

# RSAI NEWSLETTER

THE REGIONAL SCIENCE ASSOCIATION INTERNATIONAL

*new series 22 -November 2023*

## CONTENTS

From the Editors	1
Welcome	2
RSAI membership information	2
Young Scholar Interview: Thi Minh Thu Nguyen	3
The 1 <sup>st</sup> Southern Africa Regional Science Association Conference	4
Sustainable Regional Development in Central Asia	4
Center of Excellence: Chinese connections	6
Meet the Fellows: Denise Pumain	6
Theme: Global Value Chains	9
Trade and Supply Chains: An intra-national Perspective	9
Countries and Regions in Global Value Chains – The Need for More Attention to Functional Specialization	10
RSAI Journals	11

## FROM THE EDITORS

The newsletter of the Regional Science Association International (RSAI) appears two times a year and contains information about upcoming conferences and meetings, recent events and publications, and short contributions on current themes.

Mina Akhavan (TU Delft) and Martijn Smit (Utrecht University) form the editorial team. Text contributions for the newsletter are always welcome, and can be submitted directly to Martijn ([m.j.smit@uu.nl](mailto:m.j.smit@uu.nl)) or to Mina ([m.a.akhavan@tudelft.nl](mailto:m.a.akhavan@tudelft.nl)). The deadline for the next issue is 15 April. In particular, short contributions on your current research are most welcome; these can be extracts from articles or reports, or opinion pieces. We also welcome proposals for a piece in the *Center of Excellence* series.

*Martijn Smit*  
*Utrecht University, the Netherlands*

*Mina Akhavan*  
*TU Delft, the Netherlands*



# RSAI NEWSLETTER

THE REGIONAL SCIENCE ASSOCIATION INTERNATIONAL

*new series 22 -November 2023*

## WELCOME

Dear Regional Scientists across the world,

**T**HE COVID-19 PANDEMIC that paralysed the world 2020-22 is fortunately over, and the activities of the RSAI have flourished during 2023. Since the former RSAI Newsletter (in May) I have visited a number of arrangements, but I have, of course, not been able to participate in all the meetings, conferences and summer schools that have been held.

In June, I visited the PRSCO summer school and the meeting in Siam Reap, Cambodia. It was a wonderful experience to be there and learn more about Regional Science in South East Asia.

In July, the first Regional Science event ever took place at the University of Zimbabwe in Harare, Zimbabwe. The local organizers, with the LOC Chair Dr. Tazviona Gambe, had gathered almost 50 participants from several countries in Southern Africa.

As expected, the ERSa congress in Alicante, Spain, was a great success, with over 800 participants onsite and online. The Spanish Section of the RSAI is the biggest in Europe, and I thank the LOC and the Spanish colleagues for a great experience.

In September, I visited China, invited by the Tianjin University. There, I also took the opportunity to visit the leaders of the Chinese Regional Science Section and discuss their plans for activities after the pandemic.

In October, I went to the yearly meeting of the Japanese Section, our oldest and biggest section in Asia. The meeting was held at Nagoya University, and it was great to meet old and new Japanese colleagues and friends.

In a couple of days, I will go to Kuala Lumpur, Malaysia to talk at a conference on Asian cities and thereafter directly to San Diego, California, for the NARSC meeting.

As you can see, being the President of RSAI requires a lot of travelling. Some of you might ask why I don't make speeches or participate online instead. Not least, it would be better for the world's temperature. This is right; many routine meetings can be (and are nowadays) run online. Meeting face-to-face is, in many cases, not at all necessary, but sometimes they are. As a scholar among colleagues, face-to-face contact is often so important for exchanging ideas and discussions and that wonderful feeling when you get new insights and ideas. As



the President of ERSa, meeting the members and building a joint social capital with them is something that should not be underestimated for the coherence and solidarity of an organization.

We live in a time where the news of the world sometimes is very depressing. Still, we must continue to believe that facts and sense will win in the long run and create conditions for peaceful solutions to conflicts. The way that the international Regional Science community is thriving again after the pandemic gives me good hope. No matter what season the calendar says it is – I say it's springtime for Regional Science!

*Hans Westlund  
President of the RSAI*

## RSAI MEMBERSHIP INFORMATION

All RSAI members have online access to Papers in Regional Science (PiRS) and Regional Science Policy and Practice (RSPP), the journals of the Regional Science Association International. Some recent articles from both journals are highlighted in this newsletter.

Members can log in and access full text articles online. In addition to the RSAI publications, members are offered an opportunity to purchase other regional science journals at reduced rates and participate in the national and international conferences at reduced rates.

To become a member and for details on your membership, contact the Executive Director, Andrea Caragliu at [andrea.caragliu@polimi.it](mailto:andrea.caragliu@polimi.it), or visit [www.regionalscience.org](http://www.regionalscience.org).





