural and historical identity. The objective of the research is to analyse the structural problems of the town and evaluate whether cultural assets and identity can become a viable driver for long-term renewal and resilience.

The authors employed a mixed-method approach combining quantitative and qualitative tools. A primary data source was a questionnaire survey conducted between summer 2022 and January 2023 among 21 local key actors, including public officials, entrepreneurs, cultural managers, and clergy, achieving an 81% response rate. Respondents evaluated the town's cultural assets, municipal governance, and economic conditions using a five-point Likert scale. Supplementary data included statistical analysis from national and local sources, as well as insights from development documents and the “lived geography” methodology to assess social attitudes and identity.

Results reveal that despite a rich cultural heritage—such as the legacy of István Csukás, the legendary Hungarian poet and storyteller, the unique rice and Indian rice cultivation, and the multifunctional Vigadó Cultural Centre—Kisújszállás suffers from underfunding, weak PR and marketing, centralisation, low civic engagement, and poor entrepreneurial dynamism. Respondents particularly highlighted the low cultural demand among residents and limited use of cultural resources for economic or touristic purposes. A lack of industrial infrastructure and innovative business culture further undermines economic development.

The study concludes that while the town's cultural assets are substantial, successful renewal requires shifting from point-based capabilities to process-oriented development. Culture should be integrated as a horizontal concept into broader urban development strategies. The authors argue that a culture-based renewal model, emphasizing identity-building, local resource mobilisation, and inclusive partnership, can strengthen social cohesion and promote long-term resilience. However, the current absence of strategic marketing, effective cooperation, and a shared vision among local stakeholders poses significant barriers.

This research underlines the importance of engaging local communities in cultural planning, enhancing visibility of local uniqueness, and combining traditional assets with contemporary cultural economy tools. Kisújszállás, positioned as the “cultural capital of Greater Cumania”, demonstrates that even in a peripheral, shrinking town, culture can be a foundation for renewal—if approached holistically, inclusively, and strategically.

Probing the spatial distribution of the new birth cohorts across the EU-27 and Greece

Dr. Prodromos Prodromidis¹

¹Centre for Planning & Economic Research (KEPE), Athens, Greece

G07-O2 Spatial Attributes of (de)Population, Ageing, Loneliness and Demographics, D1, August 28,
2025, 4:30 PM - 6:30 PM

As birth rates fall below the population replacement threshold in many parts of the world for the first time in ages, they cause considerable concern at the local, regional, national and international level. As a result, the EU Commission (2023) has presented the member states with a set of policy tools for managing demographic change, and the OECD's (2024) has issued guidelines to prepare local communities for the demographic change. The paper looks into the spatial distribution of the new birth cohorts across the EU-27 in 2024 (as provided by Eurostat) and across Greece (based on the country's 2021 census), and empirically analyzes the population shares. The estimated parameters of the explanatory factors employed suggest that there is room for diversified policy interventions and responses.

To Compete or Cooperate? Intermunicipal Management of Over-Tourism

Prof. Fany Yuval¹

¹Ben-Gurion University of the Negev, Mizpe Aviv, Israel

G01-10 Urban, Regional, Territorial and Local Resilience, B5, August 29, 2025, 2:00 PM - 4:00 PM

Is it beneficial for municipalities to cooperate or compete with one another to attract visitors? The myopic rationality of game theory favors competition for short-term gains, whereas the non-myopic theory of moves suggests that cooperation in this regard might be more farsighted, consensual, inclusive, and sustainable. To understand why popular cities switched to cooperation when faced with the crisis of over-tourism, even though the players' preferences about the outcomes did not change, we analyzed the case study of Amsterdam. The results indicate that the theories are appropriate in different situations. Thus, the theory of moves' rules - alternating choices, thinking ahead in making choices -- are more appropriate to finding a solution that would be stable in the future, not just one that is myopically stable in the present. We conclude that cooperation remains a more beneficial approach to managing tourism even in periods of under-tourism. Policy directions are provided.

Less developed regions and mission-led policies: up to the challenge?

Mr Francesco Molica¹, Ms Anabela Santos²

¹EURADA/Universite' libre de Bruxelles, Brussels, Belgium, ²European Commission, Joint Research Centre, Seville, Spain

S81 Europe's New Industrial Policy: a Friend or a Foe for Regional Convergence?, F12, August 28, 2025,
9:00 AM - 10:30 AM

In recent years, a new framing of innovation and industrial policies has emerged—often referred to as mission-led or transformative policies—which expands the traditional focus on economic and technological objectives to include societal (or sustainable development) goals, such as climate mitigation. Regional factors are critical for mission-led policies in two key ways: first, the exposure to societal challenges targeted by these policies varies significantly across regions; second, the effectiveness of these policies is highly influenced by specific spatial factors. This article explores these two intertwined and relatively understudied dimensions, with a particular focus on lagging regions. The first part unpacks the main factors that make these areas structurally more vulnerable to societal challenges and less capable of adopting—or fully benefiting from—transformative innovation and industrial policies designed to address such challenges. The second part assesses these dimensions empirically, focusing on climate change. Specifically, we develop a composite indicator that measures the vulnerability of European regions to the effects of climate change. We then assess the extent to which regional innovation and industrial policies and investments prioritise climate-related challenges, particularly in lagging regions. To this end, using text mining techniques, we analyse the priorities outlined in regional smart specialisation strategies and the climate-related projects funded by EU programmes at the regional level. The findings reveal the existence of a transformative innovation paradox: less developed regions, despite facing greater exposure to climate change, struggle to effectively develop policies and mobilize innovation to tackle it.

Valuing Historic High Streets: Integrating Cultural Heritage Capital into Urban Policy through Triangulated Economic Methods

Prof. Patrizia Riganti¹

¹School of Social and Environmental Sustainability, University of Glasgow, United Kingdom

G15-O4 Tourism, Carrying Capacity, Culture, Creative Industries, Leisure, Sports, Wellbeing, Happiness,
Quality of Life, B6, August 28, 2025, 4:30 PM - 6:30 PM

This article discusses the experience of the CAVEAT project, funded by the recently launched AHRC-DCMS programme to contribute to the development of the Department for Culture, Media, and Sport's (DCMS) Culture and Heritage Capital Framework. CAVEAT explores how existing valuation techniques can be triangulated to assess the value of a complex historic asset, such as a historic high street, to improve decision makers' confidence when using such results in Social Cost-Benefit Analysis. The project triangulates some of the key economic valuation methods to articulate the value of the historic high streets of Poole and Lincoln. The paper focuses on the methodological challenges linked with such triangulation and provides insights into the economic and social dimensions of heritage.

Clean air for cities? The effects of teleworking and e-commerce on air pollution

Dr. Miquel-Angel Garcia-Lopez

⁰Universitat Autònoma de Barcelona, Barcelona, Spain

G01-O6 Urban, Regional, Territorial and Local Resilience, B4, August 28, 2025, 4:30 PM - 6:30 PM

This paper investigates the impact of teleworking and e-commerce on air pollution, using the COVID-19 pandemic as a natural experiment. Our analysis combines mobility data, government imposed restrictions, and ground-level air pollution measurements to examine the concentration of various pollutants. Employing a high-dimensional model with time- and city-fixed effects, we estimate the daily and hourly effects of teleworking and e-commerce in major Spanish cities. The results indicate that during the pandemic, significant reductions in certain pollutants occurred on both daily and hourly timescales compared to non-pandemic periods. These reductions can be attributed to the increased adoption of teleworking and e-commerce, driven by mobility restrictions during the pandemic.

Dubé, Jean	1179	Rizzo, Leonzio	1059
Ferraresi ,	1059	Salotti, Simone	641
Massimiliano			
H. Bramantyo,	1167	Severinsen, Karl-	75
Arthur		Gunnar	
Loiacono, Luisa	1059		
A			
Aagesen, Håvard	725	Andreotti Pancera,	673
		Aline	
Abbasoglu	626	Androni,	435
Ozgoren, Ayse		Francesco	
Acs, Zoltan	670	Angei, Fabio	886
Adamakou, Maria	329	Angelidis, Minas	619, 667
Adamus, Jagoda	840	Antoniolli, Maria	227
		Eduarda	
Agnoletti, Chiara	24	Apostol, Stefan	670
Agostini,	631, 689	Arachovas,	911
Alessandro		Charalampos	
Ahn, Donghwan	485, 566	Araujo,	1039
		Veneziano	
Ahn, Hwikwon	485	Araujo-Rocha,	452
		Keli	
Ahn, HwuiKwon	566	Arauzo-Carod,	215, 452
		Josep-Maria	
Aiello, Fabio	887	Arbabi, Hadi	870
Akimowicz,	590	Arbel, Yuval	25, 26
Mikael			
Alessandrini,	604	Arbia, Giuseppe	489
Alfredo			
Alexiou,	686	Arbolino, Roberta	1201
Alexandros			
Alexiou, Faviola	329	Arbouch,	265
		Mahmoud	
Alexiou,	341, 342	Ardizzone,	429
Stavroula		Antonella	
Alexopoulos ,	723	Arena, Giacomo	222
Angelos			
Alfieri, Luca	235	Arena, Marika	897
Algieri,	903	Arends-Kuenning,	225
Bernardina		Mary	
Ali, Usman	605	Arendt, Lukasz	398
Alkay, Elif	1082	Aresu, Federico	240
Allers, Maarten	161	Aretoulis,	874
		Georgios	
Almalki, Sameera	453, 457	Argoneto,	1171
		Pierluigi	
Almeida,	163	Arlı, Alim	1102
Alexandre			
Almeida, Mariza	69	Armayones, Laura	385
Almeida Menezes,	81	Armondi,	156
Tatiane		Simonetta	
Alomair, Maryam	443, 444	Arnold, Becky	626, 1158
Altomonte,	449	Arribas, Iván	85
Andrea			
Alvarado Pachon,	878	Arruda, Ana	1043

