RSAI-BIS Annual Meeting: Stirling 2022

Conference Programme

Contents

Welcome!

Dear Participant,

The Committee of the Regional Science Association International: British and Irish Section warmly welcomes you to Stirling We hope you enjoy your stay and find the conference interesting and useful.

We are very grateful to conference organiser Maria Abreu, who is also the Chair of the Section, local organisers Graham Clarke and Andy Newing as well as the events and conferences staff at Stirling Court Hotel.

The RSAI-BIS welcomes new members. Your conference fee includes annual membership of the Section, with all of the benefits that membership brings. Please get involved with the Section. If you have any suggestions or ideas on how to improve the Section, our annual conference of developing the Section for all members we would love to hear these.

Also included in this booklet is a form to submit your name for election to the Section's committee. The committee is appointed at the AGM which takes place on the 5 th of July at 17:00. We welcome applications.

The minutes of the 2019 AGM are also included in this booklet.

Please feel free to discuss any RSAI-BIS or conference matter with our Chair Maria Abreu, Membership Secretary Tasos Kitsos, Treasurer Stuart McIntyre or myself.

Richard Rijnks **Secretary**

Message from the RSAI-BIS Chair

Dear conference participants,

I would like to warmly welcome you to our 48th Annual Conference in Stirling, Scotland, our first in-person conference in three years! I hope you enjoy the sessions and find the conference and social events interesting and enjoyable.

This past two years have been very difficult, and I would like to take this opportunity to express my gratitude to the RSAI-BIS committee, and in particular to our current and previous officers Justin Doran, Stuart McIntyre, Karyn Morrissey, Tasos Kitsos and Richard Rijnks, who have kept our association going in the face of significant work and personal challenges during the lockdown periods. Tasos and Richard replaced Karyn and Justin as, respectively, Social Secretary and Secretary this year, and I am grateful to them for taking on this role, and to Karyn and Justin for their excellent work over a number of years.

Also, a big thank you to Stirling conference organisers Graham Clarke and Andy Newing, who worked hard to postpone our annual conference not once, but twice, and expertly rolled over our bookings to this year. Graham and Andy have prepared an excellent programme of academic sessions and social events, and I very much look forward to taking part, and seeing everyone again after such a long time.

Given the various Covid-related difficulties last year, and after consultation with members, we decided to focus on two online activities in 2021: a set of five sessions at the Regions in Recovery E-Festival in June 2021, and an online Early Career Colloquium in July 2021. I am pleased to say that we had a huge amount of interest in the Colloquium, and after a careful review of abstracts, we selected 34 excellent papers for participation. I was extremely impressed with the quality of the papers, and enthusiasm shown by our early career participants, but also very touched that many of our long-standing members attended the sessions in high numbers and gave our participants very helpful advice and encouragement. We awarded three prizes at the Colloquium, a best paper prize to Daria Denti, and best presentation prizes to Julien Picard and Joseph Zhao. Our three prize winners are attending the Stirling conference, and we will raise a glass to them at our annual conference dinner. We are currently planning this year's version of the Colloquium, which will take place online in the autumn (more details to come soon).

I look forward to the conference, and to seeing you all soon!

Maria Abreu

Chair, RSAI-BIS

Our Association

Regional Science is an expanding field devoted to the development of theory and method in urban and regional analysis and policy. It has a conscious aim of cutting across the traditional disciplinary approaches to these issues. The British and Irish Section of the Regional Science Association International was founded in 1968. The membership is drawn, in the main, from academics, consultants and scientists in local and national government, who share an interest in spatial issues. They come from a range of disciplines including economics, geography and planning.

Our Main Activities

- Organisation of an annual conference, workshops and seminars;
- Award of an annual prize, the Moss Madden Memorial Medal;
- Award of Early Career / Doctoral Prize for Best Presentation at the Annual Conference;
- Maintain bilateral relations with other sections of the RSAI.

The Section is run by a committee of thirteen elected members. The committee may co-opt a further three members. The Chairman and the committee are elected at the Annual General Meeting which is held during the Annual Conference each year. The conduct of the business of the Section is governed by the Constitution.

We are continually seeking new elected members of our committee. If you are interested in becoming an elected member then please contact our Chairman (Maria Abreu), Membership Secretary (Tasos Kitsos) Treasurer (Stuart McIntyre) and/or Secretary (Richard Rijnks) in the first instance.

General Information

Social events

Tuesday Pub Quiz, 7pm – 11pm   at 'The Birds and the Bees', Easter Cornton Road, Stirling, FK9 5PB. Please make your own way there for 7pm or meet in the foyer of Stirling Court hotel at 6.30pm to walk there as a group. [If walking independently then don't follow the directions on Google Maps, there is a shorter cut through from the hotel – ask at the registration desk or hotel reception for details]. The legendary RSAI-BIS pub quiz is free and includes buffet food and a free drink.

Wednesday Loch Katrine outing, 2.30pm – 8.30pm   Coaches will depart promptly at 2.30pm from outside the Stirling Court Hotel. Enjoy a relaxing afternoon with a one hour boat cruise on Loch Katrine (tea and coffee will be provided on board), a guided whiskey tasting session and buffet food on the scenic shore of Loch Katrine. In addition to the whiskey tasting a cash bar will be available. Coaches will arrive back in Stirling at approximately 8.30pm with a drop off at the Stirling Court Hotel and in Stirling City Centre.

Thursday conference dinner, 7pm – 11pm   Our conference dinner will be held at the Stirling Highland Hotel in Stirling City Centre. Please make your own way to the venue for an arrival drinks reception at 7pm, with dinner from 7.30pm.

Regional Science
Association International

British and Irish Section

Annual General Meeting

Tuesday 5th 2022

Hermitage Iona, Stirling Court Hotel

Agenda

1. Minutes of 2021 Virtual Meeting
2. Chair's Report
3. Treasurers Report
4. Spatial Economic Analysis Journal Report
5. Election of Committee, 2022/23
6. Election of Chair
7. AOB

Date for next meeting: TBC

Nominations for the Committee will close at 4pm on Tuesday 5th July

Minutes of the 2021 AGM

Virtual Meeting

Thursday March 4th 2021, 1-2pm

Present: MA, JD, TK, AN, KH, AS, RF, KM, GC, FC, VM, RR

MA welcomes everyone.

1. Stirling conference (postponed to 2022)

AN gives an update. Notes that there was a discussion with a small sub-group of the committee and they made a decision to postpone the conference.

AN notes hotel is happy to postpone to 2022. The move is to the week beginning Monday 4th of July. AN attempting to move the social events. This is currently ongoing and it is hard to contact the individuals in the smaller venues.

MA notes that the decision to move was due to venues not being sure they would be open and that there was uncertainty that people would attend.

The hotel was where there was 5k deposit paid. They are happy to move it and so far there has been no indication of additional costs.

JD to update the website and them MA to send e-mail with the information to the new venue.

Call for papers to go out in January

2. Online event in July

MA notes the key question is what to replace it with. MA notes there has been a lot of questions from early career members and retired members.

MA and JD had discussed hosting a PhD workshop. Also a membership scheme. These could be wrapped up together.

EM said we need to have an online presence. Two ideas – a keynote type event for an hour to an hour and a half. The second was an online event for PhD students. He also suggests a pub quiz (also discussed by JD and MA).

TK notes that we could organise some special sessions with two or three organising a session. These can be over a period of two weeks. Start with a group meeting/welcome. Then have the special sessions. MA notes having set topics.

KM notes that she has experience with virtual conferences and notes that you can hire a company to do this. She notes 40 hours of a company's time 2,500 – makes it worth while and they make it look more professional. KM notes it has to be a maximum of two hours per day – fully day events people don't have the attention span. KM notes that we should have a plan for online events in case 2022 doesn't happen.

KM gave an example of a PhD workshop she thought would work.

RF suggests that maybe the best approach for mentorship might not be the most senior people. She suggests mid-career researchers might be a better course and might be more useful to early career researchers. It needs to reflect what the actual academic landscape looks like presently re publication, job market etc. Suggests people in their mid to late 50s. MA suggests coming up with a list of people and possible some non-academics.

KH asks can we put together a committee of PhD students who could help put some stuff together on this.

MA notes that it would be senior people giving feedback and also chatting over coffee.

RR notes that one of the things we missed was the early career awards. Which could be a draw. MA and JD has discussed whether to put them together. We also didn't do the prizes. We need to follow up on Moss Madden medal.

MA suggests another meeting in two weeks time where we can discuss definitive ideas and release the call.

3. Other activities:

- SEA virtual special issue for International Women's Day (8th March)

MA notes that this was DJ idea. Papers in SEA which had a female author and these have been put together in a virtual special issue which will be promoted on Monday.

- Joint event with RSA in June (e-mail from Sally Hardy)

ET is doing a special session for this. KM suggests an SEA keynote might be the best approach if we go down that route. VM notes we have a long history with RSA and thinks that it is a very good opportunity. Thinks that it is a great way to stay visible. Notes that it is not just RSA but that it is many groups – that we would be equals.

RF likes the option of having presenters pay a little and be open to the public. Might attract an audience of people who would not normally attend but which would be able to attend when it is free.

MA suggests three or four special sessions. Deadline for abstracts is the 17th of March but MA suggests that this might be extended.

MA to e-mail Sally to ask when she needs to special sessions by.

TK notes that there is very limited speakers in early career speakers. Suggests that it could be someone early career stage. MA suggests that we think about a high profile speaker who will attract a lot of interest in the journal. RF suggests that someone in mobility might be an interesting avenue to work with (suggestion of Rafael Pereira - https://www.geog.ox.ac.uk/graduate/research/rpereira.html). Kevin Credit – just went to Maynooth from the US - https://scholar.google.com/citations?user=8J9DEjIAAAAJ&hl=en

MA notes that there are a lot of Keynote so it is hard to find the SEA Keynote.

MA suggests keeping it separate.

Regional studies event – TK put down for one.

- Mentorship scheme

Talked about above. Need to have reflection on this.

- Geoff Hewings offer to underwrite 10 membership fees for early career members

Agreement to work with this. Need to think through.

4. AGM, elections to committee, and officers

We didn't have an AGM last year because we didn't have any members. We should definitely have one this year. Do we do it in July or have one ASAP. And linked to that we had decided to roll over the officers and committee members. MA suggests we have the AGM in the summer and elections for the committee then and replace two of the officers this year and the remaining two next year. Suggests not to change Treasurer this year due to access of passing over banks.

VM thinks that it is an excuse to send e-mails and can have a set of events. Call for AGM reasonably close (possibly May). AGM plus pub quiz to attract people.

5. AOB

JD raised issue of Summer School which DB had asked raised. This was discussed.

MA notes the World Congress has asked us to organise a special session for the conference. RF notes that we should focus on our own events.

Date for next meeting: TBC

Regional Science

Association International

British and Irish Section

Members are encouraged to stand for election to the Committee.

If you would like to be considered for membership of the committee for 2019/20 please complete the details below and submit it to the Secretary, Justin Doran, by Tuesday July 16th at 4 p.m.

Name: ....

Institutional Affiliation: ....

Address: ....

Signature: ....

Each committee member must be proposed and seconded by a member of the Section.

Proposer Name: ....

Proposer Signature: ....

Second Proposer Name: ....

Second Proposer Signature: ....

Schedule

5 July				
Room	**Blairlogie**	**Glendevon**	**Lomond**	**Mull**
8:00 - 9:30	**Registration (throughout the conference)**			
9:30 - 11:00	1A Inequalities in subjective wellbeing 1	1B Migration, refugees, and integration 1	1C Regional disparities in health and well-being outcomes 1	1D Regional economic development and innovation 1
11:00 - 11:30	**Tea and coffee**			
11:30 - 13:00	2A Spatial analysis of productivity and labour markets 1	2B	2C Spatial analysis of marine economies and renewable energy	2D
13:00 - 14:00	**Lunch**			
14:00 - 15:00	**SEA Lecture in *Hermitage Iona***			
15:00 - 15:30	**Tea and Coffee**			
15:30 - 17:00	3A Spatial analysis of productivity and labour markets 2	3B SS1: Regional science insights from smart metering data	3C	3D SS3: Barriers to digital innovation 1
17:00 - 18:00	**AGM in *Hermitage Iona***			
18:00 - 18:15	**REGION: Presentation**			
19:00 -	**Annual Pub Quiz**			

6 July				
Room	**Blairlogie**	**Glendevon**	**Lomond**	**Mull**
8:00 - 9:30	**Registration (throughout the conference)**			
9:30 - 11:00	4A Inequalities in subjective wellbeing 2	4B Migration, refugees, and integration 2	4C Regional disparities in health and well-being outcomes 2	4D Regional economic development and innovation 2
11:00 - 11:30	**Tea and coffee**			
11:30 - 13:00	5A Spatial analysis of productivity and labour markets 3	5B Spatial analysis of voting behaviour and political outcomes 1	5C SS2: New developments in regional resilience 1	5D SS3: Barriers to digital innovation 2
13:00 - 14:00	**Lunch**			
14:30 - 22:00	**Loch Katrine excursion:** *Coaches depart at 14.30 from Stirling Court Hotel*			

7 July				
Room	**Blairlogie**	**Glendevon**	**Lomond**	**Mull**
9:30 - 11:00	6A Spatial analysis of productivity and labour markets 4	6B Transportation networks and their regional economic impact	6C Regional science in business (retail and geodemographics)	6D Urban futures (and sustainable cities)
11:00 - 11:30	**Tea and coffee**			
11:30 - 13:00	7A Spatial analysis of productivity and labour markets 5	7B	7C Regional disparities in health and well-being outcomes 3	7D Regional economic development and innovation 3
13:00 - 14:00	**Lunch**			
14:00 - 15:30	8A	8B Spatial analysis of voting behaviour and political outcomes 2	8C SS2: New developments in regional resilience 2	8D
17:00 - 18:00	**Committee meeting**			
19:00 -	**Conference Dinner: Stirling Highland Hotel**			

Presentations

Presenting Author	Title	Room
1A Inequalities in subjective well-being 1		
Anita Schiller	Tiebout sorting and Environmental Injustice	1A
Thanasis Ziogas	A spatial econometrics approach to modelling individuals' well-being: the case of Helsinki	1A
1B Migration, refugees, and integration 1		
Joseph Hongsheng Zhao	Shiminhua: The Urbanization of Rural-Urban Migrants in Different Tier of Chinese Cities: A Case Study of The Greater Bay Area of China	1B
John B. Parr	Regional Government and Regional Science	1B
1C Regional disparities in health and well-being outcomes 1		
Kevin Credit	Spatial Patterns in Social Service Provision: Evidence from Disaggregated Public Data in New York City	1C
Bart Roelofs	Structural mobility patterns and COVID-19 incidence: A regional analysis of the second wave in the Netherlands	1C
Maria Plotnikova	Out-of work benefit claims patterns and the sub-regional impact of the Covid-19 pandemic	1C
1D Regional economic development and innovation 1		
Elias Giannakis	Regional Economic Resilience, Productivity Growth and Industrial Interconnectedness	1D
Matthew Lyons	Understanding the '2020 Shock' in the UK's Automotive Sector	1D
Maria Abreu	A capability-approach perspective on Levelling Up	1D