# RSAI NEWSLETTER

THE REGIONAL SCIENCE ASSOCIATION INTERNATIONAL

*new series 22 -November 2023*

## YOUNG SCHOLAR INTERVIEW: THI MINH THU NGUYEN

*Thi Minh Thu Nguyen won the 2023 Epainos Award at this year's ERSA conference in Alicante. She is a PhD student at Nagoya University, Japan. Mina Akhavan interviewed her for this newsletter.*

*Tell us a little bit about yourself and your career, your relationship with the Regional Science community, and the importance of awards and prizes for early career researchers – since you won the Epainos Award. What is its impact in regional science?*

BEFORE JOINING THE Ph.D. study at the Graduate School of International Development, Nagoya University in Japan, in April 2022, I worked as a lecturer and researcher of political economy at Ho Chi Minh National Academy of Politics (Ha Noi, Vietnam) for six years. My research interests lie in the areas of political economy, sustainable economic development from both regional and firm perspectives, industrial policies, and impact analysis. My general approach uses spatial data analysis, econometric methods, and causal inference analysis to study economic growth, income distribution, structural change, and industrial development policy. My PhD research topic deals with the inter-relationship between place-based policies, structural change, and local economic development in Vietnam.

I embarked on my academic journey with a deep fascination for the intricacies of regional dynamics and development. I believe that aiming for sustainable development requires understanding the mechanisms behind regional development homogeneity and/or heterogeneity. Last year, I presented one of my studies explaining the spatio-temporal dynamics and conditioning factors of provincial income convergence in Vietnam at the 27th PRSCO Conference (Kyoto, Japan), where I had a chance to study the rich and diverse community of Regional Science. My wonderful experience there encouraged me to bravely present my new research findings at the ERSA Congress 2023 (Alicante, Spain) – the most prestigious and long-lasting community of Regional Science. Here, I found a platform to express my insights, establish norms, and collaborate with some of the brightest minds in Regional Science.

It was my great honor to receive the Epainos Prize. The Epainos Prize holds a special place for young scholars in Regional Science. It validates my work and is a crucial networking and collaborative opportunity. Winning it provides me with a significant boost in confidence and visibility within the community.

*As a young scholar, how do you balance research, teaching, and activities outside academia (if any)? In this regard, did the pandemic and the shift towards hybrid working affect your work, and how did you recover?*

Balancing research, teaching, and personal life has constantly challenged all young scholars. As a Ph.D. student who performs the tasks of Teaching Assistant, Research Assistant, and a mother of a 3-year-old kid, I sometimes also struggle with insecure feelings and doubts about myself. However, I try to find motivation in every minor progress I make. While setting clear priorities has been my key, I found that methods such as 25-minute Pomodoro, batching and blocking, and self-reflection journal help optimize my productivity. Applying those methods does not ensure that my academic and personal life always runs smoothly, but they help maintain a necessary balance.



I agree that the Covid-19 pandemic threw a wrench in traditional work methods. My first year of Ph.D. study was overwhelmed with online learning and research. The sudden shift to hybrid working may have confused researchers initially, but it also offered unexpected opportunities for the research community. For instance, finding and connecting with international collaborators has never become as easy as today through online platforms. Amid the pandemic, talented researchers have cooperated to refine the causal inference analysis literature and bring new methods of staggered differences and differences to the academic world. As for me, after adapting and embracing new tools, I now enjoy the merits of working in an online and globally integrated research environment. Online participation in the ERSA 2023 Congress did not prevent me from connecting with the greatest minds of the Regional Science Community, receiving progressive comments on my study, learning, and winning the prestigious Epainos Prize.

*Can you tell us about the challenge of your Ph.D. career and how attending conferences and receiving awards may help you develop a network within the regional science community?*

My research focused on understanding regional disparities in the context of place-based industrial policies and structural change. While the topic was compelling, it also comes with challenges like obtaining local data, testing theories with empirical results, and ensuring the validity of used research methodologies. My PhD journey is like navigating a complex maze, with moments of clarity followed by confusion. However, other Ph.D. students may share the same feelings while seeking answers to their research interests. During my journey, I found myself so lucky to have great advisors and research peers at the Graduate School of International Development, Nagoya University, who never failed to tolerate my ignorance and stubbornness, encourage me that my research is unique, and urge me to show my research at the academic conferences, and of course give me unfailing support.

Attending conferences is vital for young scholars like us because we can find helpful criticism and inspiration from conferences. As for me, presenting my research, receiving feedback, and seeing the impressive work of my peers at conferences were exciting experiences that I always treasure. Earning awards, notably the Epainos Award, was a significant moment too. It was recognition from the academic community that my work was relevant and well-researched. Beyond the prize itself, it introduced me to influential experts in the field, facilitated collaborations, and strengthened my commitment to contributing to regional science.

In retrospect, on our unique journeys, we, young scholars, remember that overcoming challenges is just as important as gaining knowledge. Perseverance and good companions will help us reach where we want!

*Alicante, Spain, where the ERSA 2023 took place.*







*Conference delegates outside the Diamond Lecture Theatre at the University of Zimbabwe*

## THE 1<sup>ST</sup> SOUTHERN AFRICA REGIONAL SCIENCE ASSOCIATION CONFERENCE

THE IDEA TO introduce a regional science chapter in Zimbabwe eventually spread to Southern Africa. Thanks to Prof. Dentinho for his tireless efforts and encouragement. The inaugural Southern African Regional Science Association (SARSA) conference on [Rethinking Development Opportunities and Challenges in Southern Africa](#) was held at the University of Zimbabwe's Diamond Lecture Theatre from 5-7 July 2023. More than 50 delegates attended the conference, including senior and junior academics, postdoctoral fellows, doctoral and masters students, and government officials. Delegates came from various countries, including Zimbabwe, Mozambique, South Africa, Botswana, and Lesotho. The RSAI officials graced the event. The delegation included the Executive Director (Prof. Andrea Caragliu), the current President (Prof. Hans Westlund), the immediate past President (Prof. Eduardo Haddad) and his daughter Sophia.