Natalia		Claudia	
Alvarez Boulton, Ines	775	Laprovitera Arslan, Hilal	626
Alvarez Vilanova, Juan	939, 989	Artelaris, Panagiotis	1124, 1125, 1127
Alvarez-Vilanova, Juan	564	Arvanitidis, Paschalis	332
Alves, Alexandre Florindo	673, 847	Ascani, Andrea	435
Alves, Denis	713	Ascani, Michela	638
Amaral, Daniel	180	Aslankaya, Guzide	395
Amaral, Pedro	374	Audretsch, David	116
Amézquita, Laura	338	Augier, Laurent	1171
Amézquita , Laura	671	Avery, Thomas	86, 122
Amit, Assaf	371	Avnimelech, Gil	371
Amorim, Marlene	267	Aydin, Dilara	830
An, Donghwan	1002	Azami, Tomohide	555
Andersen, Henrik Lindegaard	760	Azzoni, Carlos	163, 448
Andersson, David Emanuel	51	Azzoni, Carlos Roberto	306
B			
Bacha, Carlos	69, 900	Bianchi, Annamaria	386
Badort, Alexandra	351	Bieleman, Martin	161
Bae, Donguk	485	Biferale, Lorenzo	591
Baggetta, Chiara	696	Bindi, Jacopo	631, 689
Bahlali, Mohamed	864	Bircan, Tuba	1165
Bakagiannis, Charalampos	106	Birgier, Debora	665
Bakker, Kristian	100	Biswas, Arindam	796
Balado, Roberto	560	Bjerke, Lina	984
Balia, Silvia	724, 774, 886	Blanco-Álvarez, Jose	1123, 1144
Balké, Rūta	924	Blanco-Arroyo, Omar	211
Ballas, Dimitris	688	Blandon Castaño, John Alexander	1112
Balomenou, Chrysanthi	257, 258	Blandon Lopez, Alexander	167, 170, 1112
Bandyopadhyay, Sumana	231	Blanquart, Corinne	640
Banica, Alexandru	852, 860, 875, 1133	Bocci, Chiara	24
Bănică, Alexandru	928, 935	Bock, Bettina	442
Bănică , Alexandru	117	Bock, Bettina	236
Baños, Jose	560	Bodnár, Gábor	266
Baranauskiene, Viktorija	299	Boffardi, Raffaele	1201
Barberis Rami, Matias	187	Boffi, Marco	888
Barbero, Javier	1199	Bøje-Kovacs, Bence	658
Barbieri, Giovanni	638	Bolea, Lucía	80

Barbieri, Roberta	273, 365, 1106
Barca, Flavia	189
Bar-El, Raphael	501
Barer, Margarita	16
Barkham, Richard	861
Barois, Brice	948
Baron, Marcin	777, 1128
Barranco, Ricardo	701
Barros, Geraldo	180
Barros, Pedro	308
Bartolomei, Francesco	689
Bartuseviciene, Ilona	336
Bas, Adeline	150
Basilico, Stefano	659
Basilico, Stefano	437
Bastianin, Andrea	1111
Batista, Gabriel	561, 905
Batista e Silva, Filipe	396, 604, 701
Baycan, Tüzin	282, 856
BAYCAN, Tüzin	830
Bechlioulis, Alexandros	127
Beck, Krysztof	78
Beghelli, Matteo	184
Bejenaru, Ioana	902, 933, 1122
Ben Arfa, Nejla	490, 500
Ben Hmida , Rania	1162
Bengtsson, Mattias	738
Ben-Shahar, Danny	1022
Bentolila, David	1047
Berchoux, Tristan	74, 557
Bergamini, Enrico	603
Bergantino, Angela S.	963
Bergantino, Angela Stefania	754, 865, 896, 897, 920, 922, 947, 1033, 1088
Bergantino, Angela Stefania	971, 972
Berretta, Miriam	714
Berruezo, Enrique	395
Bertacche, Ilenia	537

Bonaccolto, Giovanni	887
Bonaccolto-Toepfer, Marina	887
Bonaccorso, Mario	1171
Bond-Smith, Steven	870, 1198
Bonet, Jaime	569
Bonfiglio, Andrea Laura	146
Bonnet, Jean	890, 1053, 1066
Borger, Fernanda Gabriela	952
Borges Ferreira Neto, Amir	102, 1037
Borghesi, Michela	524
Bornhäll, Anders	155, 174, 181
Borsekova, Kamila	918, 1035
Boschma, Ron	958
Boto, David	560
Bottasso, Anna	696, 1017
Bottero, Paolo	632
Bourceret, Amélie	588
Bourdin, Sebastien	535, 852
Bourdin, Sébastien	63, 114, 814
Bourdin, Sebastien	519, 1169
Bouzouina, Louafi	192
Boyaci, İsrafil	1084
Brandano, Maria Giovanna	591
Brandão, Lorena	944
Brau, Rinaldo	774, 886
Braunerhjelm, Pontus	697
Breglia, Giulio	592, 693, 708
Breglia, Giulio	284
Bregoli, Daniele	113, 222
Breüllé, Marie	66
Briega, Patricia	395
Brink, Corjan	100
Brodeur, Abel	116
Broso, Matteo	207
Brouwer, Aleid	125, 244, 1178
Brun, Sebastian	1195
Brunow, Stephan	691

Bertacchini, Enrico	290	Bruzzi, Carolina	153
Bertazzoni, Paola	386	Bucaite-Vilke, Jurga	299
Bertram, Dominik	634	Bühler, Andreas	778
Berzi, Matteo	151	Buitrago-Mora, Diego	529
Bessa Vilela, Noemia	596	Bulai, Mihai	959
Bettarelli, Luca	656	Buongiorno, Alessandro	865, 897
Bettin, Giulia	1038	Burdett, Ashley	1161
Bettin, Michele	644	Butkus, Mindaugas	336
Beuret, Jean-Eudes	150	Butticè, Vincenzo	968
Bhor, Manisha	54	Bužinskienė, Rita	4
Biagi, Bianca	104, 208	Buzzanca, Luca	403
Biagi, Bianca	639		
C			
Cafieri, Simona	361, 913	Chica, Juan Eduardo	908
Cainelli, Giulio	630, 768	Chica-Mejía, Juan Eduardo	338, 671
Caldarola, Bernardo	340, 351	Chien, Mei-se	1181
Caldeira, Ana	1166, 1170	Chilla, Tobias	634
Calogero, Vieri	603, 656	Chinis, Ioannis	960
Camatti, Nicola	644	Choi, Sangwon	580
Cameron, Michael	64	Choi, Yewon	566
Campaniello, Nadia	1123	Chourdaki, Maria	462
Campolina, Bernardo	679	Christoforou, Asimina	1036
Canale, Laura	888	Christopoulos, Dimitrios	911
Canale, Rosaria Rita	131	Christou, Tryfonas	127, 641, 919, 988
Canello, Jacopo	162	Christou, Tryfonas	133
Cao, Qiang	1135	Chung, I Re	287
Capello, Roberta	247, 248, 275, 295, 447, 801	Ciappei, Simona	447
Capello, Roberta	755	Ciarli, Tommaso	327, 328, 340, 351
Capone, Gianluca	162	Cicerone, Gloria	756, 975
Caporali, Carlo	403, 645, 842	Ciesielski, Michał	1026
Caracci, Elisa	888	Cigognetti, Tomasso	698
Caracciolo, Francesco	1171	Cigognetti, Tommaso	254
Caragliu, Andrea	247	Cirillo, Valeria	294, 303
Carando, Mara	464	Ciro Liscio, Marco	222
Caravaggio, Nicola	754	Cito, Maria Grazia	897, 947
Carfora, Alfonso	172	Ciucci, Laura	653
Caria, Andrea	414	Civardi, Camilla	220