Presenting Author	Title	Room
2A Spatial analysis of productivity and labour markets 1		
Annie Tubadji	Cultural Entropy, Innovation and Growth	2A
John Moffat	The effect of co-location on business R&D in Great Britain	2A
David Emanuel Andersson	Agglomeration, Diversity and Tradition: An Analysis of Fractionalized Web of Science Publications in European NUTS2 Regions	2A
2C Spatial analysis of marine economies and renewable energy		
Fernando Barreiro-Pereira	Energy consumption and carbon dioxide emissions. social benefits of domestic renewable energy consumption	2C
Davide Luca	Organised crime and the geography of wind and solar farms in Italy	2C

Presenting Author	Title	Room
3A Spatial analysis of productivity and labour markets 2		
Aitor Irastorza-Fadrique	Industrial Robots and Worker Reallocation in Great Britain	3A
Sandy Dall'erba	Instrumental Variable Network Difference-in-Differences (IV-NDID) estimator: model and application	3A
Yichen Wang	An Individual and Spatial analysis of Industry 4.0 Job Automation in China.	3A
3B SS1: Regional science insights from smart metering data		
Jacob van Alwon	Inferring dwelling occupancy patterns from high temporal resolution water metering data	3B
Stuart Ellaway	Using small area water metering data to estimate seasonal population change	3B
James Hulse	Evaluation of Data Granularity Within the Non Household Water Market	3B
3D SS3: Barriers to digital innovation 1		
Aleid Brouwer	Barriers to Digitization in the Leisure Industry in Drenthe: Before and During the Pandemic	3D
Richard Rijnks	Regional Variations in Automation Job Risk and Labour Market Thickness to Agricultural Employment	3D

Presenting Author	Title	Room
4A Inequalities in subjective well-being 2		
Franziska Bay	The role of job match quality in explaining job satisfaction disparities between self-employed and wage-employed workers	4A
Alvertos Konstantinis	Spatio-Temporal dimensions of precarious employment and well-being in the UK	4A
4B Migration, refugees, and integration 2		
Josh O'Driscoll	Factors driving shrinkage across Irish Electoral Divisions (1986-2016)	4B
Sarmistha Pal	Public Transport and Car Crime – An Analysis of São Paulo Metropolitan Region Using Event Studies Approach	4B
4C Regional disparities in health and well-being outcomes 2		
Philip Carthy	Early-life environment and adult well-being in Ireland: Reexamining the impact of the 1947 Health Reforms	4C
Anne Devlin	Why are disability rates in Northern Ireland so high?	4C
Graham Clarke	Geographies of mental health: new insights from big data	4C
4D Regional economic development and innovation 2		
Kevin Connolly	Policymakers' Perspectives on Producing Regional Input Output Tables: Insights from the UK's Four Nations	4D
Peter Batey	Demo-economic modelling: new developments in measuring the economic impact of demographic change	4D

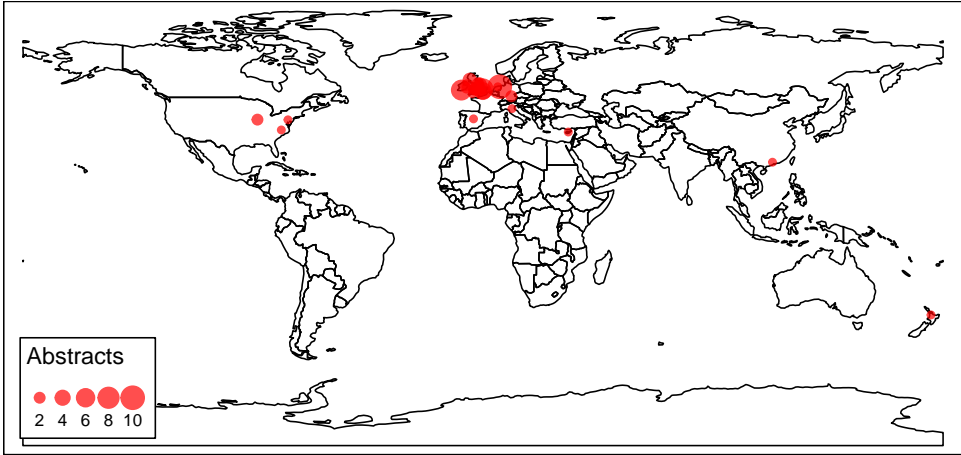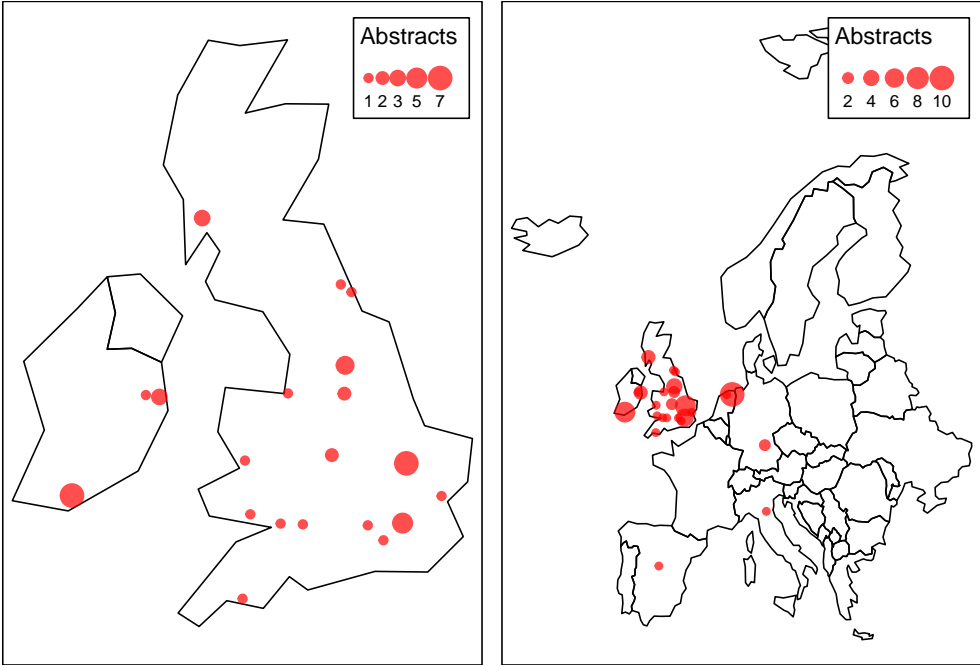| Presenting Author	Title	Room
5A Spatial analysis of productivity and labour markets 3		
Leaza McSorley	Rethinking Regional Productivity: Bridging the equity-efficiency trade-off	5A
Anne Devlin	Urban Disadvantage: Does it matter where you live?	5A
Eduardo Ibarra-Olivo	Foreign direct investment and informal labour markets in emerging economies: Evidence of Mexican municipalities	5A
5B Spatial analysis of voting behaviour and political outcomes 1		
Beatriz Jambrina Canseco	The stories we tell ourselves: Local newspaper reporting and support for the radical right	5B
Luise Koeppen	Social Capital and long-term economic and demographic decline (GER)	5B
Davide Luca	Progressive Cities: Urban-rural polarisation of social values and economic development around the world	5B
5C SS2: New developments in regional resilience 1		
Clara Peiret-Garcia	Cities in shape: the effect of urban morphology on sustainable mobility accessibility to urban amenities	5C
Hadi Arbabi	Regional economic resilience, trophic coherence, and ecological analogies	5C
Anne Otto	Relatedness, complexity and structural change in German regions: a social sequence analysis approach	5C
5D SS3: Barriers to digital innovation 2		
Franziska Bay	Data skills and data maturity of SMEs and how to increase them – A North Sea Region case study	5D
Emmanouil Tranos	Digital economy in the UK: an evolutionary story	5D

Presenting Author	Title	Room
6A Spatial analysis of productivity and labour markets 4		
Rachael Sanderson	Left Behind and Left Out: Seeing (Dis)connections in a Spatially Focused Migration Network	6A
Sabine D'Costa	Why is the urban wage premium larger for women?	6A
Michaela Fuchs	Is there a double gap? Urban-rural differences in the gender gap in commuting	6A
6B Transportation networks and their regional economic impact		
Sandy Dall'erba	A model of the U.S. food system: What are the determinants of the state vulnerabilities to production shocks and supply chain disruptions?	6B
Conor O'Driscoll	The Determinants of Commute Mode Choice in Ireland	6B
Aisling Reynolds-Feighan	Comparative analysis of airline network overlap in the domestic US and European markets	6B
6C Regional science in business (retail and geodemographics)		
Daragh O'Leary	Incorporating Related and Unrelated Variety into Firm Dynamic Interrelationships in Irish Regions	6C
Seçil Hülya Danakol	New Firm Formation in Turkey: The Effect of Export Activities of Large Domestic and Foreign Incumbent Firms	6C
6D Urban futures (and sustainable cities)		
Nick Clifton	Regional innovation systems as a comparative & evolutionary concept: elaborating the systemic knoweledge-network continuum	6D
John Paul Clifford	The Role of Infrastructure in driving City Growth	6D
Aine Gorman	Willingness to pay for safe cycling infrastructure for children commuting to school in the Cork urban area	6D

Presenting Author	Title	Room
7A Spatial analysis of productivity and labour markets 5		
Zhiwu Wei	From Potential to Reality: Regional Enablers and Inhibitors of Telework Uptake across European Cities and Regions	7A
Femke Cnossen	Learning the Right Skill: The Returns to Social, Technical and Basic Skills for Middle-Educated Graduates	7A
7C Regional disparities in health and well-being outcomes 3		
Andy Newing	Geographical accessibility of COVID-19 vaccination sites in England	7C
Julien Picard	To(o) (m)eat or not to(o) (m)eat? When cultural habits and environmental concerns are in conflict in influencing English diets.	7C
Loes Bouman	Understanding democratic and environmental innovations using spatial microsimulations and Agent-based models	7C
7D Regional economic development and innovation 3		
Roberto Patuelli	Policy (De)centralization and the Spatial Interaction Model: Theory and Illustrative Examples	7D
Frank Crowley	Firm research, development and commercialisation and triple helix interactions in the offshore marine energy sector	7D

Presenting Author	Title	Room
8B Spatial analysis of voting behaviour and political outcomes 2		
Daria Denti	The Councilwoman's Tale. Countering Intimate Partner Homicides by electing women in local councils.	8B
Davide Luca	The long shadow of local decline: birthplace economic conditions, political attitudes, and long-term individual economic outcomes in the UK	8B
Özge Öner	Segregation, tipping and the role of amenities, crime, and housing	8B
8C SS2: New developments in regional resilience 2		
Jacques Poot	Local labour markets and the initial impact of the Global Financial Crisis and the Covid-19 pandemic on social security uptake in New Zealand	8C
Grant Allan	Resilience of the Scottish economy to COVID-19 related changes in tourism demand	8C
Don Webber	Regional resilience, path dependency, and local context	8C

What to expect

Abstract wordcloud

The BIS annual meeting has always welcomed papers on a wide variety of topics. To visualise this scope, the figure posted below shows the main topics addressed in this year's conference, based on the content of the abstracts.

Geographical spread of delegates

Book of abstracts

	RSAI-BIS Stirling 2022: Book of Abstracts
Name	Abreu, Maria
Email	ma405@cam.ac.uk
Affiliation	University of Cambridge
With	Flavio Comim Calvin Jones
Title	A capability-approach perspective on Levelling Up

Abstract	We discuss the Levelling Up agenda from a capability-approach perspective. The capability approach is an analytical framework for thinking about human development, with the aim of moving beyond narrower policy frameworks based on resources (GDP, income, consumption) or desire-fulfilment (utility, subjective wellbeing, happiness). It highlights the role of real opportunities (capabilities) in allowing individuals to achieve the things that they consider valuable in their lives, the value of the agency underlying the freedom to choose whether and how to realise these opportunities, and the importance of the policymaking process in driving human development outcomes. In practical terms, our analysis highlights the importance of focusing on ultimate objectives rather than instrumental ones, and the role of place-based policy in facilitating the process. We also address the difficult question of how to identify valuable capabilities, how to involve the local community in the development process, and the challenges of targeting funding and evaluating outcomes.

Name	Allan, Grant
Email	grant.j.allan@strath.ac.uk
Affiliation	Department of Economics, University of Strathclyde
With	Gioele Figus, Kevin Connolly, Aditya Maurya
Title	Resilience of the Scottish economy to COVID-19 related changes in tourism demand

Abstract   The Covid-19 pandemic has led to unprecedented disruption for the tourism industry. Economic consequences are not confined to the tourism-facing sectors, as changes in tourism spending propagate through the whole economy. However, the scale of the system-wide consequences of reduced tourism spending can be hard to quantify. Although the Scottish economy was severely impacted by the reduction in tourism activities during the pandemic, especially in the early stages, a number of behavioural and policy responses have contributed to limit what could have been otherwise a disaster. In this paper, we calculate the direct reductions in spending across different tourism categories in Scotland including domestic, inbound and international tourism during 2021 using detailed information about tourism spending by origin, including domestic and international, type, day trips and over-night, month and local area of destination. We then use a combination of input-output (IO) and computable general equilibrium (CGE) models to quantify their system-wide economic impacts. We measure impacts related to both inherent resilience, that is the ability of a system to respond to economic shocks under normal circumstances, and adaptive resilience, that is the ability of an economic system to put in place responses that require extra effort. These can be either behavioural, such as changes in spending preferences, or policy driven such as the job retention scheme policy that protected the income of workers in at risk-categories. By comparing results from a series of scenarios we illustrate how different types of resilience have incrementally contributed to mitigate the economic impact of changes in tourism demand due to COVID-19 in Scotland and discuss policy implications of different recovery strategies.