The conference, held over three days, took different forms. The first day was an academic conference. Dr Chatiza and Prof. Haddad delivered informative keynote addresses for the day. A total of ten scholars got an opportunity to share their research work, and the topics covered different aspects of regional development, including regional economic resilience, climate change, and regional migration challenges. The second day of the conference took the form of a workshop. Prof. Caragliu started the day's proceedings with a thought-provoking keynote speech on import competition and domestic transport costs. This was followed by doctoral and master's students' presentations. Some topics covered were spatial inequalities in transportation systems and job availability versus skills distribution. The audience did not disappoint. The presenters managed to get constructive feedback and guidance from RSAI officials and other distinguished academics and government officials who attended the day's event. Two lectures delivered by Professors Westlund and Caragliu concluded the day. However, Prof. Caragliu's lecture on spatial econometrics was not a walk in the park, yet it left the audience yearning for more.

The last day of the conference was a momentous one. Prof. Chirisa opened the day with a keynote speech on regional science. As it was the conference's final day, only a few researchers could give oral presentations before Prof. Caragliu presented on RSAI, covering its structure, membership, and members' benefits.

Delegates at the conference unanimously agreed to start a regional science chapter in Southern Africa. This led to the historic launch and the birth of the Southern Africa Regional Science Association! Prof. Haddad led the launch proceedings. He created a list of the founding members and called upon steering committee members to add their names and append their signatures. Country representatives did the same before all the delegates got an opportunity. The day ended with a delicious lunch, with delegates getting more time to network.

Where do we go from here? During the inaugural SARSA conference, country representatives devised a five-year plan the general assembly adopted. From Zimbabwe, we are going to Mozambique for our second annual conference. The event is going to be bigger and better, and we are expecting to have delegates from all the Southern African countries. We are expecting delegates from Zambia, Malawi, Namibia and Eswatini to attend for the first time!

*Tazviona Richman Gambe and Joel Chaeruka*

## SUSTAINABLE REGIONAL DEVELOPMENT IN CENTRAL ASIA

THE INTERNATIONAL CONFERENCE «Sustainable Regional Development in Central Asia» was held on 11 and 12 May 2023 at Narxoz University in Almaty, Kazakhstan. Narxoz is known as one of the leading higher educational institutions in Kazakhstan, whose main task is to train highly qualified specialists of the new generation.

The main purpose of the conference was to mobilise and nurture talents across Central Asia and to share the recent developments and methodologies that could be useful for spatial and regional analysis. The meeting targeted graduate students, PhD students, faculty members, and researchers from Central Asia. It covered a wide range of topics, including economic geography, urban and regional development, regional policy analysis, spatial economics, planning, ecological and environmental analysis, political economics, transportation networks and spatial data analysis.

In October 2022, the local organising and scientific committees were created in order to guarantee the successful organisation of the conference. This committee then organized conference promotion, a website, and a submission portal for abstracts. It put together a programme, made logistical arrangements for participants, and coordinated with RSAI representatives. As a result, more



# RSAI NEWSLETTER

THE REGIONAL SCIENCE ASSOCIATION INTERNATIONAL

*new series 22 -November 2023*



than 70 researchers from different regions of Central Asia presented their work at the conference.

The conference's inauguration ceremony began with an address by the President of Narxoz University, Miras Daulenov, followed by Eduardo Haddad, the RSAI Immediate Past of RSAI, and Abdul Shaban, representing RSAI in Asia.

Tomás Dentinho, RSPP Editor-in-Chief, then announced a special issue of that journal on Sustainable Regional Development in Central Asia, to which those presenting at the conference were invited to submit. His presentation was followed by both plenary and parallel sessions, with presenters from Europe, Asia, Brazil, Kazakhstan, Uzbekistan and Kyrgyzstan on topics varying from innovation to tourism. An RSAI representative acted as a discussant in each parallel session, providing valuable feedback.

On the second day of the event, an academic master class was organised, where the RSAI representatives presented important topics to a wider audience. The conference wrapped up with a roundtable called "RSAI 2024 in Central Asia", where prospects for regional science in Asia were discussed. Tomás Dentinho then presented a plan for promoting regional science and development in Central Asia, and those present agreed to create a Regional Science section in Central Asia (CARSA), with several events planned for the upcoming years, and a CARSA journal. A board for CARSA was elected on the spot, including Presidents from Kazakhstan, Kyrgyzstan and Uzbekistan, a CARSA Executive Director, and Editors of the CARSA journal. Foundational signatures were collected from all those present, demonstrating their commitment and support for the idea.

*The conference was jointly funded by the RSAI Nurturing Talent Programme for 2023, RSPP, and Narxoz University.*

*Makhabbat Ramazanova  
Universidade Portucalense, Porto*



*All pictures on this page: impressions from the conference.*





# RSAI NEWSLETTER

THE REGIONAL SCIENCE ASSOCIATION INTERNATIONAL

*new series 22 -November 2023*

## CENTER OF EXCELLENCE: CHINESE CONNECTIONS

*For the Center of Excellence, in this issue we have a report by prof. Paul Snow (Ling Xue) of recent interactions between Chinese scholars of the Regional Science Association of China (RSAC) and the RSAI.*

IN ALICANTE, PROFESSORS Ling Xue (Paul Snow), Tieshan Sun, and Hongmou Zhang from the School of Government of Peking University, Professors Canfei He and Shengjun Zhu from the College of Urban and Environmental Sciences of Peking University, and Professor Zhiqiang Zhang from Nankai University, attended the ERSA 2023 Conference Professor He also chaired the session series “Rethinking Regional Resilience.” Throughout the conference, RSAC scholars enthusiastically interacted with their global peers, fostering fruitful exchanges of ideas, including engaging in discussions with the RSAI President, Professor Hans Westlund.