Carlet, Fanny	963	Clincu, Mihaela	928
Carling, Kenneth	320	Clipca, Irina	902, 933, 1138
Carlucci, Fabio	871	Cnossen, Femke	183, 442
Carnis, Laurent	479	Coccossis, Harry	980
Carrara, Aniela	180	Coletti, Ginevra	112
Carrascal-Incera, Andre	916	Collazos-Ortiz, Maria Antonieta	1095
Carrascal-Incera , André	793	Colombo, Massimo	968
Cartone, Alfredo	793	Colombo, Massimo	820
Carvalho, Daniel	1000	Coluccia, Benedetta	273, 365, 1106
Carvalho, Lucas	679	Compagnucci, Fabiano	545, 550
Casadei, Patrizia	628	Connolly, Kevin	49
Casalone, Giorgia	331	Constantelou, Anastasia	357
Casalone, Giorgia	1115	Constantin, Daniela-Luminita	339
Casamassima, Alessia	961	Constantin, Daniela-Luminița	497
Casas, Pablo	641, 919, 988	Conte, Andrea	773, 1130, 1173, 1176
Cascione, Dario	726	Conti, Fabrizio	246
Castaldo, Cecilia	842	Conti, Maurizio	696, 1017
Castellano, Giulio	699	Cori, Guglielmo	786
Castells-Quintana, David	961	Cornejo Costas, Benjamin	951
Castillo-Hidalgo, Kenneth	801	Corradini, Philipp	1019, 1020
Castillo-Hidalgo, Kenneth Fernando	746	Correa, Teresa	416
Castillo-Vergara, Mauricio	1066	Corrêa, João	195, 196
Castro, Gustavo	448	Pedro Saldanha	
Castro, Nicole	180, 309	Correia-da-Silva, João	199
Castro, Sofia B.S.D.	199	Cortés Arbués, Ignasi	633
Cats, Oded	292	Costa, Joana	851
Cattani, Luca	903	Costa, Nuno	996
Cattivelli, Valentina	273, 364, 365	Costa, Rui	851
Cehan, Alexandra	1126	Costa, Valentina	1088
Celbis, Mehmet Guney	192	Costalunga, Nicola	186
Celli, Viviana	992	Cottineau-Mugadza, Clémentine	529
Cellino, Francesco	322	Crescenzi, Riccardo	564, 628, 989, 992, 1014
Cerda, Wladimir	201, 458	Crespi , Francesco	706
Cerisola, Silvia	191, 295	Cristea, Mioara	868
Cerruti, Gianluca	696	Croissant, Yves	253
Chądryński, Jacek	1154	Croissant, Yves	93
Chagas, André	308	Crotti, Daniele	405, 620
		Crowley, Frank	742

Luis S			
Chagas, André	196	Cruz-García,	79
Luis Squarize		Paula	
Chahid, Nassim	557	Cuadrado-Roura,	1072
		Juan R.	
Chapuis, Victor	481	Cucculelli, Marco	763
Chartier, Olivier	806	Cuellar, Sebastián	471
Chartier, Olivier	809	Cui, Mingji	119, 120, 379
Châtelet, Eric	743	Cunha, Lúcio	1170
Chatzi	1116, 1118	Cuni Monserrat,	354, 356
Rodopoulou, Dora		Luis	
Chatzivasileiadis,	5, 87, 210, 633	Curci, Federico	1094
Theodoros			
Chatzivasileiadis,	100	Curtale, Riccardo	396, 604, 701
Theodoros			
Chavarro, Diego	340	Cusimano,	770
		Alessandro	
Chen, Anping	384	Cutolo, Donato	294
Chen, Chengche	315	Cutrini, Eleonora	172, 326
Chen, Ching-Mu	22	Cveticanin,	805
		Predrag	
Cheng, Hsien-hsin	314		
Ç		Çınar, İbrahim	856
Çavlin, Alanur	626	Tuğrul	
Č			
Černelić, Lucijan	1143		
D			
Daams, Michiel	861	Despotovic,	613
		Miroslav	
D'Agostino,	220	Dessì, Diego	1152
Lorena M.			
Dahlke, Johannes	877	Detotto, Claudio	208
Dai, Xieer	218, 522	Dettmann, Eva	728
Dal Molin,	250	Deuster,	604
Martina		Christophe	
Dal Molin,	234	Devčić, Ana	1143
Martina			
Dal Molin ,	545	Di Bianco, Soazig	500
Martina			
Dalborg, Cecilia	685	Di Caro, Paolo	1098
Damari, Yuval	74	Di Cataldo, Marco	476, 477, 564, 786
Damian, Andreia	902, 933	Di Ciommo,	924, 925
Daniela		Floridea	
Damian, Daniela-	959	Di Liberto,	414
Andreia		Adriana	
Damurski, Lukasz	1026	Di	592, 763
		Marcoberardino,	
		Davide	
Dang, Rani	1141	Di	646
		Marcoberardino,	
		Davide	
D'Angeli,	646	Di Pietra, Biagio	888
Mariagrazia			
Daniel, Ana	1012	Diamantis,	140
		Dimitrios	

Daniel, Zoltan	157, 158	Díaz Lanchas, Jorge	1199
Andras		Díaz-Lanchas, Jorge	418
Danielewicz, Justyna	197	Dieguez Soto, Julio	605
Danielis, Romeo	45	Diemer, Andreas	720
Danko, Lukas	454	Dijkstra, Lewis	1151
Das, Jayati	54	Dijkstra, Lewis	604
Daskalopoulou, Irene	508	Dikova, Desislava	551
Daul, Rebecca	239	Dilworth, Emerald	1092
Dauxais, Lu'u	753	Dimou, Michel	1006
Davidsson, Anna	738, 1010	D'Ingiullo, Dario	885
D'Costa, Sabine	474	Dinter, Oliver	875
De Graaff, Thomas	676	Dinter, Oliver-Valentin	860, 935
De Holanda Barboda, Ana Luiza	163	Dircio-Palacios-Macedo, María del Carmen	79
De Menezes Cavalcanti, Ivan	985	Djimrevska, Irena	915
De Oliveira Paula , Fabio	692	Dolores Molero, Gemma	413
De Schutter, Liesbeth	990, 991	Domenteanu, Adrian	752
De Siano, Rita	131	Domingues, Edson	791
Deffner, Alex	627	Dominiak, Joanna	152
Dejardin, Marcus	1066	Donald, Aletheia Amalia	390
Del Bo, Chiara F.	1111, 1113	Donegani, Chiara Paola	160
Delcea, Camelia	339	Doran, Justin	742
Delgado, M.Carmen	283	Doranova, Asel	313
Delis, Agelos	666	Dorati, Chiara	1151
Delitheou, Vasiliki	957	Dottori, Davide	1014
Delitheou, Vassiliki	892	Doukas, Yannis	1188
Dellis, Konstantinos	462	Doval Ruíz, María Isabel	1025
Dellisanti, Roberto	247, 248, 498	Dovč, Alenka	1171
Delponte, Ilaria	1088	Drobniak, Adam	1128
Delugas, Erica	293	Drouot, Bruno	1053
Demetriou, Evie	1171	Dryzaite, Ieva	299
Demidova, Olga	280	Duarte, Rosa	80
Denti, Daria	178	Duarte Pac, Rosa	237, 370
Denti , Daria	714	Duma, Patryk	872
Dentinho, Tomaz	1054	Duman, Zaenhaer	337
Deppisch, Larissa	930	Dunne, Shane	87
Derdelakos, Konstantinos	1124	Dusek, Tamás	1200
Derkenbaeva, Erkinai	402, 722		

Dermine, Sabrina	743
D'Errico, Maria Chiara	914

d

de Blasio, Guido	992

de Graaff, Thomas	898

de Groot, Henri L.F.	898

de la Torre	954

Cuevas, Fernando	

E

Ebere, Chuma	722

Ebrahimi Pour, Havva	924

Echeverría , Nelcy	671

Echeverria Castro, Nelcy	899, 908

Economidou, Claire	127

Efremova, Veronika	915

Egermann, Markus	518

Egyed, Ildikó	625

Eisenstein, Bernd	936

Ekinci , Özge	1013

F

Fafaliyoy, Maria	1119

Faggian, Alessandra	250, 639, 756

Faggian, Alessandra	132

Fameli, Kyriaki	924, 925

Maria	

Fannin, Matthew	102

Fantechi, Federico	614, 770

Fao, Elena	806

Faria, Weslem	98

Farkas, Richárd	46

Fasone, Vincenzo	887

Fassone, Riccardo	186

Faure, Emmanuelle	814

Favilli, Filippo	1032

Fazio, Giorgio	917

Felsenstein, Daniel	218

Fernandes, Caio Cezar	324

Duvernet, Claire	205

Džunić , Marija	702

de Santana, José Ricardo	90

de Santana	50, 90

Ribeiro, Luiz	

Carlos	

del Valle, Ikerne	795

do Valle, Sinara	838

El Kouhen, Meriem	621

Elburz, Zeynep	1013, 1023

Elert, Niklas	155, 181, 217

Elhorst, Paul	94, 461

Emili, Silvia	297

Enab, Lamia	53, 55

Encalada, Luis	997

Erdoğan, Zeynep	833

Ermini, Barbara	610, 652

Etzo, Ivan	653

Finardi, Ugo	799

Fiorillo, Fabio	610

Fiorino, Nadia	727

Fischer, Manfred	889

M	

Flaszyńska, Ewa	40

Fleischer, Aliza	88

Flintz, Joschka	14

Florez, Liliana	573, 574

Flynn, Tom	413

Foglia, Carolina	746, 755

Fonseca, Madalena	718

Forman, Balázs	430, 445

György	

Fosalau, Cristian-Manuel	860

Foşalău, Cristian-Manuel	935

Foşalău, Manuel	875, 933

Foshag, Kathrin	901

Fernandez- Vazquez, Esteban	916	Fotopoulos,	343
Ferrara, Antonella	1017	Georgios	
		Fotopoulou,	34
		Myrsini	
Ferrari, Claudio	1088	Foufri, Dimitra	1188
Ferreira, Ricardo	222	FOUTAKIS,	1149
		DIMITRIS	
Ferreira de	1170	Franco, Pedro	996, 1075
Figueiredo, Rui			
Ferreira Dias,	267	Franco, Susana	909
Marta			
Ferreira e Silva,	306	Frangiamore,	507
André Luiz		Francesco	
Ferreira Gabriel,	50	Franklin, Rachel	417
Luciano			
Ferretti, Claudia	24	Fraschetti, Luca	638
Fialkoff, Chaim	26	Fratesi, Ugo	1098, 1105, 1176
Ficco, Giorgio	888	Freddo, Daniela	944
Fidas, Penelope	839	Fregolent, Laura	663
Demetra			
Fierro, Pedro	409, 416	Frenkel, Amnon	61
Figari, Francesco	322	Freudenberg,	745
		Charlotte	
Figueiredo,	1139	Frigerio, Jessica	1171
Eduarda			
Figueiredo ,	1170	Fritsch, Michael	694, 749
Albano			
Figus, Gioele	49	Fronimaki,	1110, 1118
		Evgenia	
Filatova, Tatiana	87, 633	Fuchs, Michaela	691
FILHO, JOSE	531	Fulman, Nir	901
Fili, Tommaso	153	Füner, Lena	820
Filippi, Maryline	617, 969	Fusco, Elisa	1098
Filippopoulos,	343	Fusco, Giulio	971, 972
Nikolaos			