	RSAI-BIS Stirling 2022: Book of Abstracts
Name	Andersson, David Emanuel
Email	davidemanuelandersson@cm.nsysu.edu.tw
Affiliation	National Sun Yat-sen University
With	Thai Ha Le
Title	Agglomeration, Diversity and Tradition: An Analysis of Fractionalized Web of Science Publications in European NUTS2 Regions

Abstract	The aggregate science output of a region depends on several spatial factors. A generalized least squares function with random effects and robust errors was estimated to gauge the impact of such factors in almost all European NUTS2 regions from 2001 to 2013. Models were estimated for the EU as a whole, and for three of its constituent parts with somewhat similar levels of socio-economic development: the northwest, the south, and the east. The dependent variable in the estimated functions was the fractionalized number of publications indexed in the Web of Science. The key explanatory variables were the number of researchers in higher education institutions, the number of researchers in high-tech industry, the year the oldest regional university was founded, the Herfindahl-Hirschman Index of disciplinary diversity, and multimodal interregional accessibility to all other NUTS2 regions in the European Union. Factors that were controlled for included the share of college-educated, the mean household income, a measure of industrial diversification, and the level of interpersonal trust at the NUTS1 level. The estimated model yields five key insights. First, the key input for science production is the number of researchers in higher education institutions. The estimated elasticity is in the neighborhood of one in all parts of Europe. Second, the number of researchers in high-tech firms does not affect research output at the regional level. Third, diversification of scientific disciplines has a substantial and significant impact on research output in Europe as a whole, with an even stronger estimated effect in the south (Greece, Italy, Spain and Portugal). Fourth, regions with older universities have greater output, although this effect is particularly strong in the northwestern heartland of science production, which among others includes France, Germany, and the United Kingdom. This effect is weaker in the east, and absent in the south. Fifth, interregional accessibility advantages mainly accrue to researchers in the northwest. Since this is the part of Europe with the best accessibility, the results seem to indicate that accessibility benefits mainly affect researchers in high-accessibility regions, with negligible accessibility-related productivity differences between scientists in regions with low or moderate accessibility.

Name	Arbabi, Hadi
Email	h.arbabi@sheffield.ac.uk
Affiliation	The University of Sheffield
With	Giuliano Punzo, the University of Sheffield
Title	Regional economic resilience, trophic coherence, and ecological analogies

Abstract   Works on regional resilience have at times borrowed from the engineering and ecological framing of resilience. In ecological contexts, system resilience is deeply rooted in network structure and trophic coherence. In ecology, the dynamic equilibrium in the predator-prey interactions can be effectively represented as food webs and described analytically. Likewise, regional IO interactions can be thought of as ecosystems and analyzed within ecological frameworks. Here, we empirically investigate the relationship between economic resilience and the trophic coherence across regional and national scales. We consider 249 NUTS2 regions across 24 countries over the 2000-2010 period. Our findings are three-fold. We observe and quantify a temporary restructuring of the inter-sector connections as reflected in the ecological metrics following major economic shocks and show a coupling to exist between these metrics and the economic output and its rate of change. We additionally explore and discuss the directionality of these relationships and use them to identify direct and indirect regional structural feedback loops affecting regional and national performance. Together, these imply a stronger and more structural parallel to exist between regional economic networks and those of an ecological nature than currently assumed.

	RSAI-BIS Stirling 2022: Book of Abstracts
Name	Barreiro-Pereira, Fernando
Email	fbarreiro@cee.uned.es
Affiliation	Spanish University for Distance Education (UNED)
With	Touria Abdelkader-Benmesaud-Conde
Title	Energy consumption and carbon dioxide emissions. social benefits of domestic renewable energy consumption

Abstract	Abstract: Carbon dioxide emissions are considered to be particularly responsible for global warming, as it is the most abundant greenhouse gas (GHG). The first objective of this paper is to analyse to what extent carbon dioxide emissions are directly associated with energy consumption and what households can do to reduce carbon dioxide emissions caused by their domestic energy consumption. A model relating energy consumption to carbon dioxide emissions is specified and applied on 20 countries whose total population is equivalent to 61 percent of the world population, in the period 1995-2015 with annual data, using econometric techniques including panel data. The result of the econometric application indicates that there is Granger causality between energy consumption and variations in ambient temperature on emissions. Another objective of this research is to select and calculate the social cost-effectiveness of sustainable, non-emitting energy systems for use in domestic energy consumption, three-quarters of which is for heating, cooling and hot water. To compare the social cost-effectiveness of energy systems to be used for heating and domestic hot water, a Cost-Benefit Analysis (CBA) has been applied in nine countries of the above sample belonging to the North Atlantic area. The results indicate that the use of thermal water, if applicable, is the most socially profitable system among those proposed, followed by natural gas assisted with solar thermal panels. The least cost-effective systems from a social point of view are those using electric heat pumps.

Name	Batey, Peter
Email	pwjbatey@liv.ac.uk
Affiliation	University of Liverpool
Title	Demo-economic modelling: new developments in measuring the economic impact of demographic change
Abstract	In 1980, the present author and his late colleague, Moss Madden published their first paper in an international regional science journal [1], on regional demographic-economic forecasting. The paper identified a serious flaw in modelling the effect that population has on the economy. Up till that point a population forecast would typically be fed into the final demand vector of an input-output model as consumption. This consumption then produces changes in the gross outputs of the industrial sectors represented in the model, which are combined with changes caused by other factors (such as exports) to represent overall changes in in the economy. The problem is that in order to obtain a consumption vector from a population, we have to know (or make some assumption about) unemployment, which is a determining factor in the level of consumption. Batey and Madden developed a solution to this problem by embedding an extended input-output model within an activity-commodity framework. The key innovation here was that instead of having one type of household, in the extended model there were now two types: employed and unemployed. The activity-commodity framework had a number of benefits: it offered flexibility in the choice of variables (demographic and economic), in the units in which these variables were measured, and in its solution method (in the form used here solved by inverting the (square) matrix of coefficients to give a single determinate solution. The inverse of this new, extended input-output model, known as the Batey-Madden model, provides a rich source of impact multipliers that are more realistic, including so-called Type 4 income, employment and production multipliers, and a range of demographic-economic multipliers that measure the effect of population change upon the regional economy. What is more, the model provides a simultaneous solution to the inconsistency problem, so that by inputting economically active to the model, consistent values of unemployment are calculated. This paper discusses recent attempts to use a modified Batey-Madden model to study the demographic-economic effects of urbanization. The focus will be on some recent work by Okamoto (2021) who focused on the Chinese experience and proposed an "urbanization multiplier" that highlights the interaction between population change and employment change. The paper analyses Okamoto's model and compares its structure with that of the Batey-Madden model. [1] Madden, M. and P.W.J. Batey (1980) "Achieving Consistency in Demographic-Economic Forecasting", Papers of the Regional Science Association, 44: 91-106. [2] Okamoto, N. (2021) "Extended input-output model for urbanization: an empirical test using Chinese data" Journal of Economic Structures 10(3).

Name	Bay, Franziska
Email	f.bay@rug.nl
Affiliation	University Of Groningen
With	Sierdjan Koster
Title	The role of job match quality in explaining job satisfaction disparities between self-employed and wage-employed workers

Abstract   Now more than ever - with the drastic change in working conditions during the pandemic – the importance of an individual's job satisfaction for their subjective well-being should not be disregarded. After all, inequalities in job satisfaction could be an indication for inequalities in subjective wellbeing. On average, in many studies, self-employed individuals are found to achieve a higher job satisfaction than their wage-employed peers. Many see the reason for this in the increased independence and autonomy experienced by entrepreneurs. This paper argues that entrepreneurs might also intentionally seek out their job to actively shape the business and their role in it to achieve a good job-skills match. As good job matches have been shown to lead to higher job satisfaction, they might offer a possible alternative explanation to why the self-employed experience higher job satisfaction than the wage-employed. This is investigated using the Dutch dataset of the OECD's Survey of Adult Skills, an international panel study that assesses job-related competencies. A subsample of 3,200 participants, which contains individuals between the ages of 15 and 65 who have been employed or self-employed in 2011 and 2012, is used to compare the job match quality and reported job satisfaction of self-employed vs wage-employed. Structural equation modeling is used to analyze group mean differences. The expected finding is that individuals who transition into self-employment are able to achieve a better-quality job match and this reach higher levels of job satisfaction. Control variables are observed numeracy, literacy and problem-solving skills, the individual's residential location, gender and level of education. Overall, this study contributes to the literature by offering another explanation of why the self-employed report higher levels of job satisfaction than wage-employed individuals while making use of actual skill measurements collected via the OECD survey.

Name	Bay, Franziska
Email	f.bay@rug.nl
Affiliation	University Of Groningen
With	Sierdjan Koster
Title	Data skills and data maturity of SMEs and how to increase them – A North Sea Region case study

Abstract   Digitization is a process that many SMEs still have to go through in order to stay competitive within their industries. Especially over the past two years, companies have experienced the urgency of digital transformation of business and sales processes. The uptake and implementation of digital tools and processes varies per region, industry and company as many factors come into play during development and innovation processes of an organization. This study investigates the influence factors of data maturity of SMEs and how it can be increased via a structured intervention. As part of the INTERREG project Futures by Design, measurements on digitals skills and data maturity have been collected from SMEs in 6 European regions and are analyzed to understand how data skills and data maturity differ between regions, industries and types of firms and how they can be increased. More specifically, the data is analyzed in terms of regional differences in the SMEs' data skills and maturity, choice of projects for intervention and reported obstacles as well as outcomes, such as increased innovation, derived from their participation in the project. Factors that are controlled for include the size of the firm, the industry they operate in, the age of the owner and the location of the firm (either in terms of urbanity or distance from next city or university). This data is collected via surveys and agreements made between the SME and project partner working with them. The improvements are measured based on a pre- and post-intervention survey setup. All practical lessons learned by SMEs as well as project facilitators is used as supplementary qualitative data that informs recommendations on future projects that aim to increase digitization of companies. The diverse range of regional samples make this paper an interesting contribution to the field of digital innovation.

Name	Bouman, Loes
Email	l.bouman@rug.nl
Affiliation	University of Groningen
With	Dimitris Ballas, Wander Jager, Richard Rijnks, Daniella Vos
Title	Understanding democratic and environmental innovations using spatial microsimulations and Agent-based models

Abstract   With the advancing climate crisis, the European Union (EU) is fighting climate change through ambitious international cooperation and policies at the local and global institutional level. With the European Climate Pact and The 2030 Climate Target Plan, also known as the European Green Deal, the EU aims to facilitate and increase a transformative pathway where multiple Democratic Innovations (DI's) can join to address various areas of the Green Deal and harmonise joint efforts. In DI's, citizen's participation and civic engagement are key in the transition toward a climate-neutral society. Scholarship and industry are actively seeking understanding in how to maximise citizens' participation in DI's and how to foster citizens' adaptation of pro-environmental behaviours. PHOENIX is a Horizon 2020 EU-funded project that fully embodies this notion and aims to increase the transformative potential of DI's by conducting in-depth analysis of evidence-based best-practices (e.g. supporting citizens assemblies, public debate, conferences and public budgeting) for DI's in 11 pilots across 7 EU countries. In this paper we present a holistic multimethod approach that we develop for PHOENIX, where we focus on further understanding citizens participation in DI's by taking socio-cultural, environmental and different administrative levels into account. By means of a spatial microsimulation model using small-area data, we build data-sets on the neighbourhood level to benchmark characteristics of individuals and households, along with firms or organisations. Using the results of the microsimulation, we build an Agent-Based Model with GIS mapping to explore what enables and motivates citizens to adopt pro-environmental behaviours and join DI's, and analyse how implementation of various best-practises impacts both citizens participation and the success of DI's. Our approach has the potential to yield tailored and testable policy recommendations for the 11 empirical pilots in the PHOENIX project in particular, with a high transferability to DI's in general.

Name	Brouwer, Aleid
Email	aleid.brouwer@nhlstenden.com
Affiliation	NHL Stenden university of Applied Sciences
Title	Barriers to Digitization in the Leisure Industry in Drenthe: Before and During the Pandemic
Abstract	Digitization and the use of data science for SME's is not always common practice. Even though most SMe's know about the options for digitization, only few do actually practice more advanced digitization tools. Nevertheless, studies have demonstrated that SME's that do digitize become more efficient, more innovative and more productive, which hence will have positive effects on their regional communities, especially in the more rural areas. However, especially SME's in more rural areas seem to experience barriers towards digitization. This is expected to be partly explained by physical factors (no high speed internet connection), the distance to knowledge centers and perhaps less face to face interaction with competitors. In a qualitative case study among 16 SMEs in a rural area in the Netherlands in the Leisure industry several barriers towards digitization are investigated and whether these barriers were effected due to the pandemic.

Name	Carthy, Philip
Email	philip.carthy@ucdconnect.ie
Affiliation	UCD
Title	Early-life environment and adult well-being in Ireland: Reexamining the impact of the 1947 Health Reforms
Abstract	A compelling body of evidence now suggests that favourable early-life circumstances form the basis for long-term health and future human capital development. Both prenatal and early childhood conditions can have lasting implications for health, education, and future earnings. Many of the factors that play a role have a regional component, implying that disparities in the quality of the environment one is born into could have lasting implications for individual well-being. Where validated, this hypothesis suggests significant potential for targeted investments and regional policy initiatives to improve child health to provide lasting benefits. This paper examines the effects of early-life conditions on the health and well-being of older adults in Ireland. I employ survey microdata and detailed residential history information collected as part of The Irish Longitudinal Study on Ageing. The data offer a unique opportunity to link participants' birth environment to a wide range of health and well-being indicators in later life and to test the effects of early-life conditions over a long time horizon. Building on previous analysis of the cohorts born in 1940s Ireland, the paper draws empirical motivation from sharp declines in infant mortality rates throughout the decade. The period saw an urban-rural convergence in infant mortality rates which was accelerated by a set of public health interventions and arguably induced exogenous variation in early childhood environments across geography. Using local infant mortality as a proxy, I compare outcomes of individuals who experienced varying levels of environmental quality early in life based on the location and timing of their birth.
	Preliminary results suggest a more modest effect of early-life conditions for this cohort than has typically been found in the literature. The paper presents a detailed empirical exploration of this unintuitive finding and attempts to place it in the context of the broader literature.

Name	Clarke, Graham
Email	g.p.clarke@leeds.ac.uk
Affiliation	University of Leeds
With	Lex Comber, Rachel Oldroyd, Jessica Hallett
Title	Geographies of mental health: new insights from big data

Abstract   In the past, it has been notoriously difficult to obtain reliable information on small-area variations in mental health. Hospital episode data can only record the more extreme incidents of mental health. Although survey data (such as the Health Survey for England) can record more detail on milder forms of mental health, the spatial resolution is often coarse (regional level at best). The aim of this paper is to explore new forms of big data now being released to the academic community – in this case GP prescription data. This contains details of all drugs administered by GPs, including drugs related to the treatment of mental health. This data thus offers a rich spatial tapestry for the study of mental health. The paper will explore the spatial pattern of mental health related drug prescriptions in Leeds UK and build a statistical model correlating mental health patterns with a variety of census variables, most notably age, social class and ethnicity. It will therefore provide detailed spatial insights into mental health not seen to date in the literature.