*RSAC members at the ERSA conference with prof Rodríguez-Pose of LSE*



At that conference, Professor Ling Xue participated in the RSAI Executive Council meeting, where he joined the discussion of the organisation of the 2024 RSAI World Congress in Hungary. Professor Xue participated in the editorial board meeting for the Regional Science Policy & Practice (RSPP) journal, where he engaged in discussions regarding the journal's current status and future direction. Additionally, Professor Xue held a dedicated meeting with RSPP's Chief Editor, Professor Tomás Dentinho, to explore the coordination of a special issue focused on topics related to regional development in China.

In the other direction, prof. Westlund visited China. In Beijing, he was welcomed by Professor Kaizhong Yang, the President of RSAC, and Professor Guoping Li, Chair of RSAC's Board.

*Paul Snow, Peking University*

*RSAC President Prof. Kaizhong Yang (third from the left) and Chair of Board Prof. Guoping Li (third from the right) met with Prof. Westlund in Beijing*



## MEET THE FELLOWS: DENISE PUMAIN

I WAS BORN IN Montbard, a small industrial town in the Côte d'Or, in the French region of Burgundy. The large metallurgical plant, no doubt the distant heir to Buffon's forges, employed some 2,000 workers at the time, for a population of 6 or 7,000 in the commune. Its importance can still be gauged today by the fact that the TGV high-speed train from Paris to Dijon stops here at least twice a day, putting the small town within an hour of the capital. This major industrial site is the only one to have been created by the main Paris-Lyon-Marseille railway line (which initially passed through Dijon), making its own possible contribution to the theory of the structuring effect of transport routes on the location of economic activities.

At the local level, the town exhibited a very distinctive spatial organisation, a real model of spatial zoning of urban activities and segregation of social categories whose representativeness I would discover later in the scientific literature by sociologists and geographers: the bourgeoisie and shopkeepers in the town centre, on the rocky hillock around which runs the Brenne valley, chosen as their residence by the Dukes of Burgundy as early as the 12th century, and by the naturalist Buffon in the 18th century; the factory, which still manufactures metal tubes, was separated from the town by the Canal de Bourgogne and the railway line; its employees' homes were built on the southern slope of the valley, with the engineers' detached houses close to the workplace, a little further up the road the semi-detached houses for the foremen's families (including my parents') and at the end of the road the multifamily dwellings for the workers, similar to the “corons” of mining towns. We walked a lot to get for getting the smallest purchases in the town; therefore, I covered four times a day the distance of one kilometre and a half to and from the primary school, crossing the railway line and then climbing the hill.

As a child of the baby boom generation, I received a good education at school, encouraged by my parents and the local teachers. My career followed the only possible way open through the national education competitive examinations. Escaping the usual destinies allocated at that time to girls in the small industrial towns, I became a boarder student of the Ecole Normale de Filles that trained future teachers at Dijon. There, I could get fleeting but deep impressions from a beautiful regional capital; I greatly admired the architecture and the traces

*Figure 1. Prof. Pumain at the 6th European Colloquium on Theoretical and Quantitative Geography that she co-organised with Thérèse Saint-Julien at Chantilly (France) in September 1989. She writes: “Here, I invited Peter Allen (left) and Wolfgang Weidlich (right). The Brussels school of dissipative structures (Ilya Prigogine) and the Stuttgart group of synergetics (Herman Haken) met there for the first time.”*





of Burgundy's rich past while observing without much using a higher level of urban services. Entering the Ecole Normale Supérieure at Fontenay-aux-Roses was a double chance of getting a first salary and discovering Paris. It took me some time to decipher the most elementary codes of the capital, to perceive the assets of a large city, to measure its power and diversity, and to learn how to take advantage of the metropolitan facilities.

This experience perhaps partly explains my attraction to geography, first as an opening onto the world, then as a scientific discipline. I hadn't travelled much as a child, but the excursions organised by the ENS to Portugal, Ireland (my first plane trip in 1966), and Italy were excellent introductions to reading landscapes. My curiosity about the regularities of the urban hierarchy was aroused at university by lectures given by Pierre George, Philippe Pinchemel and Michel Rochefort. It was further sharpened during the preparation of a master's thesis with Marie-Claire Robic on migration to and from French urban areas between 1954 and 1962, under the supervision of Philippe Pinchemel in 1968.

I succeeded with the competitive examination called "aggregation" in 1969, which assured me of a career in secondary education. Still, I had caught the research bug, and a France-Québec grant enabled me to start a post-graduate thesis on the history of geography in Québec. Spending one year in Montreal and discovering geographies other than that of the French school was a rewarding experience. Reading a Master thesis by Leslie King initiated me about the gravity model that would have helped me so much in my previous analyses of interurban migrations; I also learnt there to use computers with software such as Fortran and SPSS. In 1970, I got a job as a lecturer at the Université Paris 1 Panthéon-Sorbonne, which confirmed my vocation for education and research.

theory to help those involved in spatial planning?