G

Gabriel, Stuart	1022	Gjestland, Arnstein	72
Gaebler, Stefanie	14	Gkerats, Reveka	1140
Gaki, Eleni	1036, 1052	Gnayim, Noaman	1007
Gal, Zoltan	366	Góes, Carlos	225
Gál, Zoltán	46, 406, 625	Gökçe, Pınar	831
Galiano Bastarrica, Luis	419	Gökmeydan Söyler,	833, 1082
		Melek	
Galvis, Luis	101	Golic, Dejana	807
Gambina, Debora	682	Gomes da Silva,	838
		Cleomar	
GAMTKITSULASHVILI,	1160	GOMEZ, Laurent	1006
Tea			
Ganau, Roberto	768	Gómez	1199
		Bengoechea,	
		Gonzalo	
Ganau, Roberto	630	Gómez-Tello,	945
		Alicia	
Gandullia, Luca	148	Goncharov, Ruslan	748
Garau, Alessio	724	Gonzalez	470
		Cuatianquis,	
		Crhistian Joel	

Garcia, Renato	324	Gonzalez Rubio, Janeth	167, 1112
García Alegre, María	1171	González Rubio, Janeth	170
García Martín, Fernando Miguel	804, 835	González-López, Manuel	1144
Garcia Pérez de Lema, Domingo	1066	González-Val, Rafael	58
García Riazuelo, Álvaro	586	Görmar, Franziska	518
García Rodríguez, Abián	919, 988	Gosling, Sam	116
Garcia-Lopez, Miquel-Angel	1208	Gossiaux, Eva	864
García-Rodríguez, Abián	641	Goulbourne, Rushaine	102
Gardelli, Alessandro	896, 922, 963	Grammatikogiannis, Elias	859
Gareis, Philipp	205	Grandi, Silvia	530
Gassab, Maher	1162	Grashof, Nils	659, 877
Gaunard-Anderson, Marie-France	744	Grazzini, Lisa	301
Gawande, Kishore	378	Greavu-Şerban, Valerică	1138
Gayán-Navarro, Carlos	41	Grebe, Florian	433
Georgakoulis, Agthanasios	258	Gręda, Łukasz	664
Georgiadis, Thomas	813, 836, 934, 1127	Grimes, Arthur	84
Gerolimetto, Margherita	912	Grinblat, Yulia	901
Ghali, Mohamed	500	Guachamín, Marcela	1150
Ghencea, Flavia Lucia	596	Guarascio, Dario	294, 303
Gheorghiu, Alexandra	852, 868, 1138	Guependo Ortiz, Illich Giancarlo	167
Ghinami, Francesca	993	Guerini, Massimiliano	820
Ghisetti, Claudia	220	Guerreschi, Asia	112, 790
Giaccone, Loïc	711, 712	Gugliandolo, Alessandra	888, 907
Giannakis, Elias	1197	Gulevičiūtė, Gintarė	924
Giannakopoulos, Dionysios	177	Gulevičiūtė, Gintarė	925
Giannoni, Sauveur	601	Gülümser, Aliye Ahu	387
Giaoutzi, Maria	859	Güneş Yerlikaya, Elif Bengi	282
Gibert, Romain	814	Günther, Elias	634
Gider, Denise	732	Guo, Wen-Chung	20
Giles, Laura	200	Guo, Yutong	995
Giljum, Stefan	990	Gurbuzer, Leman Yonca	915
Giovannetti, Giorgia	301	Gusnanto, Arief, S.	1167
Giovanni Cerulli, Giovanni	1130	Gustavsson, Tomas	738
Giua, Mara	992	Gutiérrez, Pablo	283
Giua, Mara	707	Güven, Aydan Ege	284
Giua, Mara	706	GUYON, Tristan	882
Giurato, Martina	149	Güzel, Kadriye Kardelen	588

H

Haartsen, Tialda	442
Haddad, Eduardo	21, 265, 1139
Haddad, Eduardo	195
Amaral	
Haindlmaier,	642, 883
Gudrun	
Halleck Vega, Sol	291, 680, 722
Maria	
Halleck-Vega, Sol	586
Maria	
Halmai, Nora	576
Maria	
Hamaniuk ,	1085
Oleksii	
Hamdouch,	860
Abdelillah	
Hammadi, Tizaoui	1030
Hanisch, Markus	518
Hanitzsch, Anna	144
Magdalena	
Hardy, Sally	417
Harmáček,	512
Jaromír	
Hartal, Shaul	412
Hartmann, Jörg	930
Hassaine-Bau,	948
Leïly	
Hatipoğlu, İsra	831
Hauser, Christoph	613, 623
Havusela, Maija	881
He, Ruoshui	310, 337
Heffner, Krystian	345
Hegerty, Scott	551
Heidelk, Tillmann	988
Heinicke, Julius	1153
Helsper, Ellen	409, 416

I

Iacob, Laura	596
Iacobucci, Donato	113, 589
Iacono, Rita	638
Ialenti, Giorgio	754
Iammarino,	415, 417, 1152
Simona	
Iammarino,	628
Simona	
Iannone, Giulia	487, 731

Henrekson, Ebba	320
Hermann, Arturo	495
Hermet, Francois	583
Hernández-Trillo,	79
Fausto	
Herrmann,	1059, 1085
Benedikt	
Hertweck,	1008
Friederike	
Hewings,	80
Geoffrey J.D.	
Hichri, Salma	1162
Hidalgo, Alberto	1094
Higashi, Ayaka	618
Hildibrandsdottir,	986
Anna Hildur	
Hippe, Stefan	634
Hjaltadottir,	758
Rannveig Edda	
Hodžić, Sabina	313
Holl, Adelheid	474
Holstein, Philippe	519
Holstein, Philippe	535
Hoole, Charlotte	105
Hopkins, Jonathan	562, 806
Hottenrott, Hanna	820
Hou, Shihang	1008
Hsu, Ming-Wei	870
Huang, Weizhao	1117
Hulenyi, Martin	254
Hultman, Martin	1010
Hurtado	804
Hernández,	
Miguel	
Ierapetritis,	813, 836, 934
Dimitrios	
Igari, András	136
Ikegami, Maki	271
Ikouta Mazza,	1110, 1116
Patricia	
Incaltarau,	1087
Cristian	
Inkeröinen, Oula	881
Intini, Mario	754, 865, 897, 920, 922, 963, 971, 972, 1033,

Iatu, Corneliu	860	Iodice, Silvia	1088
Iațu, Corneliu	935, 959, 1122	Iommi, Sabrina	396, 701
Ibanescu, Bogdan	352	Ion, Irina E.	24
Constantin			497
Ibanescu, Bogdan-	852, 868	Ioramashvili,	548
Constantin		Carolyn	
Ibănescu, Bogdan-	959	Ishikawa,	578
Constantin		Yoshifumi	
Ibănescu, Bogdan-	1122	Itani, Naoto	262
Constantin			
Ichimiya, Chika	581	Ivaldi, Enrico	153
Iddawela, Yohan	59	Ivanova, Olga	87, 100, 210, 633
J			
Jaccoud, Florencia	328	Johansson,	955
		Eleanor	
Jacobs-Crisioni,	151	Johansson, Sara	984
Chris			
Jain, Yashi	42, 472	John, René	518
Jakubowski,	655	Jolly, Suyash	373
Andrzej			
Janc, Krzysztof	410, 929	Jonas, Lukas	1008
Jandt, Marcus	642, 883	Jones, Jonathan	917
Jankiewicz,	107	Jong, Dylan	606, 608
Mateusz			
Jantsch, Antje	783	Jong, Dylan	161
Jarne, Alain	974	Jonsson, Jan	720
Järv, Olle	607, 725, 881	Jordan, Declan	742
Javakhishvili-	658	Juknevičienė, Vita	336
larsen, Nino			
Jean-Pierre,	519, 535	Junge, Lisa	424
Philippe			
Jensen, Britta	1008	Juravle, Georgiana	902, 933
Jeremic, Veljko	313	Justinia	500
		Hanitravelo,	
Jia, Mofei	51	Giffona	
		JUSTINIA	490
Jiménez, Sofía	80	HANITRAVELO,	
		Giffona	
K		Jyme Jr, Frederico	679
Kaaber, Erna	1004		
		KITAMURA,	1101
Kadlec, Vojtěch	983	Yukisada	
Kadochnikova,	421	Kitsos, Tasos	160
Ekaterina		Klar, Christian	732
Kadrefi, Athanasia	1116, 1118		
		Kleftodimos,	588
Kaiser, Alexander	47	Georgios	
		Kleinschmidt,	14
Kakderi, Christina	776, 1137	Viktoria	
Kalamaras, Akis	381	Knies, Gundi	562, 563
		Kociuba,	802, 893
Kalantzi, Eleni	776	Dagmara	
Kalfadellis, Paul	35	Koeppen, Luise	562, 806, 1108
Kalimeris,	232	Kokkali, Ifigeneia	34, 509
		Kokosis, Nikolaos	34