Name	Clifford, John Paul
Email	110720335@umail.ucc.ie
Affiliation	University College Cork
With	Prof. Justin Doran, Dr. Frank Crowley Dr. Declan Jordan
Title	The Role of Infrastructure in driving City Growth

Abstract

The purpose of this research is to gain a deeper understanding of the impact of infrastructure in driving city growth. The results may inform policy makers around the dynamics of different cities and provide valuable insights which would be relevant from a regional and spatial perspective.

With respect to cities, larger agglomerations of firms is linked with increasing productivity and thus growth along with the accumulation and spill over effects of the creation of knowledge and skills. These factors result in cities being more productive.

The development of infrastructure is considered a key component in unlocking and facilitating existing economic growth as well as sustaining future economic growth. The role of investment is critical as the development of large scale infrastructure projects can facilitate key connectivity points in the delivery of goods and services, often between multiple agglomerations.

This research will identify the dynamics between agglomerations and infrastructure development. With consistent increasing concentrations of people living in cities, the demand for the types and placement of, specific kinds of infrastructure, is of increasing interest to both citizens and policymakers from a spatial perspective.

Name	Clifton, Nick
Email	nclifton@cardiffmet.ac.uk
Affiliation	Cardiff Metropolitan University
With	Adi Weidenfeld & Tom Brökel
Title	Regional innovation systems as a comparative & evolutionary concept: elaborating the systemic knoweledge-network continuum

Abstract   The Regional Innovation System (RIS) concept, contextualising the place-based characteristics of innovation, has proved popular with scholars and policymakers (not least underpinning a whole raft of smart specialisation strategies in recent years). Despite well-rehearsed critiques regarding its ambiguity and fluidity however, it is quite surprising that a common underlying assumption of the RIS concept is of its existence in almost every region. This assumption typically exists without well-defined and common criteria supported by empirical evidence. To this end, this paper develops the conceptualisation and operationalisation of both networks and systems by exploring the rationales and dimensions underpinning regional knowledge exchange, networks and systems with actors at different levels of geographic proximity. We suggest here that the three criteria defining a RIS's systemic qualities (coherence, unified function, and boundedness) can be conceived as underpinned by network mechanisms, and these criteria can change over time. Thus a RIS is realised when these mechanisms are self-enforcing, and can offer resilience to various shocks. The value of the contribution here lies in providing: 1] a framework for interregional comparison of knowledge networks and systems addressing the lack of relevance of the RIS theory to many regions 2] a future research agenda that will elaborate additional typologies and their policy implications. 3] the addition of the presently missing (but needed) evolutionary dimension for the RIS literature The paper begins with suggesting a definitional clarity to the terms 'network' and 'system' in general and contextualises these to distinguish between regional knowledge networks and RISs in particular. The latter is developed by introducing the network-system continuum, including the concept of systemic regional knowledge exchange networks and the demonstration by selected exemplars. It also sets up a new agenda for undertaking empirical studies on the structures, formations and evolutionary paths of this continuum, elaborating the suggested conceptual framework. The contribution here is that the continuum we propose is both evolutionary (i.e. places can develop along it over time) and comparative (one place can be compared to another at the same point if time). Previous the RIS is essentially static (that is, non-evolutionary) and without nuance- i.e. a RIS is assumed to either exist or not. This justifies the approach we propose - the examples given then illustrate the advantage that this provides in terms of (for example) insights to policy that otherwise not be would apparent. An agenda for further research on the concept is then proposed.

Name	Cnossen, Femke
Email	f.d.cnossen@rug.nl
Affiliation	University of Groningen
With	Matloob Piracha
Title	Learning the Right Skill: The Returns to Social, Technical and Basic Skills for Middle-Educated Graduates

Abstract   Technological change and globalization have sparked debates on the changing demand for skills in western labour markets, especially for middle skilled workers who have seen their tasks replaced. This paper provides a new data set, which is based on text data from curricula of the entire Dutch vocational education system. We extract verbs and nouns to measure social, technical and basic skills in a novel way. This method allows us to uncover the skills middleskilled students learn in school. Using this data, we show that skill returns vary across students specialized in STEM, economics or health, as well as across sectors of employment.

Name	Connolly, Kevin
Email	k.connolly@strath.ac.uk
Affiliation	University of Strathclyde
With	James Black; Sharada Davidson; Mairi Spowage
Title	Policymakers' Perspectives on Producing Regional Input Output Tables: Insights from the UK's Four Nations

Abstract — There is a vast academic literature considering how regional input output tables (IOTs) can be constructed. This paper provides a policymaking perspective, summarising the trade-offs and challenges faced by producers of statistics when constructing regional IOTs. We focus on the UK where increased devolution of powers, Brexit, the coronavirus pandemic and the 'levelling up' agenda have put a spotlight on regional economic statistics. Importantly, the issues we explore reflect our discussions with the Office for National Statistics (ONS) and the devolved administrations in Scotland, Wales and Northern Ireland. The ONS regularly publishes a UK IOT, with the Scottish Government and the Northern Ireland Executive producing their own regional IOTs. The Scottish and Northern Irish IOTs are produced using a 'hybrid' approach which combines local survey data with regionalised UK data. Pure 'top-down' approaches involve regionalising the UK IOT. These are less accurate but can be produced more quickly and at lower cost. Where little detailed regional data exists, common techniques for producing regional IOTs include Location Quotients (LQ), RAS or mathematical optimisation. Our paper begins by reviewing different methods for constructing regional IOTs and current international practise among National Statistical Institutions. We then focus on policymakers' experiences, discussing how the Scottish, Northern Irish and UK IOTs are produced and the challenges faced in their construction. To examine how 'top down' approaches fare in the UK context, we then investigate the effectiveness of Flegg's LQ in producing regional IOTs for the UK's four nations. We examine the key aggregates of the four tables along with the impact of the regionalisation on Type I multipliers. The results of the Scottish regionalisation are then contrasted with the IOT published by the Scottish Government. We conclude our paper by providing academic researchers with directions for future research in light of policymakers' needs.

	RSAI-BIS Stirling 2022: Book of Abstracts
Name	Credit, Kevin
Email	kevin.credit@mu.ie
Affiliation	Maynooth University
With	Nicole Marwell Crown Family School of Social Work, Policy, and Practice University of Chicago nmarwell@uchicago.edu
	Ethan Park School of Social Work University of Michigan sunggeun@umich.edu
Title	Spatial Patterns in Social Service Provision: Evidence from Disaggregated Public Data in New York City

Abstract	The rapid growth of the nonprofit sector in recent years can be seen as both a cause and consequence of the fractured administration of social services in the United States. On the one hand, the proliferation of nonprofits since 1970 is due to the organising work of marginalised communities to address service deficiencies. On the other hand, the administration of social services according to a federal system that disperses grants to state and city government agencies, which subsequently disperse the money through contracts with individual nonprofits, creates a highly complex pattern of social service provision. Given these conditions, significant gaps remain in our knowledge of the spatial patterns of social service provision. In this paper we apply a variety of exploratory spatial data analysis (ESDA) and spatial econometric approaches to a unique dataset from New York City (NYC) that includes location information for both a nonprofit's headquarters location and its associated service locations to better understand the spatial distribution of nonprofit resources. We find that when the contract value is disaggregated across service sites it does more closely match with the expected social service demand factors, providing a more accurate picture of the allocation of resources. However, even after accounting for a number of observed and unobserved spatial features, our results show that several areas of the city receive more social service contract funding relative to their proportion of demand factors than would otherwise be expected. In addition, we find that different types of organisations display distinct location patterns, with 1) single-neighbourhood organisations more likely to locate in Black neighbourhoods and neighbourhoods with children, 2) extended-neighbourhood organisations more likely to locate in Asian and Hispanic neighbourhoods, and 3) citywide-serving organisations more likely to locate in neighbourhoods with older and foreign-born population, larger levels of socioeconomic disadvantage, and larger overall populations.

Name	Crowley, Frank
Email	frank.crowley@ucc.ie
Affiliation	Spatial and Regional Economic Research Centre, CUBS, UCC.
With	Justin Doran, Philip McCann, Richard Rijnks
Title	Firm research, development and commercialisation and triple helix interactions in the offshore marine energy sector

Abstract   To innovate can be an arduous path for a firm to journey. It is uncertain, non-linear and product development can run into many unforeseen obstacles. Often, the firm needs to look externally for support, and engaging in exploratory or exploitative relationships with external actors has become ubiquitous for most firms. This paper examines the importance of triple-helix (industry, university, and government) interactions for firm research, development, and commercialisation in the nascent and emergent offshore marine energy sector of Western Europe. Specifically, key objectives of the paper are to examine if the stage of product development the firm is at matters (i.e. research, development, and commercialisation) for what type of triple helix interaction take place and to uncover what factors trigger and limit the formation of the triple helix system in the marine energy sector case. We use the technological level readiness (TRL) methodology to model the firms development status and both quantitative survey data (173 observations) and qualitative interview data (35 interviews). University interactions are identified as being important at the early and late stages of the TRL and government interactions are important at late stages of the TRL. A complex web of industry level interactions involving consultants, suppliers, competitors, and customers take place at various stages of the TRL. The interviews provide interesting depth as to why firms engage in triple helix interactions and reveal the factors currently preventing effective triple helix formation in the marine industry.

Name	D'Costa, Sabine
Email	s.dcosta@westminster.ac.uk
Affiliation	University of Westminster
Title	Why is the urban wage premium larger for women?
Abstract	This paper looks at gender as a new, important source of heterogeneity in the urban wage premium. Using a representative panel of over 1 million male and female observations in Great Britain from the ASHE/NES survey covering the years 1998-2019, I estimate the urban wage premium for men and women across time periods and before and after controlling for sorting on unobserved ability. This can assess if the urban wage premium is underestimated in the literature, given that previous estimates are either based on male workers or gender-neutral. This also reveals if sorting on ability into cities is more pronounced for men than for women in the UK. I then investigate the channels that can theoretically explain the gender difference in urban wage premium. I find no evidence of superior learning or matching in cities for women compared to men when they remain within their urban labour market. However, I uncover significant gender differences in the matching benefits of cities that take place when a worker transitions between rural and urban jobs: women benefit from improvements in matching with the right occupation at the time when they transition between a rural and an urban job.

Name	Dall'erba, Sandy
Email	dallerba@illinois.edu
Affiliation	University of Illinois at Urbana-Champaign, USA
With	André Chagas, William Ridley, Yilan Xu and Lilin Yuan
Title	Instrumental Variable Network Difference-in-Differences (IV-NDID) estimator: model and application

Abstract   The difference-in-difference (DID) framework is now a well-accepted method in quasi-experimental research. However, DID does not consider treatment-induced changes to a network linking treated and control units. Our instrumental variable network DID methodology controls first for the endogeneity of the network to the treatment and, second, for the direct and indirect role of the treatment on any network member. Monte Carlo simulations and an estimation of the drought impact on global wheat trade and production demonstrate the performance of our new estimator. Results show that DID disregarding the network and its changes leads to significant underestimates of overall treatment effects.

	RSAI-BIS Stirling 2022: Book of Abstracts
Name	Dall'erba, Sandy
Email	dallerba@illinois.edu
Affiliation	University of Illinois at Urbana-Champaign, USA
With	Noé J Nava, William Ridley
Title	A model of the U.S. food system: What are the determinants of the state vulnerabilities to production shocks and supply chain disruptions?

Abstract	We adapt a Ricardian general equilibrium model to the setting of U.S. domestic agri-food trade to assess states' vulnerability to adverse production shocks and supply chain disruptions. To this end, we analyze how domestic crop supply chains depend on fundamental state-level comparative advantages – which reflect underlying differences in states' cost-adjusted productivity levels – and thereby illustrate the capacity of states to adapt to and mitigate the impacts of such disruptions to the U.S. agricultural sector. Based on the theoretical framework and our estimates of the model's structural parameters obtained using data on U.S. production, consumption, and domestic trade in crops, we undertake counterfactual simulations to characterize the welfare implications of counterfactual scenarios depicting disruptions to (1) states' agricultural productive capacity, and (2) interstate supply linkages. Our results emphasize that the distributional impacts of domestic supply chain disruptions hinge on the extent of individual states' agricultural productive capacities, and that the capacity for states to mitigate the impacts of adverse production shocks through trade relies on the degree to which states are able to substitute local production shortfalls by sourcing crops from other states.

Name	Danakol, Seçil Hülya
Email	s.danakol@aston.ac.uk
Affiliation	Aston Business School, Aston University, Birmingham, UK
Title	New Firm Formation in Turkey: The Effect of Export Activities of Large Domestic and Foreign Incumbent Firms
Abstract	There is consensus that the presence and operations of foreign firms are critical in shaping the entrepreneurial landscape in host countries. The emerging issue is not whether foreign firms matter, but through which channels this effect occurs. Surprisingly, how export activities of foreign firms are related to new firm formation is poorly understood, and remains an unexplored channel, although these firms are heavily involved in trade and alter local market conditions faced by would-be entrepreneurs. Utilising a two-level multilevel model, this paper empirically investigates foreign and domestic incumbents' exports as possible antecedents of new firm formation in 81 provinces (NUTS-3) in Turkey over 2013-2020, which yields a panel of 648 province-year observations. The effect of domestic incumbents is also considered because their presence in international markets has been steadily increasing, and they contribute to the renewal and development of regional capabilities along with their foreign counterparts. Finally, I explore the heterogeneity of export channel effects among new firms, again differentiated by ownership: domestic versus foreign entry. I adopt a regional perspective, taking into account the significant social and economic disparities across provinces. The main result is that provincial variation in new firm formation is explained largely by incumbent firms' exports, and I uncover significant heterogeneity. While exports by foreign incumbents in a province are negatively associated with new total, domestic and foreign entry rates, exports by domestic incumbents are positively associated with all three measures of entry. The data allows me to track the source of these significant effects. The analysis confirms that it is producer-exporters that drive the results rather than intermediate-exporters. I borrow from the convergence literature to elucidate the findings, and conceptualize domestic exporters as lagging and foreign exporters as leading firms. I argue that the former are better positioned to acquire and assimilate knowledge available in overseas markets, and adapt it to the local context. Foreign firms, in contrast, are already far advanced and less concerned about the knowledge absorption via exports.

Name	Denti, Daria
Email	daria.denti@gssi.it
Affiliation	Gran Sasso Science Institute. London School of Economics
Title	The Councilwoman's Tale. Countering Intimate Partner Homicides by electing women in local councils.
Abstract	Intimate Partner Homicides (IPHs) represent the most extreme violence against women, yet evidence on their socioeconomic determinants is scarce. This paper contributes to fill this gap focusing on Italy, where the ratio IPHs over total female homicides increased by more than 20% in ten years. We build a unique microregional dataset of IPHs between 2012 and 2019. Our instrumental variable model finds that the share of local female political representatives had a substantial negative effect on IPHs. As instrument we exploit exogenous geography of soil composition given its persistent effects on gender-biased cultural norms through historical agricultural practices. Places with more women in local public office experience lower IPHs, due to more gender-equal cultural norms. Results have policy implications, as they suggest that female political representation might have positive effect in IPHs reduction, by influencing the transmission of gender norms.