The most comprehensive theory available to geographers and specialists in regional and urban economics at the time was the central places theory. Conceived at a time before the intense phase of global urbanisation that happened in the second half of the 20th century, this theory needed to be supplemented, firstly to take account of the processes involved in locating economic activities that were not solely services to the population (manufacturing, tourism, etc.), and secondly to integrate dynamic processes in order to explain, or even predict, how cities evolve, how settlement systems have been built and why they are so persistent in their hierarchical organisation and functional differentiation.

The question of the scale of observation is essential for theoretical construction. Geographers have long favoured medium-sized scales to understand territories and their evolution. At the time, the data available at the individual level was very scarce or very difficult to access, so I started, through various research programmes and then in collaboration with Thérèse Saint-Julien and PhD students, to bring together theoretical elements borrowed from various disciplines and to collect databases that had to be harmonised, on the demographic and economic development of cities in France and Europe, later on in many large regions of the world (figure 2).

A first achievement was to disentangle the huge and sometimes confusing literature about the distribution of city sizes in systems of cities. The "rank-size rule", as named by Zipf, was a bridge for understanding a structure of inequalities that is common to many open systems. Still, only the stochastic model of urban growth proposed by Robert Gibrat in 1931 offered a convincing statistical explanation that could be tested. This was done in the book called "La dynamique des villes" that I published at Economica in 1982. The statistical description of population growth repartition was a good approximation for coining how urban hierarchies evolve, but the underlining social and economic processes that really explain it had to be specified.

After reviewing the literature on the functional diversity of cities, Thérèse Saint-Julien and I made a first breakthrough by publishing "The dimensions of urban change" in 1978. We explained in this book how the economic profile of cities transformed over time under almost homothetic processes thanks to the spatial diffusion of innovations and how this process could explain the rather long persistency of relative urban functional specialization. We also demonstrated how new specialization could occur when disruptive innovation propagated incrementally among selected subsets of cities that already had the required mix of adaptive assets. Indeed, that work first documented the process that is now called "coevolution" in systems of cities (figure 3).

We mainly used temporal multivariate analysis to process the data at that time. Contrary to economists whom I met in the computer centre of my university, who handled time series, we had to invent methods for comparing cross-sectional tables at successive dates. The validity of our interpretations was more or less ensured by repeating the analyses, comparing different sets of indicators and using statistical tests. On the whole, the principles of the methodology I used to construct the evolutionary theory of urban systems, which I published in 1997, have not changed much: to search for, diversify and harmonise empirical data sets adapted to the questions at stake, to extract information through statistical analysis, to construct models that summarise the regularities in the results, to go into greater depth for interpreting deviations from the models in order to identify geographical specificities and seek to explain them by processes not yet incorporated into the models.

Over the years, I've kept a close eye on theoretical developments, trying to

## Geographical ontology for urban systems

### Scale and urban systems Emerging structural properties

**Two levels:**  
**Cities and**  
**Systems of**  
**cities**



[Pumain D. *Hierarchy in natural and social sciences*, Springer, 2006]

*Figure 2. A multilevel conceptualization of complex urban systems in space and time of social interactions*

The main question guiding my research became apparent when I wrote my doctoral thesis (the French "thèse d'État"), which I defended in May 1980. How can we explain the fact that all the well-connected cities in a given area are growing at more or less the same rate and undergoing very similar qualitative transformations in their economies, societies and cultural and material components over decades while, at the same time, all the local people and institutions involved feel that they are taking intelligent, original and autonomous action? How can we overcome this paradox and build a scientific

## Innovation as key factor of urban adaptive process

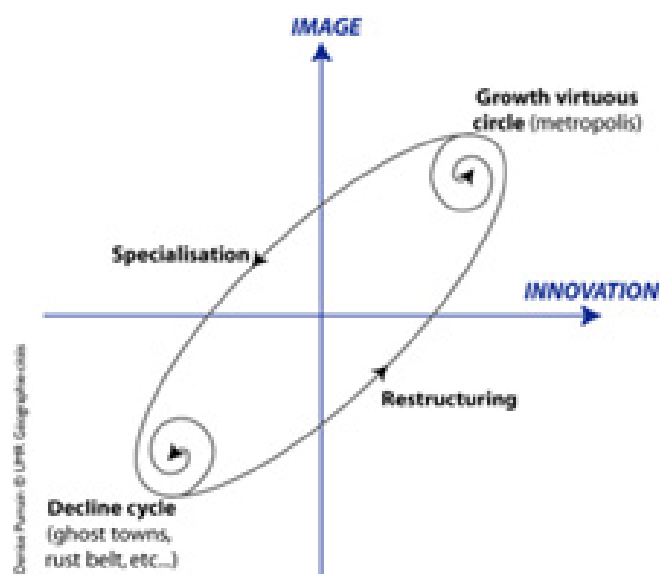


Figure 3. Schematic view of urban dynamics with feedback effects

understand the possible contributions of disciplines offering concepts and tools useful for formalizing urban evolution. The first of these were statistical methods, multivariate analysis, probability, topology, geostatistics and autocorrelation, a very active group of some 80 geographers who were introduced to annually through continuing education courses from the early 1970s onwards. From an epistemological point of view, I closely followed the development of systemic paradigms. During the 1970s and 1980s, I attended the meetings of the AFCET (Association pour la Cybernétique Economique et Technique). It provided me with essential insights into how other disciplines formulated questions relating to the organisation and dynamics of the objects they dealt with. I have used some of their formulations that I felt could be adapted to geography while striving to go beyond simple analogies to develop explanations that make sense for the human and social sciences.