Panagiotis		Kollmorgen, Raj	518
Kallioras, Dimitris	318, 329, 330, 1080	Komornicki, Tomasz	655, 872
Kallioras, Dimitris	177, 342	Konczos	576, 609, 1200
Kalyviotis, Nikolaos	585, 793	Szombathelyi, Márta	
Kam, Aygün	1155	Kontoleon, Andreas	337
Kambanou, Marianna Lena	1058	Kooistra, Marije	244
Kammoun, Sana	1162	Kopczewska, Katarzyna	29, 33
Kan, Iddo	88	Kopka, Alexander	877
Kang, Soojeong	485, 566	Koriugina, Uliana	849, 854
Kanteler, Despoina	177, 533, 1021, 1132	Koronaïos, Panagiotis	232
Kapitsinis, Nikos	1190	Korony, Samuel	918
Kaplanis, Ioannis	143	Korzhenevych, Artem	518
Kapoor, Aditya	413	Kostarakos, Ilias	723
Kapustka, Karolina	454	Koster, Sierdjan	96, 183, 488
Kara, Zsuzsanna	609	Kot, Monika	29
Karadimitropoulou, Aikaterini	78	Kotila, Jemina	858
Karagiannis, Ioannis	1021	Kotrikla, Anna Maria	924, 925
Karagiannis, Yiannis	1132	Koufodontis, Nikolaos-Iason	1052
Karahasan, Burhan Can	221	Koundouri, Phoebe	462
Karakitsiou, Athanasia	508	Kouroupi, Nansy	140
Karkanis, Dimitrios	588	Kourtit, Karima	511, 647, 860, 875, 935, 1023, 1087
Karpinska, Lilia	1182	Koutsopoulou, Antonia	980
Kasabali, Konstadina	1193	Kovács, Tibor	1202, 1203
Katsinis, Anastasis Avgerinos	335	Kovaitë, Kristina	924
Katuriç, Ivana	1143	Kowalski, Arkadiusz	551
Kawasaki, Rachael Kei	843	Kowalski, Mateusz	765
Kebir, Leïla	711, 712	Kozma, Dorottya Edina	540, 542
Kedjar, Malia	890	Krause, Melanie	68, 144
Kekezi, Orsa	720	Krehl, Angelika	433
Kema, Steven	824	Krisztin, Tamas	807
Kenney, Martin	294	Kruse, Martin	251
Kerner, Amichai	26	Kubenkova, Dana	876
Kesina, Michaela	94	Kucsera, Gergely Tamás	609
Khanna, Madhu	791	Kuhn, Lena	783
Khoirunurrofik,	1167	Kulchitsky, Yuri	854

Khoirunurrofik	
Kiefer, Christoph	790
Kierzkowska, Anna	1026
Kietlińska, Bogna	512
Kifayatullah, Ali	1167
Kim, Brian	580
Kim, Brian Hong	77
Sok	
Kim, DongHwui	566
Kim, Euijune	287
Kim, Hong	391
Sok(Brian)	
Kim, Kwansoo	485, 566, 672
Kim, Soyoon	77, 580

L

La Notte, Luca	888
Labrousse, Geoffroy	590
Ladu, Maria Gabriela	727
Lafuente, Esteban	670
Lagarias, Apostolos	509
Lagodna, Iryna	785
Lahat, Lihi	484
Lalanne, Aurélie	103
Lalanne, Marie	919, 988
Lamonica, Valentina	816
Lanati, Mauro	301
Laner, Peter	1032
Lang, Thilo	518
Langarita, Raquel	585
Lappi, Emma	697
Lark, Olga	174
Larrahondo, Cristhian	200
Latinopoulos, Dionysis	395
Lautenbach, Sven	901
Lawson, Daniel	1092
Lazarou, Nicholas	635, 641, 919, 988
Lzauskiene, Aiste	299
Le Gallo, Julie	66
Lecca, Patrizio	418
Lee, Gayeon	440
Lee, Hyejin	759
Lee, Juhee	612
Lee, Kyungjae	579

Kuld, Lukas	1037
Kulhánová, Ivana	650
Kuliš, Zvonimir	281, 304
Kuliš, Zvonimir	243
Kull, Michael	809
Kumar Malviya, Ashwani	413
Künstler, Michał	884
Květoň, Viktor	650, 983
Kwak, Minjeong	672
Kyaw, Aye Mon	391
Kyriakopoulou, Deliora, Maria	1080

Lewczuk, Anna	715
Lewin, Paul	1040
Li, Deyu	951, 958, 1069
Li, George Yunxiong	415
Li, Luning	781
Li, Ziling	522
Liagouras, George	357
Licio, Vania	344, 346, 1073
Liemich, Leonie	518
Lieszkowsky, József Pál	483
Lim, Jaewon	511
Lima, M. Carmen	940, 966
Lin, Shih-Yang	22
Lin, Yan-shu	135
Liptak, Katalin	526
Lisbinski, Fernanda	309, 311
Lisbinski, Fernanda	180
Liscio, Marco	147, 149
Ciro	
Liu, Tingting	1069
Livert, Felipe	1105
Lodi, Chiara	19, 124
Lohwasser, Johannes	56, 1195
Londoño Bedoya, David Andrés	1095
Lopes, Julio Cesar	944, 976
Lopes Afonso, Damares	91, 98
Lopetegui, Itsaso	795
Lopez, Rafael	878
Lopez Alvarez, Jorge	419

Lee, Neil	59	Lopez Tamayo, Jordi	224
Lee, Seongwoo	579	López Taravilla, María del Carmen	605
Leggerini, Chiara	234, 250	López-Álvarez, Jorge Manuel	966
Lehnert, Patrick	778	Lopez-Bazo, Enrique	674
Lehoux, Alexandre	759	Los, Bart	115, 954
Leibert, Tim	1086	Louro, Ana	996, 997, 1075
Lembcke, Alexander	506	Luca, Davide	645
Lembcke, Alexander	759	Lueck, Ole	657
Lengyel, Balazs	921	Luiza Neves de Holanda Barbosa, Ana	81
Lenzi, Camilla	275, 447, 494, 746, 755	Luo, Wensen	468
Leone, Stefania	654	Lupi, Giacomo	552
Leporatti, Lucia	148	Luporini, Annalisa	301
Leva, Maria Chiara	413	Lurie, Yotam	16
Levaggi, Rosella	148	Lustigová, Michala	650
Levin, Mikael	427	Lux, Gabor	1031
Levints, Maria	233	Luz, Luciana	375
Levy, Rachel	832	Luzio, Eduardo	308
Lewandowska, Małgorzata	551		
M			
Macias Acosta, Rubén	848	Med Hsin, Bennour	366
Mačiulienė, Monika	924, 925	Medeiros, Victor	374
Madhekar, Mihir Nikhil	839	Mehouachi, Chahira	882
Magalhaes, Aline	791	Mehoumoud Issop, Zoulfikar	93, 253
Mager, Lee	989	Meister-Broekema, Peter	626, 1196
Maggi, Elena	648	Melachroinos, Konstantinos	695
Maggio, Giuseppe	245, 252	Meleddu, Marta	104, 639
Magistri, Emma	644	Melguizo, Celia	211
Magkou, Matina	1141	Mellander, Charlotta	286
Magrini, Stefano	912	Menezes, Tatiane	163
Maha, Liviu-George	1087	Merino-Madrid, Elena	605
Maier, Gunther	188	Merkaj, Elvina	610
Majcherek, Dawid	551	Mert Dalli, Cem	878
Majorek-Gdula, Agnieszka	397, 438	Metaxas, Theodore	140
Makkonen,	407	Meyer, Daniel	943