Name	Devlin, Anne
Email	anne.devlin@esri.ie
Affiliation	Economic and Social Research Institute
With	Declan French and Duncan McVicar
Title	Why are disability rates in Northern Ireland so high?

Abstract   Economic inactivity rates in Northern Ireland (NI) have long been far higher than those in most other UK regions. Much of this is accounted for by high rates of inactivity on the grounds of poor long-term health or disability in NI (NISRA, 2017). In fact, of those economically inactive in NI, 30% are long-term sick/disabled compared to 22% in England. People in NI are also much more likely to be in receipt of disability benefits. A key focus of the NI Executive's most recent Programme for Government (PfG) is tackling NI's high rates of economic inactivity. To do so, however, requires a detailed understanding of why the levels of disability are so much higher in NI. Such an understanding is currently lacking and this paper sets out to fill this gap in the knowledge base. Internationally, it has been argued that differences in the strength of local labour markets are the key driver of spatial differences in disability rates and/or disability benefit claiming rates within countries with health a secondary determinant (Autor & Duggan, 2003; Beatty & Fothergill, 2002; McVicar, 2006; Beatty & Fothergill, 2010). NI is an interesting case in this regard as it has both a comparatively weak labour market (e.g. a low employment rate and low wages) and comparatively poor health (life expectancy is NI is considerably lower in NI than it is in England and Wales). It has been well established in Great Britain (that is England, Scotland and Wales) that slack in the local labour market has led to increased disability rolls (Beatty & Fothergill, 1996, 2002, 2005). The same evidence has yet to be presented for NI. A report by Beatty & Fothergill (2013) on the impact of welfare reform in NI more generally argues that the extreme case of higher disability rates in NI are in part because of poorer health, but as the international literature suggests, are mostly because of the weak local labour market. However, the report does not attempt to quantify either relationship. This paper sets out to more fully quantify the determinants of the high disability rates in NI given their importance to the Northern Irish economy.

Name	Devlin, Anne
Email	anne.devlin@esri.ie
Affiliation	Economic and Social Research Institute
With	Seamus McGuinness, Adele Whelan
Title	Urban Disadvantage: Does it matter where you live?

Abstract	Are individuals living in certain urban or rural settings more likely to experience barriers to social inclusions, if so, what are the nature of the barriers that they face? Using a unique administrative dataset for Ireland's dominant social inclusion programme, this paper examines the effect of location on the incidence of barriers to social inclusion. Our results highlight that urban disadvantage, measured as those experiencing barriers to social inclusion, is not confined to inner city areas, as several of the most severely disadvantaged neighbourhoods are located in independent urban towns. Individuals in such fringe urban settings are found to have significantly worse outcomes, in terms of progression into employment, compared to those in rural areas. Such questions and findings provide evidence that suggest that key differences in the characteristics of individuals facing particular barriers should be reflected in the design and delivery of interventions (education, training, transport, childcare supports) aimed at reducing the impacts of particular forms of social exclusion.

Name	Ellaway, Stuart
Email	stuart.ellaway@plymouth.ac.uk
Affiliation	University of Plymouth
With	Alan Smith, Andy Newing, Jacob Van Alwon
Title	Using small area water metering data to estimate seasonal population change

Abstract Water usage is metered at strategic points within the UK supply network by the statutory water authority. Working with South West Water (SWW), these have been provided at the district metering area (DMA, c. 1500 households) level for Devon and Cornwall in southwest England. An advantage of drinking water usage analysis at the DMA level is complete coverage by a single supplier which avoids data coverage limitations where household metering coverage is incomplete. The work presented as part of the ESRC funded WatPop project aims to infer the seasonal and spatial distribution of small-area tourist-driven population fluctuations using area-based measures of water supply. DMA usage data from SWW has been combined with 2011 census data and mid year estimates to create profile indictors of DMA area type. These are used to inform tourist driven, seasonal fluctuations that are not captured in in censuses or traditional datasets. This has the advantage of complete spatial coverage at a high temporal resolution at the regional level. This is important for social policy development, informing the future of census and census like products. As well as the societal and academic benefits the water supply authority also can better understand consumer demand within their network. This can lead to resilience building opportunities in response to climate and population pressure. A selection of tourist driven water demand indicators and characteristics will be presented.

Name	Fuchs, Michaela
Email	michaela.fuchs@iab.de
Affiliation	Institute for Employment Research
With	Ramona Jost, Antje Weyh
Title	Is there a double gap? Urban-rural differences in the gender gap in commuting

Abstract It is a stylized fact that women commute shorter distances to work than men, and several determinants explain this gender gap in commuting. Among individual factors, age, education, or household responsibilities play a role. Likewise, job-related factors such as working part-time or in sectors located close to home make commuting long distances less attractive for women. In regional respect, geographic and labor market characteristics constitute important determinants. Due to lower spatial mobility, women benefit less than men from better job opportunities or higher wages in other regions. This is especially the case in rural environments, where individuals have to commute longer distances to their workplace than in urban regions. Although much is known on the gender-specific determinants of commuting, the lack of comprehensive data in spatial and temporal respect represents a major limitation. Most studies focus only on a specific region or time span and cannot explain the long-run evolution and determinants of the commuting gap on a small-scale spatial level in a satisfactory way. This may be particularly important because, for example, better local childcare provision has made it easier for women to work, which might decrease the commuting gap. We extend this limitation by investigating the gender gap in commuting for the years from 2000 to 2017. We use a unique dataset for Germany that contains geocoded information on the place of residence and work for each employee. Route-planning algorithms allow for a precise measurement of daily commuting distances and times. Besides a detailed analysis of the gendered commuting patterns over time, we investigate commuting in an urban-rural framework. Results show that commuting time has increased more for women than for men, leading to a decreasing commuting gap. However, there are large differences as to commuting between or within urban/rural regions. Analyzing individual, job-related and regional determinants of these gaps with Oaxaca-Blinder decompositions reveals significant variation in their explanatory power.

Name	Giannakis, Elias
Email	e.giannakis@cyi.ac.cy
Affiliation	The Cyprus Institute
With	Adriana Bruggeman; Theofanis P. Mamuneas
Title	Regional Economic Resilience, Productivity Growth and Industrial Interconnectedness

Abstract — This paper develops a theoretical model to conceptualize and empirically measure regional economic resilience. We define resilience in terms of total factor productivity growth. To the best of our knowledge, this is the first paper that encompasses in the resilience metric the change in the behaviour of economic agents by controlling for changes in the production factors. Research on the role of industrial interconnectedness in shaping resilience capabilities remains relatively limited. We provide a systematic quantification of the role of input-output networks and agglomeration economies in enhancing regions' resilience to exogenous shocks. We develop 276 regional input-output models over the European Union (EU) NUTS-2 regions to estimate intersectoral linkages. The perpetual inventory method is applied to construct capital stock series for each EU NUTS-2 region. Spatial regression models are employed to analyse how the post-crisis performance of regions is related to the structure of input-output linkages before the onset of the 2008 economic crisis and capture the effect of global and local spillovers. A Bayesian model selection approach using alternative spatial weight matrices is applied to choose the most appropriate model, that is, the spatial Durbin error model. Our empirical results indicate that the pre-crisis input-output linkages of the Construction and Finance sectors are positively associated with the resilience of EU regions, while the network effects of the Public Administration, Health and Education sector negatively influence regional economic resilience. Agglomeration economies have a positive effect on the ability of EU regions to withstand, react and recover from exogenous shocks. Strengthening the intersectoral linkages of the Construction and Finance sectors can play an important role in the capacity of EU regions to absorb and recover from exogenous shocks. This should be a key priority of current and future fiscal packages for overcoming the adverse effects of exogenous shocks.

Name	Gorman, Aine
Email	AineGorman@ucc.ie
Affiliation	Cork University Business School University College Cork Western Road Cork
With	Declan Jordan
Title	Willingness to pay for safe cycling infrastructure for children commuting to school in the Cork urban area

Abstract — It is now widely accepted that regular physical activity brings significant health, environmental, social, and economic benefits. Active travel to school is a mechanism by which children and young people can counter the effects of more sedentary lifestyles, contribute to environmental challenges, and enhance wellbeing. There is also empirical evidence that higher levels of cycling commuting among young people is associated with persistence in sustainable commuting modes into adulthood. This means investment in safe cycling infrastructure for school children may provide generational shifts in behaviour. However, while more evidence of the benefits from active commuting to school emerges, the international evidence indicates that fewer children and adolescents are cycling.

Name	Hulse, James
Email	J.J.C.Hulse@leeds.ac.uk
Affiliation	Leeds
With	Dr. Andy Newing Dr. Gordon Mitchell
Title	Evaluation of Data Granularity Within the Non Household Water Market

Name	Ibarra-Olivo, Eduardo
Email	eduardo.ibarra-olivo@henley.ac.uk
Affiliation	Henley Business School
With	Andrés Espejo
Title	Foreign direct investment and informal labour markets in emerging economies: Evidence of Mexican municipalities

Abstract — Multinational Enterprise (MNE) presence may affect the degree of informality in the host economy. Whilst foreign firms generally operate within the formal sector of the economy, they may also choose to outsource some stages of production in the host informal labour markets. The economic significance of these effects will depend on the labour force requirements for a given economic sector and the reliance of MNEs on certain types of labour. On the one hand, recent decades have witnessed changes in sectoral composition of inward foreign direct investment (FDI) along with changes in the spatial distribution at the subnational level. On the other hand, labour informality is still commonplace in the Mexican economy, though, informality rates vary markedly across subnational regions. This paper studies the heterogeneous effects of MNEs' direct investment activities on informality in the host region and sector of destination. By exploiting cross-municipality variation in both labour informality and inward FDI stocks, we can assess the capacity of such investments to increase or decrease informal employment in the host regional economy. This paper sheds light on the link between FDI and labour informality in the context of an emerging Latin American economy. The implications on labour market outcomes are ascertained not only individuals but regions as well.

Name	Irastorza-Fadrique, Aitor
Email	aitor.irastorza-fadrique@essex.ac.uk
Affiliation	University of Essex and Institute for Fiscal Studies (IFS)
Title	Industrial Robots and Worker Reallocation in Great Britain

Name	Jambrina Canseco, Beatriz
Email	b.jambrina-canseco@lse.ac.uk
Affiliation	LSE
Title	The stories we tell ourselves: Local newspaper reporting and support for the radical right
Abstract	This paper addresses the lack of scholarly empirical research on the demand, costs, and benefits of cycling infrastructure in Ireland and contributes to the evidence base for policy making on developing liveable and sustainable Irish cities.

Name	Koeppen, Luise
Email	m.l.c.koeppen@rug.nl
Affiliation	University of Groningen
With	Prof. Dr. Dimitris Ballas; Dr. Arjen Edzes; Dr. Sierdjan Koster
Title	Social Capital and long-term economic and demographic decline (GER)

Abstract	Based on an original survey completed in March and April 2022 by 310 parents of primary and secondary school students, the paper estimates their willingness to pay for safe cycling infrastructure for their childrens' commute to school. The research shows that most children travel to school by private car, even where travel distances are relatively small. Parents indicate that they perceive their neighbourhoods as not cycle-friendly and that the primary reason for the children not cycling to school currently is that it would not be safe.

Name	Konstantinis, Alvertos
Email	a.konstantinis@rug.nl
Affiliation	University of Groningen
With	Dimitris Ballas, Paul Elhorst, Daniele Mantegazzi
Title	Spatio-Temporal dimensions of precarious employment and well-being in the UK

Name	Luca, Davide
Email	dl622@cam.ac.uk
Affiliation	Cambridge University
With	Andrew McNeil, Neil Lee
Title	The long shadow of local decline: birthplace economic conditions, political attitudes, and long-term individual economic outcomes in the UK

Abstract   Does growing up in a high-unemployment area matter for individual economic and political outcomes? Despite a significant focus upon the links between place of residence, life outcomes and political attitudes of individuals, there is less evidence on how local economic conditions at birth shape individual wages and political attitudes over the long-term. This paper links the British Household Panel Survey (BHPS) micro data from English and Welsh respondents with historic localised information on unemployment. Our results, which control for composition effects, family background, and sorting of people across places, show that being born into a high-unemployment Local Authority has a significant, long-term impact on individual's economic outcomes, decreasing earnings in adulthood. Even accounting for individual economic outcomes, being born into a local authority of high unemployment makes individuals more economically left-wing, with a greater belief in an obligation for the government to provide jobs, but also less culturally tolerant. These results contribute to the debate on the nature and rationales of place-based policy solutions.

Name	Luca, Davide
Email	dl622@cam.ac.uk
Affiliation	Cambridge University
With	Javier Terrero-Davila, Jonas Stein, Neil Lee
Title	Progressive Cities: Urban-rural polarisation of social values and economic development around the world

Abstract   In contrast to the conservative values of rural populations, cities are often seen as bulwarks of liberal, progressive values. This urban-rural divide in values has become one of the major fault lines in western democracies, underpinning major political events of the last decade, not least the election of Donald Trump. Yet, beyond a small number of countries, there is little evidence that cities really are more liberal than rural areas. Evolutionary modernisation theory suggests that socio-economic development may lead to the spread of, progressive, self-expression values but provides little guidance on the role of cities in this process. Has an urban-rural split in values developed across the world? And does this gap depend on the economic development of a country? We answer these questions using a large cross-sectional dataset covering 66 countries. We show that there are marked and significant urban-rural differences in progressive values, defined as attitudes to immigration, gender rights, and family life. These differences exist even when controlling for observable compositional effects, suggesting that cities do play a role in the spread of progressive values. Yet, these results only apply at higher levels of economic development suggesting that, for cities to leave behind rural areas in terms of liberal values, the satisfying of certain material needs is a prerequisite.

	RSAI-BIS Stirling 2022: Book of Abstracts
Name	Luca, Davide
Email	dl622@cam.ac.uk
Affiliation	Cambridge University
With	Alessio Romarri
Title	Organised crime and the geography of wind and solar farms in Italy

Abstract: The transition to low-carbon energy sources is considered as one of the key policies to tackle climate change and, to this aim, many European governments have been supporting the transition to renewable energy through subsidies. Growing anecdotal evidence suggests that the generosity of incentives has attracted the interests of corrupt politicians and criminal organisations, as the wind and solar energy sector offer attractive opportunities for mafias to benefit from public subsidies and to launder illegal money via legal business structures. Yet, little research has systematically explored the link between organised crime and the renewable energy sector at the local level. Our project aims to fill this gap. The analysis features innovative GIS data on the geo-location of wind and solar farms across Italy and on the local presence of mafia groups. Preliminary findings confirm how, in mafia-ridden regions, local criminal presence is strongly associated with a higher likelihood of hosting at least a plant.