From 1981 to 1986, while keeping a few courses at University, I had a position as a researcher at the Institut National d'Études Démographiques. I took part in two major conferences in 1981, one at MIT on the "system dynamics" of Jay Forrester and the other one in Brussels on self-organising systems. The concepts of "dissipative structures" and "order through fluctuation" and the epistemological conception of self-organising open systems (including the irreversibility of path trajectories and possibly different qualitative structures produced by the same dynamic quantitative processes) were especially appealing. Because the self-organisation theories described processes exhibiting formal similarities to those we had observed when analysing urban change, I got in touch with Peter Allen in 1982 at a conference about entropy at the University of Créteil. We began a fruitful collaboration with researchers of the Brussels School who were developing models for economics and geography. One of their software, written in Fortran, enabled us to test an economic and spatial development model in four large conurbations that Lena Sanders deeply explored in her doctoral thesis. In fact, Ilya Prigogine prefaced the book "Villes et auto-organisation" that I published with Lena Sanders and Thérèse Saint-Julien in 1989 with the Economica publisher.

At that time, we had already developed regular contacts with the Association de Science Régionale de Langue Française (ASRDLF), and we received the French and English publications distributed to registered members. I sometimes participated in the American and Italian Regional Science Association

congresses. Still, I followed more assiduously the meetings of the European Colloquia on Theoretical and Quantitative Geography (ECTQG), which have been held every two years since 1978 (with Thérèse Saint-Julien we organized one at Chantilly in 1989 (see figure 1). I think I'm the only person to have attended them all, including the most recent one in Braga in 2023. The two-week summer schools funded by NATO and organised by the American geographer Dan Griffith in San Miniato in 1982 and in Hanstholm in 1984 were certainly the most inspiring and fruitful meetings in terms of scientific collaboration.

In San Miniato, I was very happy to meet many people who are now

famous scientists in Regional Science and with whom many further scientific and friendly linkages were developed. (They will forgive me for not mentioning all their names on this short notice, but they are close to my heart). I also started a very fruitful collaboration on urban dynamics models with Lena Sanders, who rapidly got a research position and joined the research laboratory created with the help of the French CNRS in 1984. In Hanstholm, we decided to collaborate with the Stuttgart School of Synergetics, mainly Günter Haag and Wolfgang Weidlich, who developed a model enabling comparisons of the spatiotemporal patterns of interregional migrations in 11 different countries. Lena Sanders wrote in 1992 a book about the application of that model to French interurban migrations that was the start of the series "Villes" by the French publisher Anthropos.

The models consisting of systems of non-linear equations were, however, not flexible enough to deal with the complex and evolving spatial interactions in territorial systems. We soon shifted towards models of multi-agent systems. With the help of computer scientists, we designed the SIMPOP series of models that was conceived to explain the hierarchical differentiation of city sizes and their functional geo-diversity. The implemented mechanisms between "agents" (i.e. collective agents that represent individual cities) are mainly: a proactive and selective propagation of innovations waves generated by interurban competition and emulation; a market exchange between urban functions; a hierarchical selection (top-down and bottom-up); the appearance of new urban functions (exogenous in first models); an expanding range of interurban interaction (as a result of space-time contraction); path dependence according to the territorial boundaries that constrain urban interaction. After 2010, with the ERC programme of the advanced grant GeoDiverCity and a team of PhD students and computer scientists, we developed powerful tools for the exploration and validation of models using genetic algorithms and distributed computing on the OpenMole platform.

Meanwhile, I had a rich and pleasant career that, among other marking events, enabled me to be a co-founder of the research laboratory P.A.R.I.S. (1984), director of the UMR Géographie-cités (CNRS 1992-2000), Chair of the Commission on Urban Development and Urban Life of the International Geographical Union (1992-2000), Director of the European Research Group S4 (Spatial Simulation for Social Sciences, 2006-2013). I am also proud to have been as early as 1996 the founder of the first electronic and open journal in



Figure 4. Awarded the Vautrin Lud "Nobel Prize for Geography" in 2010



## UNE GÉOGRAPHE À L'HONNEUR



Denise Pumain, 68 ans, a reçu le Trophée de la femme d'innovation, ce week-end.

*Figure 5. "Femme en or" for innovation in 2014*

Geography, Cybergeog: European Journal of Geography, whose scientific direction I maintained until 2022. I also had the honour of being nominated as Recteur for the Académie of Grenoble (2000–2001), and I learned a lot about the management of education and territorial politics on this occasion.

I feel grateful to the members of the RSAI who have given me the honour of electing me among their Fellows. As a geographer by training, I have found common interests and subjects for discussion with many specialists in French-speaking, Italian and International Regional Science from the start of my career. The interdisciplinary approach to territories has produced remarkable advances in knowledge. I am sure that we shall continue advancing together in the following decades.