Teemu		Micalizzi,	364
Makovský, Lukáš	404	Alessandra	
Malekzadeh,	607, 881	Micek, Grzegorz	454
Milad			
Maltese, Ila	648	Michaelides,	133
		Panayotis	
Mancinelli,	1028	Michalaki,	957
Susanna		Evanthia	
Manetos,	1080	Michalska,	1142
Panayiotis		Weronika	
Manini Tiwari,	510	Michelangeli,	76, 331
Mira		Alessandra	
Manini Tiwari,	512	Michelangeli,	132
Mira		Alessandra	
Manoukas,	698, 719	Michelangeli ,	1115
Dimitrios		Alessandra	
Manousiadis,	1034	Micocci,	707
Charalampos		Francesca	
Manzaneque	605	Miguellez, Ernest	1039
Lizano,			
Montserrat			
Marcen, Miriam	514	Mihaescu, Oana	174, 217
Marconi, Mattia	701	Mihaila , Teodora	352
		Georgiana	
Marcu, Ana-Maria	752	Miki, Adriana	851
Margalejo,	237	Milionis, Petros	128, 461
Cristina			
Marin, Giovanni	124	Miller, David	806, 809
Marinello,	887	Mimis, Angelos	686
Vincenzo			
Mariotti, Ilaria	254	Mintal, Jozef	1035
		Michal	
Mariotti, Ilaria	235	Minutoli, Fabio	907
Mariš, Martin	1027	Miranda Buetas,	370
		Sara	
Marjanović, Ivana	702	Miranti, Ragdad	272, 274
		Cani	
Maronero, Cecilia	290	Mirata, Murat	1058
Maroulis,	232	Mitchell, Sara	1037
Georgios			
Marovelli, Brigida	616	Mizutani,	15
		Fumitoshi	
Marques da Costa,	1075	Mockevičienė,	206
Eduarda		Greta	
Marques da Costa,	997, 1075	Mocquetlet, Léo	832
Nuno			
Marques Da	996, 997	Modic, Dolores	758
Costa, Eduarda			
Marques Santos,	773, 1176	Modica, Marco	284, 591, 592, 693
Anabela			
Marr, Sabine	518	Mohamed Hsin,	1185
		Bennour	
Marrocu,	164, 176, 240	Molica, Francesco	1169, 1173, 1206
Emanuela			
Martens, Katrin	518	Molnar, Tamas	157
Martin-Barroso,	1057	Moloni, Pelagia	980
David			

Martín-Barroso, David	1056	Moltoni, Massimo	967
Martinelli, Arianna	446	Monastiriotis, Vassilis	827, 1160
Martínez Fernández, Teresa	354, 356	Monda, Viktoria	158
Martinho, Vítor João Pereira Domingues	8, 9	Monfort, Philippe	988
Martini, Barbara	234	Monokrousou, Klio	1099
Martino, Giulia	806, 809	Montefiori, Marcello	148
Martín-Román, Ángel	528	Montero Kuscevic, Casto Martin	51
Martín-Román, Javier	528	Montresor, Sandro	437, 993
Martins Rodal, Breixo	1025	Monturano, Gianluca	920
Maruniak, Eugenia	655	Mood, Carina	720
Marzucchi, Alberto	435, 437, 524	Morales, Marina	514
Mascarini, Suelene	324	Morea, Valeria	429
Mashhoodi, Bardia	722	Moreira, Gustavo	227
Mastrangioli, Alessia	727	Moreno, Rosina	1039
Matano, Alessia	674	Moretti, Michele	616
Matranga, Marcello	322	Morgado, Paulo	1075
Matsaganis, Manos	322, 688	Mori, Naoyuki	382
Matsiuk, Nadiia	630, 768	Moroni, Agnese	1019, 1020
Matsubara, Kiyoshi	571	Morris, Jonathan	424
MATSUYAMA, Takeshi	1101	Moya-Gómez, Borja	788
Mattiozzi, Silvia	652	Muntele, Ionel	117, 1133
Mattiozzi, Silvia	1038	Murgui-García, María José	945
Mátyás, Szabolcs	1202	Musacchia, Gabriele	252
Mavri, Maria	1110, 1116, 1118, 1119	Mustra, Vinko	243
Maymoni, Liran	501	Muštra, Vinko	281, 304
Mayor, Matías	560	Muthama, Wencelaus	46
Mazé, Armelle	1016	Musyoka	
Mazur, Marcin	872	Myftiu, Jurgena	386, 405, 1115
Mazzola, Fabio	614, 656, 682, 770	Myhr, Anette	427
McCann, Philip	606, 858, 861, 870	Mykhnenko, Vlad	1086
McGill, Mary	1035	Mylonakis, Christos	723
Męczyński,	973	Myshko, Alena	550

Michał

N

Nádas, Nikoletta	108
Nadou, Fabien	814
Nakavachara, Voraprapa	1063
Nanda, Anupam	1180
Narang, Gagan	147
Nardelli, Vincenzo	489
Nardi, Cecilia	390
Natale, Fabrizio	604
Natale, Francesco	1106
Natale, Francesco	365
Nayer, Dana	1022
Ndayikeje, Guy- Michel	590
Nechifor, Cătălin	497
Neuhuber, Tatjana	602
Neumann, Uwe	288
Newbold, Bruce	99
Newman, Jack	105
Nguyen, Toan	1198
Niavis, Spyros	318, 329, 330, 533
Niavis, Spyros	980
Nicolini, Rosella	1060

O

Obschonka, Martin	116
Ochoa Rego, Jesús	804
Ochojski, Artur	777, 1128
Odabaş, Ahmet Salih	1102
O'Driscoll, Conor	401, 505
Oiry, Annaig	150
O'Leary, Daragh	1081
Olechnicka, Agnieszka	734
Oliveira, Ana Hermeto	679
Oliveira, Tássia	713
Oliveira Martins, Joaquim	1077
Ome, Alejandro	200

Ö

Niebuhr, Annekatriin	460
Niederhametner, Nina	239
Nieto Tolosa, Matías	804
Nifo, Annamaria	639
Nijkamp, Peter	647, 1023
Nijkmap, Peter	511
Nikolaidou, Konstantinia	533, 1132
Ninivaggi, Federico	172, 326
Nissim, Ruggero	216
Njekwa Ryberg, Peter	249
Nobre, Francisco	160
Noir , Maëlle	1035
Nomaler, Önder	327
Nosaka, Taiyo	269
Nunes, Ana Paula	679
Nunes, André	267
Nunes, Paulo	900
Nunes Almeida, Alexandre	81
Núñez, Jacobo	1057
Núñez-Serrano, Juan Andrés	1056, 1057
Omizzolo, Andrea	1019, 1020, 1032
Oo, Aung Tun	124
Oostindie, Henk	236
Orio, Andrea	654
Orozco Tellez, Yurany Alejandra	170
Ortega-Argiles, Raquel	709, 975
Osland, Liv	760
Osroosh, Arian	1164
Osztér, Vilmos	721
Ouasbaa Azzouani, Ghizlen	441
Oyarzo, Mauricio	471
Ozkan , Nazmiye	1117

Östh, John 647, 702, 889

Öztürk, Nur 822
Kardelen

O

ottoz, elisabetta 1015

P

Pacheco, Tainá 737, 751

Pachova, Nevelina 927, 981

Paci, Raffaele 164, 176, 240

Padovan, Dario 689

Páger, Balázs 406

Pagiavla, Georgia 1124, 1125

Pai, Jen-Te 203

Paidi, Vijay 320

Palma, Alessandro 845

Palma, Alessandro 842

Palma, Alessandro 388, 888

Lorenzo

Pandit, Shraddha 796

Pange, Jenny 149

Panina, Ekaterina 394

Panori, Anastasia 224, 607, 688

Pantazis, 1021

Panagiotis

Panzer, Elisa 191, 275, 295

Papadas, Christos 1197

Papadioti, Foteini- 536

Antonia

Papandreou, 1110

Dimitris

Papastamatiou, 892

Georgios

Papatheochari, 980

Theodora

Papavasileiou, 761

Christina

Parady, 382

Giancarlos

Paredes, Dusan 201, 471

Paris, Thomas 882

Park, Gainbi 417

Park, In Kwon 439, 440

Park, Jonghoon 579

Park, Seonghyeon 568

Parmentier, Alexis 219

Pascariu, Gabriela 1138

Carmen

Pascariu, 1133

Gabriela-Carmen

Pastor Lamberto, 835

Perugini, 589

Francesco

Perugini, 147

Francesco

Peters, Jan 460

Cornelius

Petit, Fabien 328

Petrakos, George 318, 330, 341, 342

Petric, Mirko 805

Petrou, Kleoniki 318

Natalia

Pfeifer, Harald 778

Phan, Duy-Anh 1198

Piazza, Santino 372

Piccolo, Alessia 449

Piedra Peña, Juan 66, 1060

A.