Name	Lyons, Matthew
Email	m.lyons@bham.ac.uk
Affiliation	University of Birmingham
With	Raquel Ortega Argiles, Magda Cepeda Zorrilla, Deniz Sevinc
Title	Understanding the '2020 Shock' in the UK's Automotive Sector

Abstract — The automotive industry is an important part of the UK national economy with an estimated £78.9 billion in turnover and £15.3 billion in GVA and supporting over 800,000 jobs in 2019 (SMMT, 2021). Both Covid-19 and Brexit implementation have disrupted production, demand and trade for industries throughout the automotive supply chain. In the UK new car production is down -29.3% in 2020 and -28.7% in 2021 compared to 2019. Representing the lowest levels of car production since 1984 (SMMT, 2022).

This paper uses a hypothetical extraction method in a multi-region input-output (MRIO) model to estimate the economic impact of the so-called '2020 shock' in the automotive clusters in the Midlands and the North of England in 2020. Initial findings show that the shock in the Midlands cluster was more pronounced leading to a fall in output of £10.9 billion compared to the North £4.9 billion. The regions in the South East of England were found to be relatively insulated to the shock.

As UK policy shifts automotive production towards EVs there are systemic risks to the future of the sector and in turn the economies of the West Midlands and North East. If levelling up is to succeed in these regions there must be a broad understanding of how these can be supported through public investment in manufacturing and the local skills pool.

Name	McSorley, Leaza
Email	Leaza.McSorley@Sunderland.ac.uk
Affiliation	University of Sunderland
Title	Rethinking Regional Productivity: Bridging the equity-efficiency trade-off
Abstract	Following the coronavirus pandemic enhancing productivity is viewed as a policy priority. However, this paper argues it is necessary to ensure that productivity policies deliver broad-based improvements which deliver societal and economic gains. Otherwise, there is a risk of a 'vicious cycle' where by policies designed to improve productivity may simultaneously increase inequalities.

Following the coronavirus crisis how we rebuild the productive capacity of our economy will be key to the shape and speed of a country's recovery and its resilience to future shocks. This paper develops on a previously devised framework for inclusive productivity (McSorley 2020, 2019) which allows for a broader conception of productivity, focused on productive capacity rather than the percentage growth rate, that is tractable, and allows for the development of real-world productivity policies.

This paper's analysis shows that increasing horizontal inequalities between and within regions and between different social groups (particularly gender and emerging inter-generational inequalities) may act to undermine strategies targeted at boosting productivity. As may policies that prioritise aggregate productivity growth versus how productivity is created and distributed (sectorally, geographically and socially). As we saw following the financial crisis mainstream economic policies can cause a geographically and socially unbalanced recovery resulting in widening structural inequalities in our labour markets, regional economies, and our society. To avoid this 'vicious cycle' this paper reframes the debate providing a framework to bridge the equity-efficiency trade-off, and focus policy choices on delivering inclusive productivity growth.

Name	Moffat, John
Email	john.moffat@durham.ac.uk
Affiliation	Durham University
With	Richard Harris
Title	The effect of co-location on business R&D in Great Britain

Abstract

The current UK government has made 'levelling-up' the economy one of its main priorities. Supporting existing clusters and creating new clusters in less prosperous areas is one approach to achieving this aim that has received widespread support. To provide evidence on the effects of clustering on business performance, this paper analyses the effects of spatial co-location, with both businesses in the same industry and businesses in other industries, on the extensive and intensive margins of R&D. The main dataset is the UK Innovation Survey, which is a biannual survey of the innovation activities of businesses in the UK. To mitigate modifiable areal unit problems, a measure of co-location is constructed based on the postcode districts of the population of plants. The results suggest heterogeneous effects of co-location by sector. The estimated effects are often negative, which is consistent with businesses reducing their R&D costs by freeriding off the R&D expenditures of other businesses.

Name	Newing, Andy
Email	a.newing@leeds.ac.uk
Affiliation	University of Leeds
With	Catherine Duffy Joanna Gorska
Title	Geographical accessibility of COVID-19 vaccination sites in England

Abstract | This presentation considers the geographical accessibility of COVID-19 vaccination sites in England. High quality commercial sector routing data are used to capture journey time (by private and public transport) to vaccination sites at a snapshot in time during phase 2 of the vaccination programme. We highlight inequalities in vaccination site paccessibility at a local and regional level, driven by avaiability of private transport and rural-urban geography. We highlight the importance of GP-led provision in maintaining accessibility to COVID-19 vaccinations at the local level and comment on the implications for ongoing mass vaccination programmes.

	RSAI-BIS Stirling 2022: Book of Abstracts
Name	O'Driscoll, Conor
Email	117337281@umail.ucc.ie
Affiliation	University College Cork - Cork University Business School - Spatial and Regional Economic Research Centre
With	Dr. Frank Crowley; Prof. Justin Doran; Dr. Nóirín McCarthy
Title	The Determinants of Commute Mode Choice in Ireland

Abstract — Implicit within the concept of sustainability is the suggestion that infrastructural developments should serve their communities economically and socially, while not degrading their local environment. An obvious case where this concept has failed to occur is in the area of transport infrastructure and travel behaviours. Excessive travel patterns and disproportionately large investments in infrastructure which caters solely to private, motorised vehicles create negative externalities, which acutely harm core and periphery regions alike by increasing congestion, pollution, and the personal costs associated with travel. This paper examines the determinants of commute mode choice for workers and students within a multi modal transportation network incorporating external socioeconomic, infrastructural, and built environment indicators using 2016 Irish census data, whilst also utilising data from OpenStreetMap, the 2018 CORINE Land Cover dataset, the Irish Property Price Register, and Trinity College Dublin's Deprivation Index. This analysis is performed at the ED and County level across the entire Republic of Ireland. Methodologically, we utilise Logistic regression modelling and incorporate multinomial, nested, cross-nested, and multi-level extensions to address spatial dependency issues highlighted by previous literature. Furthermore, we incorporate data on private, active and public transport quality within each area, alongside proxy measures of relative prosperity, enabling us to spatially contextualise the decision-making process. Furthermore, we advance current state of the art by modelling travel mode choice for students and workers, the former being relatively novel and an under researched domain. The preliminary results suggest the degree of urbanisation of residential areas exert the strongest influence in determining commute mode for both workers and students across sustainable transport modes, whereas the preference for alternative (i.e., private motorised) modes stems mostly from factors relating to modal convenience. These insights offer clear directions for future policymaking aimed at curbing car dependence and excessive travel behaviours.

Name	O'Driscoll, Josh
Email	116336283@umail.ucc.ie
Affiliation	University College Cork
With	Frank Crowley, Justin Doran, David Meredith, Mary O'Shaughnessy
Title	Factors driving shrinkage across Irish Electoral Divisions (1986-2016)

Abstract   Regional shrinkage has gained more attention from academics and policymakers in recent years who are concerned with the long-term implications on the economic base, labour market, (Ubareviciene et al., 2016) and the future provision of general services (Leibert and Golinski, 2016). Research has shifted to consider urban and rural regions as shrinkage involves broader regional social and economic systems and processes, which are not confined to cities (Batunova and Perucca, 2020). However, less consideration has been given to sub-national analyses of shrinking, e.g., at 'small area', municipal or functional area level (Copus et al., 2021).

Shrinkage is a complicated process with many different definitions (Sepp and Veemaa, 2017). This paper defines shrinkage as regions that experienced above average population loss over a 30-year period. Our rectified dataset, comprised of seven Irish Census of Population from 1986 to 2016 at the Electoral Division (ED) level, covers 3,384 EDs in the Republic of Ireland. We estimate a probit model examining economic/industrial (e.g., unemployment rate and industry share), sociodemographic (e.g., proportion of population with higher education, age profiles) and regional factors (e.g., population density, distance from towns/cities) impact on shrinkage.

Our paper makes three contributions to existing literature. Firstly, sub-regional data allows us to examine shrinkage in both urban and rural areas. Detailed spatial scale analysis is crucial as socio-economic processes driving shrinkage often occur over small geographic scales (Copus et al., 2021). Secondly, shrinkage is examined over a 30-year period, placing focus on long-term population trends, rather than short-term fluctuations. Finally, most studies examining shrinkage remain at the theoretical level without empirical evidence (Wang et al., 2020). We address this literature gap by developing an empirical model examining the factors driving shrinkage.

Name	O'Leary, Daragh
Email	daragh.oleary@ucc.ie
Affiliation	University College Cork
With	Dr. Bernadette Power and Prof. Justin Doran
Title	Incorporating Related and Unrelated Variety into Firm Dynamic Interrelationships in Irish Regions

Abstract

This paper aims to examine firm dynamic interrelationships (relationships between firm births and deaths over time) in Irish regions trough a sectoral lens. This is done by developing related and unrelated variety firm birth and firm death variables which, to the best of our knowledge, have never been applied to any paper examining this topic before. The utilisation of these related and unrelated variety firm birth and firm death variables will allow for not only the examination of the relationships between aggregate firm births and firm deaths over time, but also specifically the relationships between firm births and deaths in related sectors and unrelated sectors over time. This will provide further insight into the workings of competition and multiplier effects originally tested for by Johnson and Parker (1994).

This paper uses an incredibly novel dataset from the Central Statistics Office (CSO) of Ireland concerning business demography data at the NACE 4-digit level with over 100,000 observations in 34 Irish regions between the 2008-2016. A random effects panel approach is adopted in this paper's methodology. Results show that firm births in related sectors positively influence future firm births and that firm deaths in related sectors appear to negatively impact future firm births (multiplier effect across related sectors). Additionally, results show firm births in unrelated sectors negatively impact future firm births while firm deaths in unrelated sectors positively influence future firm births (competition effect across unrelated sectors). These findings have considerable implications for Irish policy concerning entrepreneurship e.g., the Enterprise Ireland organisation, who offer grants and investment schemes for Irish firms and start-ups and approved spending of €43 million to start-ups alone in 2020 (EI, 2020). The results from this paper suggest that investment into firm births in the related sectors of firms in Irish regions would positively influence future firm births.

Name	Öner, Özge
Email	oo263@cam.ac.uk
Affiliation	University of Cambridge
With	Martin Korpi, Daniel Halvarsson, William A.V. Clark, Oana Mihaescu
Title	Segregation, tipping and the role of amenities, crime, and housing

Abstract   Using geo-coded full-population grid-level data for the three largest metropolitan areas in Sweden, 1993-2016, this paper i) estimates the level and pace of ethnic segregation, ii) examines possible tipping points in this development, and iii) gauges the importance of several mitigating or exacerbating factors (such as the mix of housing area tenure type, different types of amenities, and crime). We use OLS and 2SLS to estimate outcomes at two different geographic levels; 250 x 250 square meter grids and SAMS areas (roughly equivalent to US census tracts), respectively. On average, we find that the process of ethnic segregation happens at a pace equivalent to one native (individuals born in Sweden with at least one native-born parent) leave a residential area fallowing a three person increase in migrants from developing countries. Crime levels exacerbate developments and factors such as housing area tenure-type mix and access to various amenities slows it down, however, only marginally so. Using both Monte Carlo and single random sampling, and the twin common methodological approaches as suggested in the literature, we estimate possible tipping points in these segregation developments. In contrast to most other studies in the literature, none of our potential tipping points are however statistically significant when probing their relevance in explaining factual population developments, suggesting a rather more continuous – albeit steeply so – segregation process rather than a structural brake. In terms tipping point methodology, our main findings are that fixed-point estimation is less robust than R-square maximization using small geographical units, and that the former consistently selects for lower tipping point candidates than the latter.

Name	Otto, Anne
Email	anne.otto@iab.de
Affiliation	Institute of Employment Research (IAB)
With	Lars Mewes, Sebastian Losacker
Title	Relatedness, complexity and structural change in German regions: a social sequence analysis approach

Abstract   Smart specialization is at the heart of European regional innovation policy with the aim to improve the composition of regional economic portfolios. Recent studies have contributed theoretical foundations for the smart specialization policy paradigm, building on ideas of related variety, related diversification, and a combination of the relatedness and knowledge complexity concepts. However, an analysis of the current regional economic structure against the backdrop of the relatedness and complexity concepts to identify branching potentials neglects the fact that regions with similar industrial portfolios may have heterogeneous developmental paths depending on their particular histories through path and place dependencies. Our aim is therefore to shed light on the historical co-development of regional relatedness and complexity to provide a better understanding of the formation of current industrial portfolios. We analyze the evolution of the economic structure of 401 NUTS-3 regions in Germany from 1993 to 2018 based on aggregated social-security micro data. We apply social sequence analysis methods to uncover different patterns of regional trajectories in a more systematic way. These methods are employed to map how the coherence of regional industrial portfolios developed over time and whether the diversification of regional knowledge bases into more complex and related economic activities took place. Optimal matching techniques enable us to cluster different sequence patterns. On this basis, we identify five types of regions with different trajectories. We briefly highlight important differences and commonalities between these five types of regions relying on a broad set of regional characteristics. Then, we illustrate these different co-developmental patterns of relatedness and complexity with more in-depth regional case studies. While smart specialization policies support innovation through focusing on the current regional economic portfolio, our results reveal that some regions are characterized by rigid path-dependent processes and others by highly fragile structures. These long-term regional conditions should be taken into account in region-specific innovation and industrial policy, which becomes particularly crucial in the context of recurrent exogenous shocks and vulnerable regional resilience.

Name   Pal, Sarmistha
Email   s.pal@surrey.ac.uk
Affiliation   University of Surrey
With   Marislei Nishijima
Title   Public Transport and Car Crime – An Analysis of São Paulo Metropolitan Region Using Event Studies Approach

Abstract   This paper uses the roll out of different modes of public transport, especially new metro and train connections, in São Paulo Metropolitan Region (SPMR), one of the most crime-prone cities of the world and examine their impact on wide-ranging crime indices. We document that initial crime in SPMR was independent of the roll out of new transport infrastructure in SPMR and exploit the exogenous variation in the timing of the introduction of new public transport (often restricted by land acquisition and other problems beyond the influence of SPMR district authorities) to obtain their causal impact. We employ a flexible event studies approach with various fixed effects to account for district, border districts as well as central districts level omitted factors over time that may also influence these crime indices. Results suggest that access to new metro and train lines that connected the central districts to more remote districts had significantly lowered car crime, both car thefts and car robbery. The crime reduction impact of car theft occurred within a year of receiving new transport while it took ten years or so for a reduction in car robbery in treated districts receiving new Metro and Train connections. No such effect is, however, observed for drug crime, homicide, rape or suicide or when we consider access to any new mode of public transport in our sample. Evidently, the reduction in car theft and car robbery were higher in treated districts with high initial car crime, greater population density, greater educated jobs and also with more than one new Metro/Train connections. We document that the observed car crime reduction effects of new metro/train connections can be attributed to substitution of private cars by new Metro/Train connections as well as income effects arising from the gradual gentrification of treated districts. Results have important implications for the design and operation of public transport system not only in other Brazilian cities, but also beyond its border.