*Denise Pumain*

## THEME: GLOBAL VALUE CHAINS

*This issue of the newsletter features two items on a classical yet ever relevant research theme: global value chains. Both contributions link its international aspects to the regional dimension.*

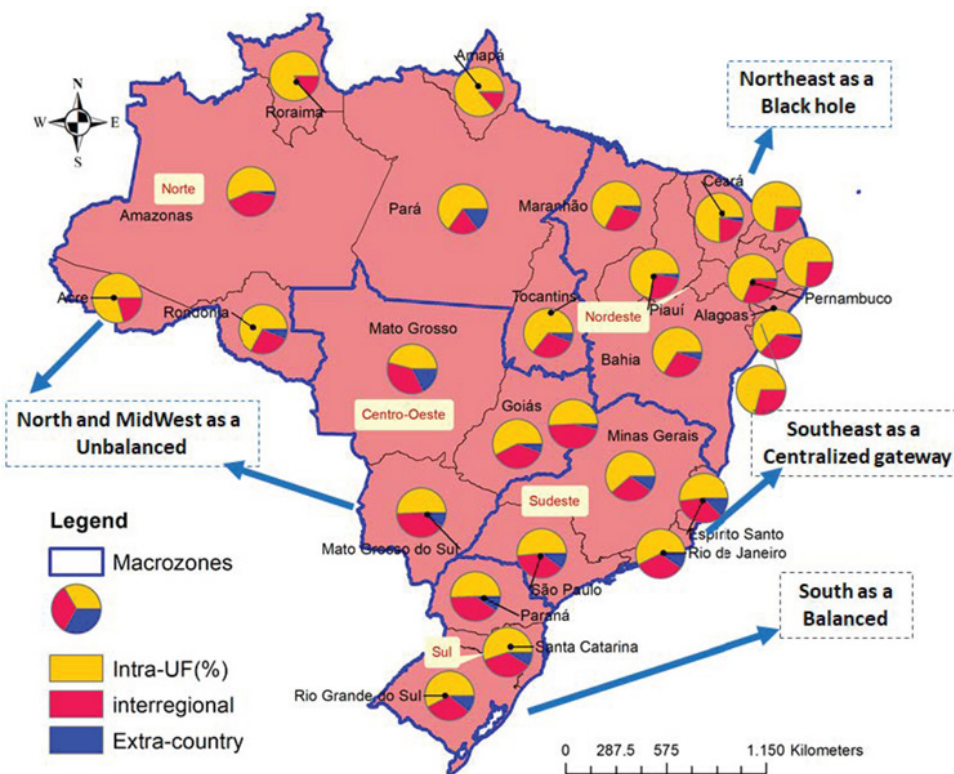
### TRADE AND SUPPLY CHAINS: AN INTRA-NATIONAL PERSPECTIVE

In our increasingly globalized world, trade and supply chain dynamics are undergoing profound changes on both global and regional scales. Regional considerations significantly impact the future of trade, production systems, and logistics. However, one of the primary challenges in studying regional economies is addressing the various spatial scale levels of analysis. Each (subnational) region possesses unique strengths and vulnerabilities that influence trade patterns. Recent disruptions, including the COVID-19 pandemic, extreme weather events, and political instability, have revealed vulnerabilities in Latin America's trade and supply chains at the sub-national level.

These differences in regional capacities can potentially exacerbate regional inequalities, necessitating specific policies to address them. The abovementioned disruptions have underscored the importance of enhancing supply chain resilience and diversification. Subnational disparities in infrastructure and regulatory frameworks further complicate matters, with some regions better equipped to adapt to disruptions than others. This scenario emphasizes the need for coordinated efforts among subnational governments to improve infrastructure, streamline regulations, and invest in technology to bolster supply chain resilience.

The magnitude, length, scope, spatial extent, degree of connectivity and varying spatial scales of trade and supply chains pose significant challenges for empirical studies in regional economics. Initially, one of the key challenges in global value chain (GVC) analysis, influenced by world-systems theory, was explaining the uneven patterns of development based on countries' specialization in different functions or stages of supply chains. Recent studies have associated GVC integration with positive outcomes that drive economic development through various stages of industrial upgrading, assuming that global integration creates comparative advantages and conditions to increase the level of local value-added embedded in trade. However, at the local level, differences in natural resources, infrastructure, labour markets, and regulatory frameworks can vary from one subnational region to another, influencing industrial specialization and the flow of goods and services.

### *Stylized spatial-defined supply chain' value-added trade-based categories.*



Note: (1) Black hole: The black circles indicate internal benefits from integration. Links with other areas are weak (dotted and thinner arrows). There is little contribution to building networks outside (thin arrows). (2) Balanced: Integration occurs inside, between, and outside the space units. The grey circle indicates that the region benefits and consolidates networks with other spatial levels (thicker and continuous arrows). (3) Centralized gateway: The gains are transmitted along the value chains, with connections at all levels (including black holes) to the hinterland and abroad. Thicker and continuous arrows show the governance potential to build networks at multiple scales. (4) Unbalanced: Space units with spatial and industrial concentration potential are unequally integrated. Strong global links and a relative domestic disconnection reduce the potential for internal linkages.