Pieri, Fabio 589

Pierucci, Eleonora 706

Pilati, Alessia 1032

Pilch, Aleksandra 1026

Pilo, Piergiorgio 446

Pinate, Adriana 885

Pinna, Anna 344, 1073

Maria

Pinto, Pablo 378

Pinto, Santiago 378

Pizzoli, Edoardo 495, 624

Pizzuto, Pietro 656

Plevri, Argyro 1099

Pliatsika, Foteini 533

Ploszaj, Adam 734

Podimatas, 892

Eleftherios

Poggi, Ambra 362

Politi, Vasiliki - 451

Alexandra

Polko, Adam 777, 1128, 1129

Pollo, Nicola 792, 816

Polozun, 748, 850

Aleksandr

Polychronidou, 1193

Persefoni

Polydoropoulou, 924, 925

Rocío	
Patrucco, Pier Paolo	290
Patsouri, Anastasia	692
Patuelli, Roberto	963
Paul, Hannah	634
Paulino Da Costa, Ana Paula	952
Pavanini, Tiziano	89, 153
Pavlidou, Sofia	1021, 1132
Pedrini, Giulio	887, 903
Pedroza Filho , Manoel Xavier	556
Peiró-palomino, Jesús	85
Pelaez-Sanchez, Sara	395
Pelitli, Volkan	1171
Pellegrini Masini, Giuseppe	631, 689, 970
Pels, Eric	676
Peltier, Rémi	800
Peng, Shin-Kun	22
Pereira Borges, Jose Victor De Jesus	1042
Pérez, Javier	569
Pérez, Manuel	458
Perez Valbuena, Gerson Javier	200
Perobelli, Fernando	98
Perrot, Arsène	63, 550, 782
Persio, Riccardo	727, 894
Persyn, Damiaan	600
Perucca, Giovanni	248, 494, 498, 801

Q

Quaglione, Davide	885

R

Radin, Ioannis	143
Ragazzi, Elena	728, 792, 799
Rahm, Laura	512
Rahman, Azizur	924, 925
Rainisio, Nicola	888

Amalia	
Pontarollo, Nicola	146, 148, 298
Poon, Jessie	417
Poorthuis, Ate	725
Popescu, Alina	497
Porrini, Donatella	1106
Portnov, Boris	67
Portnov, Boris A.	37
Pot, Felix	488, 1174
Potter, Jeff	116
Pozzer, Gianfranco	663
Prashar, Neha	775
Prates Romero, João	50
Prelorentzos, Arsenios Georgios	133
Premchand, Yashvant	898
Prigent, Gwenaelle	1141
Prodromidis, Prodromos	1204
Prosperi, Paolo	557, 588
Provatakis, Nikitas	880
Przygodzki, Zbigniew	840
Psatha, Eva	1079
Psycharis, Yannis	836
Psycharis, Yannis	813
Puente-Ajovin, Miguel	62
Pulina, Manuela	208
Pylak, Korneliusz	890, 895

Rodriguez-Pose, Andres	477
Rodríguez-Pose, Andrés	409, 1151
Rodríguez-Pose, Andrés	918
Roelands, Merel	210
Roesel, Felix	14

Raj, Papia	353	Rogatka,	190, 765
Rajcsányi-Molnár,	576	Krzysztof	
Mónika		Rognini, Davide	418, 1199
Ramirez Folch,	512	Rohatgi, Pratima	231
Carmen		Roig, José Luis	1060
Randriamasimanjato,	93, 253	Rojíková, Darina	1046, 1051, 1134
Philippe		Rolle, Giuliano	845
Rastvortseva,	394, 421	Marco Federico	
Svetlana		Roman, Angela	1187
Rasvanis, Evangelos	1136	Romanillos,	788
		Gustavo	
Raton, Gwenaëlle	640	Romão, João	168, 169
Razzak Janjua,	542	Romero	958
Laeëq		Goyeneche, Oscar	
Re , Cristina	162	Ronaël, Mehmet	831
Refisch, Martin	930	Rony, Sidharth	351
		Rösel, Felix	1085
Reggiani, Aura	702	Rosik, Piotr	872
Rehak, Stefan	921	Ross, Amanda	102
Reimeris, Ramojus	154	Rossi, Federica	89, 235, 254, 401
Reisecker, Vanessa	934	Rossi, Federica	698
Reitsma, Tineke	442	Maria	
Reksten, Connie	910	Rossi, Lorenzo	476
Renner, Anna-	602	Rossi, Marta	531
Theresa		Rota, Francesca	1015
Rentfrow, Jason	116	Rota, Francesca	792
Renzullo, Elena	477	Silvia	
Resce, Giuliano	754	Rotaris, Lucia	45
Resmini, Laura	603, 656	Roth, Duncan	460
		Rouwendal,	96
Revila Diez, Javier	657	Harm-Jan	
Reynard, Emmanuel	711, 712	Rovolis, Antonios	232, 911
Ribeiro, Rafael	374	Rovolis, Antonis	451
		Rowe, Francisco	409
Ribeiro, Vinicius	538, 556	Royuela, Vicente	298
Ricciulli , Diana	569	Royuela, Vicente	224
Richiardi, Matteo	1161	Royuela Mora,	947
Riganti, Patrizia	1207	Vicente	
Rigo, Davide	1014	Ruan,	917
Rijnks, Richard	244, 1081	Chongshuying	
		Rubiconto,	680, 703
Riom, Capucine	404	Francesca	
Rizzo, Michel	301	Rubiera	432
		Morollón,	
Rizzo, Ugo	524, 552	Fernando	
		Rubin, Ofir	88
Robbiano, Simone	1017	Rudholm, Niklas	155, 320
Roberto Azzoni,	81		
Carlos		Rueda, Andres	908
Rocco, Giuseppe	1028	Rueda, Andrés	338, 671
Rocha, Hainnan	556		
Souza		Ruiz Palomo,	549
Rödding, Florian	205	Daniel	
		Rumpel, Petr	373
Rodionova, Yuliya	878		

Rodríguez Lopez, 432
Guillermo
Rodriguez Pose, 1173
Andres

S

Sá, Carla 376

Saad, Rami 67
Saadé, Youssef 1016
Sabah, Cihan 387, 831
Mert
Sabatino, Lorien 207

Sacadura, Filipa 1171

Sacchi, Agnese 19

Saidi Phiri, Victor 878
Saili, Abdul 500
Rahman
Sakellaris, George 1171
Sakurai, Mizuki 555

Salotti, Simone 919, 988

Salvini, Niccolò 489

Salzo, Angela 530

Samantzis, 329
Charalampos
Sánchez Cantero, 1171
Inma
Sanchis-Llopis, 945
María Teresa
Sancho, Ferran 940
Sandberg, Krister 427

Sandu, Alexandra 117
Sanna, Ester Rita 104
Lucia
Sanzo-Navarro, 41, 62
Marcos
Santarremigia, Dr. 413
Francisco Enrique
Santiago-Iglesias, 788
Enrique
Santinha, Gonçalo 267
Santini, Erica 220

Santolini, 610, 652
Raffaella
Santos, Anabela 1130, 1173, 1206

Santos, Eric 118
Santos, 375

Rusu, Valentina 1187
Diana

Shomali, Khalid 547
W. A.
Silva, Pedro Luís 376
Silva, Rodrigo 309, 311
Silva, Susana 1170

Silva Spolador, 306
Humberto
Francisco
Silveira Neto, 118, 225, 713
Raul
Silveira Paiva, 10
Laura
Simeone, Enza 362, 961
Simonen, Jaakko 858

Sirtori, Emanuela 293
Sivaramakrishnan, 65, 231
Lakshmi
Skaržauskienė, 924, 925
Aelita
Skayannis, 869
Pantoleon
Skayannis, 381
Pantoleon
Skirbekk, Vegard 36

Slater, Yehuda 88

Smadja-vigier, 640
Camille
Snunu, Iyad 1007
Söderholm, 725
Michaela
Soetanto, Danny 684
Sofer, Michael 1007

Sofianou, Evina 874

Sommerfeld, Ann- 694, 749
Marie
Somoza Medina, 493, 496
Marta
Sonedda, Daniela 724
Sonzogno, Giulia 706, 707, 708
Valeria
Sorgner, Alina 209, 246, 691

Sorichetta, 982
Alessandro
Sospiro, Paolo 149, 222
Sospiro, Paolo 147

Fransuellen		Sotiriou,	318, 341, 342
Santos, Gervasio	1000	Alexandra	
Santos, Gervásio	531	Sotiropoulou,	1021
Santos, Lívio	679	Rafaella-Eleni	
Miguel		Sousa Filho, José	531
Santos , Anabela	1169	Firmino	
Santos Peñalver,	605	Souza, Daniel	820
Jesús Fernando		Sowa, Jessica	484
Saraiva, Jorge	199	Soyyigit, Semanur	856
Sarasa Fernandez,	237	Spagnolo, Nicola	1201
Cristina			
Sarasa Fernández,	370	Spence, Nigel	695
Cristina			
Saratsis, Yiannis	342	Spierenburg,	292
		Lucas	
Sarkar, Anwasha	353	Spiganti,	912
		Alessandro	
Sartono, Bagus	1167	Spurek, Miroslav	921
Sasaki, Kuniaki	555	Squarize Chagas,	306
		André Luis	
Sasso, Simone	820, 968	Staiano, Jacopo	220
Sauerová,	962	Stamatopoulos,	793
Kristýna		Giorgos	
Sávai, Marianna	266	Stanković, Jelena	702
		J.	
Savona, Maria	548	Stanojević ,	702
		Marina	
Scacchi, Matteo	648	Starczewski,	190
		Tomasz	
Schaefer , Kerstin	1069	Stathaki, Chrysi	436
J.			
SCHAFFAR,	1006	Stavropoulos,	761
Alexandra		Spyridon	
Schaffer, Axel	47, 1195	Steele, Jessica	982
Schilling,	1166, 1170	Stenström, Eliel	320
Courtney			
Schneider,	602	Stephan, Lisa	608
Antonia		Sanna	
Schoenberg, Alina	836, 934	Stern, Aviv	88
Schurr, Ulrich	732	Stoleriu, Oana	352, 1126
		Mihaela	
Scorcu, Antonello	52	Stonawski, Marcin	36, 1097
Eugenio			
Scorrano,	45	Storm, Servaas	633
Mariangela			
Scott, James W.	428	Storti, Daniela	638, 654
Scotti, Francesco	645, 897	Stortini, Fabiana	616
Scuderi, Raffaele	887	Stoychev, Kosyo	121
Secomandi,	1059	Strid, Sofia	1010
Riccardo			
Sedlacek, Sabine	188	Stuetzer, Michael	116
Seeler, Sabrina	936	Stürmer, Elisabeth	943
Seerar	217	Stut, Martijn	604
Westerberg, Hans			
Seidel, André	68	Styk, Michal	918
Sella, Lisa	728, 792, 816,	Succurro,	903