Name	Parr, John B.
Email	john.parr@ucl.ac.uk
Affiliation	University College London
Title	Regional Government and Regional Science
Abstract	The primary concern is with the organisation and functioning of regional government, with no presumption that this is a desirable or undesirable political arrangement. Regional government may assume a variety of forms, depending on the nature of national government. It is argued that regional government has both advantages and disadvantages. This is shown to be the case for the nation as a whole as well as for the individual region. An important facet of regional government is the regional economy. This affects the well-being of the region, and also determines the scope and direction of policies undertaken by a regional government. Consideration is given to the more important issues in the financing of regional government through interregional transfers. It becomes apparent that regional government is underlain by a plurality of influences which are interrelated in a complex manner.

	RSAI-BIS Stirling 2022: Book of Abstracts
Name	Patuelli, Roberto
Email	roberto.patuelli@unibo.it
Affiliation	University of Bologna
With	Guido Candela, Maurizio Mussoni
Title	Policy (De)centralization and the Spatial Interaction Model: Theory and Illustrative Examples

Abstract	The choice of centralizing public policies at the national level or, on the contrary, of decentralizing them at the local level is widely discussed in the literature, which highlights the related pros and cons. Such discussion becomes more complex when public policies are expected to influence spatial flows between administrative units. This is the case, for example, of firm migration, tourism or health-related mobility. Indeed, when flows in space are involved, the simultaneous role of originator and attractor of each spatial unit may imply a range of complex and competing interests at various geographical scales. In particular, in a framework of regional competition, a central (national) policy may be necessary to offset or coordinate the clashing regional interests. We stress that more profound insights into the problems and challenges of (de)centralized public policies can be gained by examining the national-regional choice and in particular by using, as a modelling framework, the 'normative' spatial interaction model. We obtain theoretical results suggesting at which conditions national or local policy implementation is ideal, and provide illustrative examples based on empirical applications.

Name	Peiret-Garcia, Clara
Email	c.peiret-garcia2@newcastle.ac.uk
Affiliation	Newcastle University
Title	Cities in shape: the effect of urban morphology on sustainable mobility accessibility to urban amenities
Abstract	Sustainable mobility has become one of the grand challenges of the 21st Century. The increasing evidence of the noxious effects of urban air pollution and its relation to motorised traffic has contributed to the development of new policies aimed at promoting clean modes of mobility. In Paris, the '15-minute city' envisions a city where basic amenities can be reached within a 15 minute walking or cycling radius. Similarly, Copenhagen has focused on promoting developments that are denser and closer to public transport networks. These policies aim at aligning encouraging sustainable mobility with providing a built environment that favours these behaviours. These policies focus on locality, which has become increasingly relevant in the later years, as the neighbourhood has gained importance as analysis unit. This has also gained momentum following the COVID-19 pandemic. The urban form is key in granting accessibility. It is well known that some urban forms (e.g. denser, higher-rise developments) are more efficient than others (e.g. urban sprawl). Nascent fields such as urban morphometrics allow for quantifying the elements of the built environment using GIS and geocomputation. The conjunction of a newfound interest on local accessibility, the increased awareness of the effects of the built environment on sustainable mobility, and the development of these new techniques allows for the exploration of novel and exciting research paths. This abstract presents the author's PhD project, which aims at providing a holistic view of local accessibility, which will bring together elements from GIS and geocomputation, urban morphology, geodemographics and urban economics, paying special attention to how the urban form affects citizens' sustainable mobility choices. The final goal is to provide policy-makers and urban planners with evidence on what urban models are more suitable for promoting sustainable mobility amongst all citizens.

Name	Picard, Julien
Email	j.r.picard@lse.ac.uk
Affiliation	London School of Economics and Political Science
With	Sanchayan Banerjee
Title	To(o) (m)eat or not to(o) (m)eat? When cultural habits and environmental concerns are in conflict in influencing English diets.

Abstract — In this study, we evaluate the conflicts between environmental preferences and cultural habits when making food choices. While raising environmental consciousness makes meat-based diets increasingly unacceptable, meat is an essential part of English dietary habits. Dietary changes are complicated as consuming meat often amounts to signalling an attachment to one's social group. We posit that social norms hinder the adoption of low-carbon diets, and investigate whether the strength of such hindrances varies with people's place of residence. We further posit that behavioural interventions can help overcome these barriers.

We will administer an online survey experiment to a sample of 5,552 respondents in England. Data collection will take place in March 2022. The experiment follows a 2×2 factorial design. Respondents will be randomly presented with either a familiar menu where the titles of the food items refer to traditional English specialities, or a neutral menu with descriptive titles. Following the literature on habit formation, we assume that priming respondents with familiar names is likely to trigger habits induced behaviours. Respondents will be further randomly allocated to a behavioural intervention or a control group condition. The behavioural intervention consists in the social norm message: "A study published in The Lancet Planetary Health found that the share of British who try eating less meat has increased by more than 50% from 2008 to 2019. People who join this growing movement are becoming climate-friendly by choosing plant-based dishes that are kinder to the planet." First, we will determine whether changing people's perception of social norms to promote low-carbon diets is harder when the available options are made familiar compared to when the available options are presented in a neutral way. Second, we study if there exists a rural-urban divide altering the effectiveness of behavioural interventions promoting low-carbon diets.

Name	Plotnikova, Maria
Email	map26@aber.ac.uk
Affiliation	Aberystwyth University
Title	Out-of work benefit claims patterns and the sub-regional impact of the Covid-19 pandemic
Abstract	Location-specific impact of the pandemic stems from the interplay of local factors: sectoral composition of the local economy, transmission patterns, demographic and health characteristics of the area. Public health and lockdown measures to contain COVID-19 have severely curtailed economic activity particularly for workers in non-essential jobs who could not work online from home. Gig economy workers and the self-employed were the first to be shed when economic activity stalled. One way to measure the economic impact of COVID is to analyze the changes in out of work benefit claims by administrative areas such as local authorities. From March 2020, shortly after the lockdown to contain the spread of Covid-19 was started in the UK, there was a steep increase in out-of-work benefit claims, most prominently Universal Credit. The increase has been far from uniform across space, ranging from 24% to 160% for local authorities; "core" areas experienced greater increase than the "periphery" ones. The aim of the study is to understand and measure the economic impact of the pandemic by analyzing changes in benefit claims by localities. A spatial econometrics model is used to explain the spatial pattern of the increase in Universal Credit benefit claims at the start of the pandemic. The dependent variable is the increase in Universal Credit claims between February and May 2020. The explanatory variables are local authority level data on industry sector, occupation, employment status, demographic characteristics from 2011 Census data for local authorities, as well as at risk of poverty rate for UK local authorities computed as part of Horizon 2020 funded IMAJINE project. The results unpick greater (initial) economic impact of the pandemic in the economic core areas and in the cities versus the periphery in terms of Universal Credit uptake. After controlling for spatial effects in a spatial lag model, local authorities with greater sectoral shares of finance and real estate, hospitality, transport and communications as well with greater share of the self-employed experienced greater increase in benefit claims. The result with respect to the share of the self-employed confirms the supposition of greater Universal Credit uptake by the self-employed at the start of the pandemic before Self-employed Income Support Scheme came into effect. Persistence in benefits uptake has implication for regional inequality and diverging regional recovery patterns because of the very limited spending power of those in receipt of benefits not generating enough demand in the local economy.

Name	Poot, Jacques
Email	jacques.poot@waikato.ac.nz
Affiliation	University of Waikato
With	William Cochrane, Matthew Roskruge
Title	Local labour markets and the initial impact of the Global Financial Crisis and the Covid-19 pandemic on social security uptake in New Zealand

Abstract	Despite its remote location in the South Pacific, New Zealand is tightly integrated in the global economy through trade, tourism, capital & migration flows, and strong digital connectivity. Nonetheless, the country weathered the Global Financial Crisis (GFC) relatively well. More recently, effective public health and economic policies muted the economic impact of the Covid-19 pandemic to date. Despite these favourable national outcomes, there are large differences across people and places in the impact of these exogenous shocks. This paper focuses on similarities and differences between the initial socioeconomic impact of the GFC shock and the Covid-19 pandemic shock. We focus on the uptake of social security benefits in the short-run (first 12 months) after the onset of the shock. We construct a two-wave panel of 66 regions observed in 2008-09 and 2020-21. We link the corresponding social security data with regional characteristics mainly obtained from the preceding census (two years previously). These characteristics yield 142 regional indicator variables across 15 domains. We find that despite the totally different nature of the shocks, the initial impact of the Covid-19 pandemic on benefit uptake was of the same magnitude and spatially remarkably similar to that of the Global Financial Crisis. To identify regional characteristics that point to resilience we adopt stepwise model selection procedures in classical and spatial regression models. However, given that stepwise regression modelling leads to over-fitted specifications, we also use machine learning techniques that tend to generate better out of sample predictions. We find that regions that were most resilient (initially) to the two shocks had two years previously: (1) a low unemployment rate; and (2) a large public sector. Additionally, but with less predictive power, we find that regions had a smaller increase in social security uptake when they had: (3) a high employment rate (or high female labour force participation rate); (4) a smaller proportion of the population stating ethnicities other than NZ European; (5) a smaller proportion of the population living in more deprived area units. We also find that interregional spatial spillovers matter and that resilient regions cluster.

	RSAI-BIS Stirling 2022: Book of Abstracts
Name	Reynolds-Feighan, Aisling
Email	aisling.reynolds@ucd.ie
Affiliation	University College Dublin
Title	Comparative analysis of airline network overlap in the domestic US and European markets
Abstract	The literature on multi-market contact in the airline industry has focused on the pricing implications when firms meet in multiple markets. A recent study has looked at the implications for capacity deployment across US networks (Su and Dresner, 2021). This study focuses on patterns of overlap in the domestic US and internal European markets and offers a comparative analysis using data from 2009-2019. While the literature has focused on route level overlaps, it is argued that it may be more appropriate to focus on airport level assessments, as many carriers compete by offering alternate routings between origin-destination pairs. Measurements of multi-market contact are reviewed. We propose a measure of network overlap that takes account of the importance of an airport within the airline's and its competitors' networks. This Gini index decomposition component is proposed to capture airline network overlap, in the context of the overall spatial distribution of traffic in a continental air transport system. The paper offers a novel application of Yitzhaki and Lerman's (1991) decomposition scheme. We identify the top competitors for the largest airlines and examine how network structures and network overlap have changed over time. We compare the US and European markets and highlight several key distinctions. These are shown to relate to the interactive hub-and-spoke networks structures particularly prevalent in the US domestic market. We examine the seasonal variability in overlap in both European and US markets and report key findings. For the US market, we also examine the aggregate load factors at airports and on routes, and how these have changed as airline mergers have taken place and overlap and scale of carriers' operations have evolved. The US air traffic distribution (as measured by available seats) is shown to be highly concentrated in space, with a high degree of overlap in carrier networks focused on the busiest hub airports. European air transport is more dispersed, but nonetheless focused on the large urban centre and national capital city airports.

References 1. Reynolds-Feighan, A. J. (2007) "Carrier Network Structures and the Spatial Distribution of Air Traffic in the European Air Transport Market, 1996- 2006", Rivista di Politica Economica, 2007, Jan-Feb:245-274. 2. Su, H. & M.E. Dresner (2021) "Multimarket Contact and Capacity: Evidence from the US Airline Industry", Transportation Journal, Volume 60, Number 3, 2021, pp. 258-306. 3. Yitzhaki, S and R. Lerman (1991). "Income Stratification and Income Inequality," Review of Income and Wealth, 37, No. 3, (September) 313-329. 4. Zou, L., C. Yu, and M.E. Dresner (2012). "Multimarket Contact, Alliance Membership, and Prices in International Airline Markets." Transportation Research Part E: Logistics and Transportation Review 48 (2): 555–65.

Name	Rijnks, Richard
Email	r.h.rijnks@rug.nl
Affiliation	University of Groningen
With	Frank Crowley Justin Doran
Title	Regional Variations in Automation Job Risk and Labour Market Thickness to Agricultural Employment

Abstract   Automation has the potential to transform entire agricultural value chains and the nature of agricultural business. Recent studies have emphasised barriers to adoption, as well as issues related to labour market and cultural outcomes of automation. However, thus far, very little attention has been afforded to the regional variations in the potential for automation adoption or threats to agricultural employment. Specifically, research to date does not take into account the local availability of similar occupations including those in different sectors to which displaced workers may transition. Threats to employment and lower numbers of similar jobs locally are particularly salient in rural contexts, given the thin and specialized local labour markets. The aims of this paper are to show the regional distribution of risk to automation for the agricultural sector specifically, and to link these patterns to indicators for occupation specific labour market thickness in Ireland. Using detailed occupational skills data, we construct indices for local labour market thickness conditioned on occupational skills and knowledge requirements. We show that there is substantial regional heterogeneity in the potential threat of automation to the employment prospects of workers currently active in the agricultural sector. This regional heterogeneity highlights the importance of the regional context for designing effective labour market policy in the face of job automation.

Name	Roelofs, Bart
Email	b.j.roelofs@rug.nl
Affiliation	University of Groningen
With	prof. dr. Dimitris Ballas; prof. dr. Hinke Haisma; dr. Arjen Edzes
Title	Structural mobility patterns and COVID-19 incidence: A regional analysis of the second wave in the Netherlands

Abstract   Mobility is among one of the factors that is related to COVID-19 incidence. Many studies included real-time mobility patterns in their analysis of COVID-19 and mobility. The effects of structural mobility patterns however, has not been studied as profoundly, despite the often wider availability and fewer costs related to this type of data. In the research presented in this article, the effects of structural mobility patterns, other regional characteristics and different timeframes are investigated to increase our understanding of the variations in COVID-19 incidence between regions. The lack of effective regional policy in the Netherlands might be driven by the ambiguity in what factors influence regional COVID-19 spread. Many studies to date have identified regional factors related to higher COVID-19 mortality, but there is an ongoing debate about whether all factors are universally applicable. By combining the COVID-19 infection data with a multitude of high-quality datasets in various multiple linear regression models, we present a clear overview of factors contributing to COVID-19 spread in the Netherlands. The results indicated that structural population flows from "high COVID-19 municipalities" are associated with an increase in infections in destination municipalities. Various regional factors are associated with regional COVID-19 incidence and many of the associations vary over time. Socio-economic variables such as average standardized income, the percentage of jobs per sector, the percentage of the population receiving welfare benefits and education levels were included. This study has shown that structural mobility patterns help explain regional COVID-19 incidence. In the light of COVID-19 mitigation measures, structural mobility patterns should be a key factor in the exploration of regional mobility restrictions as an alternative for national lockdowns.