	1015	Marianna	
Seminara, Maria	631, 970	Sulis, Giovanni	724, 886
Rosaria			
Seo, Ilwon	612	Sundström, Aksel	878
Serafini, Luca	164, 176	Sung, Yuhyun	439
Serra, Mauricio	324	Sutton, Lorenzo	1171
Serrano-Gómez, Ángela	966	Suzuki, Masatomo	263
Severinsen, Karl-Gunnar	72, 73		
Sforza, Marco	706	Svenberg, Sebastian	1010
Shamsudin, Luqman	1111	Sykala, Jenny	1036
Sharony, Chen	484	Szabó, Pál	136
Shi, Qian	468	Szafranek-Stefaniuk, Edyta	399
		Szakálné Kanó, Izabella	302
Shibusawa, Hiroyuki	119, 120	Szakálné Kanó, Izabella	214
SHIBUSAWA, Hiroyuki	379	Szagos, Judit	670
Shin, Namchul	424		
		Szejgiec-Kolenda, Barbara	655
Shin, Yuncheol	485	Szerb, László	670
Shirayanagi, Hiroaki	1101	Szuskiewicz, Anita	559
Š			
Šebová, Miriam	942	Šipikal, Miroslav	261
Šimundić, Blanka	243, 281, 304, 1139		
Ś			
Śmiech, Sławomir	1182		
T			
Tagliabue, Alessia	648	Topaloglou, Eleftherios	533
		Topaloglou, Lefteris	1021, 1132
Tagliari, Valentina	788	Topaloglou, Lefteris	177
Taheri, Mozhdeh	684	Topaloglou, Nikolas	127
		Toro, Sergio	416
Tait, Rebekah	49	Torre, André	969
		Tortosa-Ausina, Emili	79
Takami, Kiyoshi	382	Tortosa-Ausina, Emli	85
TAKEHI, Iori	379	Tóth, Veronika	942
Takita, Toshiaki	1083	Tourlis, Nikolaos	177
		Toursoglou, Danai	1036
Tambussi, Margherita	207		
Tan, Chang	94	Tramontano, Jacopo	294, 303
Tanaka, Kazunari	269, 581, 611, 618	Tranos, Emmanouil	160, 781, 1092
Tanaka, Tomoyasu	456	Tregubova, Inessa	475
TANAKA, Kazunari	262		
Taniguchi, Ayako	555		
Taormina, Viola	739		

Tapia, Carlos	665	Triantafyllidou, Anna	462
Tappeiner, Gottfried	623	Trinchetti, Tommaso	616
Tavares, Jéssica	267	Trincone, Barbara	871
Tei, Alessio	1088	Tsampra, Maria	1140
Teillet, Emma	743	Tsay, Wen-Jen	22
Tejedor, Fabio	636, 1177	Tsekeris, Theodore	256, 350
Teke Lloyd, Armağan	901	Tselios, Vassilis	536
Temudo, Madalena	376	Tsiapa, Maria	332
Tenca, Francesca	968	Tsiapa, Maria	330
Tequame, Miron	234	Tsigdinos, Stefanos	256, 977
Terzidis, Nikolaos	241	Tsiotas, Dimitrios	1197
Thanos, Sotirios	1179, 1180	Tsomidis, George	127
Thoidou, Elisavet	1149	Tubadji, Annie	43, 44
Thomopoulos, Nikolas	977	Tudor, Monica	300
Thorén, Christopher Ali	1010	Mihaela	
Thorsen, Inge	72, 73, 75	Tuncer, Arda	833
THOURAYA, GARRAOUI	1030	Turała, Maciej	197
Tidu, Alberto	750, 772	Turati, Riccardo	1060
Tillema, Taede	1174	Turchak, Diana	280
Tiwari, Mira	516, 517	Türk, Umut	647, 702, 889, 901
Manini		Turkgulu, Burak	785, 839
Tkach, Kateryna	132, 331, 524	Turkina, Ekaterina	114
Toger, Marina	702, 889, 901	Tuysuz, Suat	856
Toleikiene, Rita	336	Twardzik, Małgorzata	534, 559
Tomic	805	Tziolas, Ioanna	461
Koludrovic, Inga			
Tonin, Stefania	429, 663		
U			
Ubøe, Jan	72, 73, 75	Ursache, Ioana-Maria	902, 933
Umbach, Gaby	512, 516	Urso, Giulia	545, 632
Uranishi, Shuji	15	Usai, Stefano	653, 750, 772, 993, 1152
Ü			
Üstün, Çiğdem	833		
V			
Vaillant, Julia	390	Vera-Cabello, María	62
Väisänen, Tuomas	607, 725, 881	Veran Casanova, Adriana	927, 981
Vallette D'Osia, Jeanne	799	Verspagen, Bart	327, 703
Van Der Borg, Jan	729	Vici, Laura	52
Van Geenhuizen, Marina	683, 684	Vida, György	214, 302
Van Wissen, Leo	1097, 1158	Vidoli, Francesco	19

Vaňová, Anna 1051, 1134
Varthalitis, Petros 723

Vas, Zsófia 214
Vasilyev, Alexey 455
Vásquez, Diego 283
Vassiliou, 357

Evangelos

Vasvári, Mária 1202, 1203

Vavrušová, Mária 1051, 1134

Vayannou, 1171

Phoebe

Vecchione, 699

Gaetano

Vedder, Stefanie 943

Veeckman, 924

Carina

Velazquez, 1056, 1057

Francisco J.

Velazquez 848

Villalpando,

Maritza Areli

Veneri, Paolo 298, 861

Veneri , Paolo 178

Venhorst, Viktor 606, 699, 824,
1081

Ventura, Raffaele 510, 512, 517

V

van Cranenburgh, 292

Sander

van Driel, Joppe 1177

van Leeuwen, 722, 990, 991,

Eveline 1177, 1178

W

Walasik, Artur 399

Walaszek, 431

Marzena

Walde, Janette 623

Wallet, Frédéric 832

Wang, Baifang 71

Wang, Jiayi 285

Wang, Tongjing 969

Wang, Yihan 114, 814

Warnke, Philine 745

Weerasekara, 1040

Nadeeka

Wei, Honghong 310

Wei, Zhiwu 59

Wensing, Joana 991

Westlund, Hans 918

Weterings, Anet 96

X

Xiao, Chao 468

Vieira, Flavio 10

Viera Bardón, 1171

Cristina

Vilcu , Roxana 806

Viñé, Lluís 385, 389

Viñuela, Ana 1175

Vitagliano, Michele 1033

Vitálišová, Katarina 1051

Vitálišová, Katarína 1134

Viviani, Francesco 24

Vladimirova, 587

Pavlinka

Vo, Thi Chinh 1002

Voepel, Hal 982

Von Friedrichs, 685

Yvonne

Vorgias, 1171

Konstantinos

Vougogiannopoulou, 1171

Konstantina (Nadia)

Vuri, Daniela 845

Výrost, Tomáš 523

Výrostová, Eva 523, 837

van Leeuwen , 680

Eveline S.

van Oort, Frank 622

von Brunn, 518

Alexandra

Wiechmann, 1086

Thorsten

Wilson, James R. 909

Wiśniewski, Rafał 655, 872

Witlox, Frank 922

Wixe, Sofia 286

Wögerer, Michael 807

Wolf, Amanda 1200

Wolff, Manuel 1086

Wolny-Kucińska, 392

Ada

Wong, Pui Hang 1095

Wood, Jonathan 1180

Wu, Minzhi 85

Wyrwich, Michael 749

Wyrwich, Michael 694

Xu, Yishuang 1063

Y

Yahyaoui,	1035
Ekaterina	
Yamanoglu,	756
Rahmi Can	
Ye, Xianjia	115
Ye, Xinmeng	384
Yokoi, Takahisa	595
YPsycharis,	934
Yannis	

Z

Zabarina,	715
Kateryna	
Zafeiriou, Ersi	869
(Varsami)	
Zamyatina,	748
Nadezhda	
Zanola, Roberto	52
Zaragoza, Maria	389
Zarehparast	413
Malekzadeh,	
Mehdi	
Zarimi, Eleni	357
Zecca, Emy	112
Zenka, Jan	1164

Zhang, Cui	71

Ž

Žak-	197
Skwierczyńska,	
Małgorzata	

Z

zu Ermgassen,	98
Erasmus	

Yuan, Pei-yu	709

Yuan, Pei-Yu	975

Yucesoy, Eda	1102

Yuval, Fany	1205

Yuval, Fany	16

Zhang, Jianhua	688

Zhang, Lin	666

Zhang, Peifeng	141

Zhu, Mirah	781

Ziogas, Thanasis	688

Zipf, Alexander	901

Zomer, Brigit	806

Zsibók, Zsuzsanna	625

Zubiria-Ferriols,	354, 356

Edurne	

Zysk, Elżbieta	1191, 1192