Name	Sanderson, Rachael
Email	r.sanderson4@newcastle.ac.uk
Affiliation	Newcastle University
With	Prof. Rachel Franklin, Prof. Danny MacKinnon, Dr Joe Matthews
Title	Left Behind and Left Out: Seeing (Dis)connections in a Spatially Focused Migration Network

Abstract   'Left behind' places have been associated with growing populism in British society, as rebellious voting is linked to places abandoned to long term stagnation or decline (Ford & Goodwin, 2014; Rodríguez-Pose, 2018). However, the geographies and classification of this concept continue to be unclear. 'Left behind' draws similarities to the process of peripheralization, where places are divided into interdependent groups of core and periphery, with the core growing as resources and actors flow from the periphery (Leibert & Golinski, 2016). One of the four key dimensions of this process is migration. However, less often is the connectivity of a place evaluated through its migration links. This presentation will offer a unique understanding of these geographies through the lens of migration, specifically the role of migration in creating links between places that shape the experience of being left behind in the UK. This will be done through evaluation of the spatial focusing of the migration network, which has not been applied in a UK context. Spatial focusing refers to the concentration of migration flows, reflecting on how dispersed or focused the origins or destinations are for a place within a migration network. The understanding of these flows is important, as overly-focused flows result in the uneven allocation of population and resources, impacting on regional development (Liu et al., 2015). Previous studies used the Gini Index to assess the level of spatial focusing within a migration network (Plane & Mulligan, 1997). This analysis will apply this approach, calculating the Gini indices of total migration flows and individually for 331 Local Authorities within the UK using detailed estimates of migration flows, before extending the methodology to analyse how this varies across different age groups. Overall, it seeks to identify links between spatial focusing and left behind places, to investigate potential causes of inequality.

Name	Schiller, Anita
Email	anita.schiller@lancaster.ac.uk
Affiliation	Lancaster University Management School
With	Dakshina De Silva Aurelie Slechten Leonard Wolk
Title	Tiebout sorting and Environmental Injustice

Abstract — Various mechanisms could give rise to the correlations between income, race, and pollution documented by the environmental justice literature. Using a detailed county-to-county migration dataset and pollution data from the Toxic Release Inventory, we propose an approach to identify residential sorting by income as a possible source of these correlations. We find that differences in environmental quality between home and destination counties matter for households' migration decisions. We also show that households moving to "cleaner" counties are "richer" than households staying back. We interpret those results as evidence of residential sorting in the spirit of Tiebout (1956).

Name	Tranos, Emmanouil
Email	e.tranos@bristol.ac.uk
Affiliation	University of Bristol
Title	Digital economy in the UK: an evolutionary story
Abstract	This paper maps the participation in the digital economy and its evolution in the UK over space and time. Most of the existing economic geography literature which dealt with the spatiality of the internet employed supply-side measures, such as infrastructural capacity, in order to understand the geography of the digital economy and its potential spatial economic effects. Useful as these approaches might have been, they cannot capture the micro-processes and the characteristics of the individual online behaviour. Using large volumes of archived and geolocated web content, this paper models the diffusion of the adoption of web technologies over space and time in the UK. The data and geolocation strategy allow to captures these processes at a very granular spatial scale. The modelling approach, which is based on spatial panels, enables us to depict the role of geography and other cognitive factors which drove the diffusion of web technologies. Although the focus is on a recent historical period – 1996-2012 – the results of the analysis depict diffusion mechanisms which can be very useful in understanding the evolutionary patterns of the adoption of other newer technologies.

Name	Tubadji, Annie
Email	atubadji@hotmail.com
Affiliation	Swansea University
Title	Cultural Entropy, Innovation and Growth
Abstract	The Shannon Entropy Index can be thought of as a measure for the balance in the variety within an entity. While the literature distinguishes between related and unrelated variety of industries, the variety in the cultural endowment of a region has not been studied sufficiently through this index, although it is well known that of course the cultural milieu is intrinsically related to Jacobean innovation and is a complex entity. According to the Culture-Based Development (CBD) paradigm, culture is an entity that is composed of two types of sub-components – living culture (LC) and cultural heritage (CH), each evoking a very different set of attitudes and cultural milieu. The current paper defines as cultural entropy the Theil Entropy Index that measures the balance between the LC and CH in a locality. The aim of the paper is to establish whether localities with more even balance between the two components of culture are more successful in innovation than localities where only one of the components prevails. The findings of this paper show that more balanced composition of the cultural capital is more conducive to patenting and higher concentration of cultural heritage as a component is associated with social innovation.

Name	van Alwon, Jacob
Email	cenjva@leeds.ac.uk
Affiliation	University of Leeds
With	Andy Newing, University of Leeds Stuart Ellaway, University of Plymouth Alan Smith, University of Plymouth
Title	Inferring dwelling occupancy patterns from high temporal resolution water metering data

Abstract   High temporal-resolution water consumption data – collected at the dwelling level via smart metering – could offer a non-intrusive means of inferring dwelling occupancy patterns. Non-intrusive approaches to infer dwelling occupancy (periods of time when a given dwelling is occupied or unoccupied) may have a range of benefits, dependent upon the temporal scale. Our interest is in identifying dwellings that have long-term occupancy patterns associated with tourism, such as second homes or holiday lets available for short-term rental. Specifically, we report on ongoing research that seeks to develop and recommend analytic tools suitable for extracting dwelling-occupancy features associated with tourist dwellings from household level-water consumption data. Those features include periods of unoccupancy, seasonal occupancy patterns and an absence of consumption trends that may be associated with habitual residential routines. We identify and present a series of approaches that offer potential in distinguishing tourist dwellings from their residential counterparts, and in inferring occupancy patterns for those tourist dwellings. We illustrate these techniques using household level data for a sample of households in Devon and Cornwall provided by our data partner, South West Water. This analysis forms part of a larger externally funded 'WatPop' project, which we use to highlight the potential of these analyses.

RSAI-BIS Stirling 2022: Book of Abstracts

Name	Wang, Yichen
Email	117101319@umail.ucc.ie
Affiliation	University College Cork
With	Frank Crowley, Justin Doran, and Marie O'Connor
Title	An Individual and Spatial analysis of Industry 4.0 Job Automation in China.

Abstract   In recent decades, computerization technology such as automation and artificial intelligence are rapidly growing. Automation tends to have substantial implications for labour saving technologies and improving production efficiency. Concerns of technological unemployment are resurfacing during the most recent industrial revolution, often termed Industry 4.0. The potential for individuals to be resilient to automation and artificial intelligence shocks may depend on individual background characteristics such as education, age, and location. China is the world's most populated country, is developing, and its international competitive model is dependent on cheap low skilled employment. The impact of automation from Industry 4.0 in China is likely to be felt far and wide, but this area is not well understood for the Chinese case. In this paper, firstly, we will apply the occupational risk methodology of Frey and Osborne (2013) to identify the proportion of the labour force in high-risk occupations in China. Secondly, we use data from the CFPS (China Family Panel Study) survey which collected over 16,000 observations on Chinese families from 2010 to 2018. We empirically test which individual characteristics drive the likelihood of being at high risk from automation in the Chinese labour force. We also control for an individual's provincial location and their urban/rural status to examine the role played by location. In doing so, this paper is the first to examine the spatial influence of job automation in the Chinese labour market.

Name	Webber, Don
Email	d.j.webber@sheffield.ac.uk
Affiliation	Sheffield University Management School
Title	Regional resilience, path dependency, and local context
Abstract	Do regions following common development paths necessarily experience similar levels of resilience when faced with an economic shock? We consider whether local contextual factors subjugated lock-in forces and asymmetrically effected regional responses to the 2007/8 global financial crisis. Applications of a novel methodological approach to three different measures of resilience (value added, employment, and productivity) across UK local authority districts between 1980 and 2015 reveal that regions following a common evolutionary path do not necessarily respond homogeneously to an economic crisis, and they can experience differing levels of resilience across resilience measures. Our ternary plots illustrate that resilience indicators can be inconsistent, perhaps with the most worrying contradiction being where large falls in employment and value added are accompanied by productivity resilience, which may hide the need for support when governments focus their policies on enhancing productivity. These differences in recorded resilience reflect the effects of a diversity of underlying industrial structures, policy effectiveness, and market forces that respond to prior events, current contexts, and ongoing change in place-specific ways. Development paths and local contexts interact to orchestrate the dynamic spatial economic landscape and shape an area's resilience to shocks. Although the evolutionary economic geography literature emphasizes the importance of lock-in when generating continuity, local institutional and external socioeconomic forces cause difference, prompt change, and lead to asymmetries in regional economic resilience. Understanding the patterns of seemingly conflicting indicators of resilience is paramount for the formulation of appropriate economic policies that enhance regional resilience across its breadth of meanings.

Name	Wei, Zhiwu
Email	zw387@cam.ac.uk
Affiliation	Department of Land Economy, University of Cambridge
With	Davide Luca, Cem Özgüzel
Title	From Potential to Reality: Regional Enablers and Inhibitors of Telework Uptake across European Cities and Regions

Abstract   The advent of the COVID-19 pandemic has largely shifted the work modality across European regions into telework. Utilizing a combination of data from European Union Labor Force surveys, Eurofound Living, Working, and COVID-19 surveys, and the Eurostat database, this paper finds that telework potential and actual telework uptake before and during the pandemic vary both across and within European regions. While no clear relationship was observed before the pandemic, regional telework potential can well predict actual regional telework uptake during the pandemic. Our systematic investigations into driving factors of regional telework uptake during the pandemic suggest that regions with higher shares of teleworkable workers had experienced higher levels of telework uptake during the pandemic. These workers include: those living in urban areas, those in the sectors of financial services, public administration, and education, those with a college degree, middle-aged workers, workers having children aged 0-11, and female workers. In addition, regions more densely populated and with higher shares of households with access to broadband also saw more telework uptake. Overall, these results highlight how telework may exacerbate – rather than reduce – territorial inequality between core and peripheral European areas.

Name	Zhao, Joseph Hongsheng
Email	hz351@cam.ac.uk
Affiliation	University of Cambridge
With	Professor Shailaja Fennell
Title	Shiminhua: The Urbanization of Rural-Urban Migrants in Different Tier of Chinese Cities: A Case Study of The Greater Bay Area of China

Abstract	This article aims to investigate the question of "To what extent does the city tier influence the degree of urbanization of Chinese rural-urban migrants?" Focusing on the aspects of who are the rural-urban migrants in China, why did they immigrate, what are the patterns and impacts, drawing on the concept of "urbanization of people" or shiminhua. Qualitative methods of focused group discussions (FGDs) and semi-structured interviews have been adopted. This research can communicate the local context with a grounded generated theory that fixes the special circumstances of the area as well as provides the possibility for generalization. Focusing on the flow-in destination also provides an opportunity to understand more about the local geographical features' impact on generally popular issues including migrants in a global and regional scale.

Name	Ziogas, Thanasis
Email	a.ziogas@rug.nl
Affiliation	University of Groningem
With	Dimitris Ballas; Mikko Weckroth; Sanna Ala- Mantila
Title	A spatial econometrics approach to modelling individuals' well-being: the case of Helsinki

Abstract   There has been an ongoing debate regarding comparison effects between individuals' utility. Even though the vast majority is focused on the relative (income) position of individuals in terms of subjective well-being, the concept of individuals' comparisons and spillover effects in terms of well-being is unexplored. This paper contributes to the discussion by examining the inter-dependencies of individuals' subjective evaluation of their lives in an urban context. Using survey data from Finland's capital, Helsinki, collected in 2018 at a very low geographical scale (postal codes), we assess the extent to which spatial spillover effects between individuals living in the same postal code area are found. Spatial econometric techniques are employed using individual level data in order to estimate both the inter-dependencies and the spillover effects. For that reason, the spatial weight matrix takes the form of block diagonal where each block represents a postal code area that individuals residing in this block are assumed to interact with each other. The characteristics that render an urban environment more suitable for this type of study (compared to rural areas) is that the population density is higher, the labour market more competitive and the (income) inequality is typically more evident. As a result, status effects and social norms are expected to influence urban residence more often than residence of rural places. Thus, individuals in urban places are more inter-dependent between them. In order to evaluate whether the underlying mechanisms suggested in the paper are indeed taking place in an urban context, robustness analysis is conducted in sub-samples of postal code areas where the aggregated variables of interest exhibit very high and very low values. The contribution of this study is that it will shed new light on the inter-dependencies of individuals' utility as proxied by subjective measures of well-being based on a novel methodological framework. The societal relevance is that it will help policy makers and consumers alike regarding the strength of well-being spillovers and the psychological gains or benefits that the interactions in the postal code area might have.

UNIVERSITY *of* STIRLING

Bridge of Allan and Dunblane

Alangrange

Kenilworth Road

Sheriffmuir Road

Pendreich Way

Pathfoot Building

Henderson St

Main Entrance

Hermitage Wood

Airthrey Medical Centre

Airthrey Castle Yard

Grounds Maintenance Depot

Sheriffmuir Road

Alexander Court

Sports Pavilion

Airthrey Castle

Grass Pitches

Golf Course

Artificial Pitches

Boat House

Airthrey Loch

Games Fields

Sports Centre

Athletics Track

Spittal Lane

INTO

B998

Scottish Institute of Sport

Stirling (A9)

Stirling

Spittal Hill

Stirling Court Hotel

Friarscroft

B998

Property Management Office

Stirling University Innovation Park

Hillfoots Road

Campus map

Key places

1. Macrobert Arts Centre
2. Atrium/Andrew Miller Building (Including ATM, pharmacy and shops)
3. Students' Union
4. National Tennis Academy
5. Cramond Sports Hall
6. Robertson Trust Swimming Pool
7. Sports Centre
8. Golf/Sports Pavilion
9. Stirling Court Hotel

Catering Outlets

- Haldane's Restaurant
- The Bite
- Crush Hall Pod
- Refresh
- Café Bar at Macrobert Arts Centre
- Sports Centre Café
- Students' Union and Starbucks
- Lochside Cabin at Haldane's
- Stirling Court Hotel
- Pathfoot Dining Room
- Urban Grill at Logie Lecture Theatre

Legend

- Main University Buildings
- Stirling Court Hotel
- P Car Park
- Footpath
- Nextbike
- Disabled Parking Bays
- Electric Vehicle Charging Stations
- Bus Stop
- Transport Hub
- P Short Stay Car Park
- No vehicular access - pedestrians only