Brazil is a unique case for multiscale analysis mainly due to its economic geography and subnational disparities. Its vast size, population, GDP, and diversity in natural resources create complex supply chains on national and global scales. These aspects lead to a clear core-periphery pattern, with different Brazilian states playing distinct roles in production networks at both domestic and international levels. The southeastern central areas, mainly São Paulo and Rio de Janeiro, often coordinate the domestic value chains – trade flows within the country – by supplying high-value-added products to the rest of the country. In contrast, the poorer northern and northeastern states tend to supply natural resources to global production centers. This specialization results in different trade profiles for regions, some heavily reliant on food product exports while others specialize in high-tech manufacturing and exports.

Trade flow patterns at the subnational level toward final demand, whether interregional or international, reveal distinct value-added trade categories in Brazil (Figure on previous page). Northern and mid-western states specialize in agriculture and mining, contributing more to global value chain integration, and northeastern states have lower connectivity and keep most of the generated value added within the region. The southeastern states concentrate on interregional demand, promoting imports from other subnational areas and acting as key economic drivers and gateways to global markets. Southern states also demonstrate high integration, specializing in primary sectors and industries.

As the literature on global supply chains suggests, trade in value-added activities can drive regional development by creating growth opportunities and generating jobs. As regions engage in higher value-added activities like research and development, design, and marketing, they employ more skilled labour and offer higher wages, leading to economic growth and improved living standards. Specialization in different sectors and activities reduces dependence on a single sector, enhancing regional resilience against economic shocks.

Trade and supply chains are integral to regional economies, facilitating the flow of goods and services, spurring economic growth, and promoting cross-border cooperation. By optimizing logistics, reducing costs, and increasing efficiency, regional supply chains contribute to national prosperity and regional development. Maintaining a well-functioning regional perspective on trade and supply chains remains crucial for sustainable economic success in an ever-evolving global market.

In conclusion, understanding trade and supply chains from a regional perspective is essential for policymakers, businesses, and stakeholders. Promoting local-based strategies that leverage regional strengths, address vulnerabilities, and adapt to changing global conditions are key to economic growth and prosperity in an increasingly interconnected world.

*Eduardo R. Sanguinet, Universidad Austral de Chile  
Carlos R. Azzoni, Universidade de São Paulo, Brazil*

## COUNTRIES AND REGIONS IN GLOBAL VALUE CHAINS – THE NEED FOR MORE ATTENTION TO FUNCTIONAL SPECIALIZATION

Trade has always been important for the economic performance of regions and countries. This importance has not changed and will not change, but the nature of international trade has changed in a way that implies that sound policy advice requires new perspectives.

Trade liberalization and rapidly improving internet-based information and communication technologies have enabled large firms to locate stages of their production processes in different parts of the world. The manufacturing of complex parts and components can take place in regions and countries with

large supplies of highly skilled engineers. At the same time, routine assembly activities can be assigned to places where low-skilled labour is cheap: Global Value Chains (GVCs) have become an important way of organizing production processes. Soon, these GVCs became an object of study, most often in a case study context, focusing on the question of which conditions regarding governance by the ‘lead firm’ and the capabilities of regions could lead to upgrading by those regions within or across GVCs.

It took longer before changes in GVCs and their impacts on e.g. employment could also be studied by adopting more macro-economic approaches. The so-called ‘trade in value added’ literature, based on databases with global input-output tables (such as WIOD, OECD-ICIO and, at the subnational level, EUREGIO), has extensively studied these phenomena over the past decade or so. In a world in which GVCs are pervasive, dynamics regarding the volume and composition of (gross) exports are not very informative when it comes to the contribution of trade to the economic performance of a region. It is the domestic value added in these exports (the difference between the value of the exported products and the value of the imports used to produce these) that matters. More work along these lines seems to be forthcoming. To give an example, my colleague Konstantin Wacker is currently exploring methods to split the quality of products exported by a country into a part due to imports of high-quality parts and components and a part due to quality added to such imports by the country itself. This is part of the Horizon Europe project TWIN SEEDS (led by Politecnico di Milano, see <https://twinseeds.eu/>), which is exclusively devoted to the study of GVCs and their economic and environmental impacts, both at the national and the regional level.

The trade in value-added literature has clearly shown that regions and countries can specialize in industries within GVCs (e.g. one region hosting the financial services required for the manufacturing of cars, another region specializing in metal products manufacturing and a third one being the location of the car industry that does the assembly). In my view, an aspect of the emergence of GVCs that has so far remained underexposed relates to “functional specialization” within industries. Firms in the car manufacturing industry are not necessarily only involved in assembly activities, but often also do R&D, organize the complex logistics of their supply chains, set up distribution channels, provide after-sale services, and much more. These “business functions” (sets of tasks or activities) are no longer necessarily co-located. Economic logic then implies that some regions and countries started specializing in e.g. the R&D function,

*Functional specialization in the global transport equipment industry  
Income earned by fabrication workers as a share of income  
earned by all workers (selected countries, 2008)*





# RSAI NEWSLETTER

THE REGIONAL SCIENCE ASSOCIATION INTERNATIONAL

*new series 22 -November 2023*

while regions and countries elsewhere specialized in the fabrication function. Together with OECD's Sébastien Miroudot, my colleagues Gaaitzen de Vries and Marcel Timmer developed a publicly available dataset that uses data on labour inputs by occupation in each industry of all countries included in WIOD to reveal patterns of such functional specialization, at a global scale (see Timmer et al., 2019, Journal of Economic Geography).

Studying functional specialization in industries seriously opens up several potentially fruitful lines of research. In the EU-sponsored Horizon 2020 project GI-NI (<https://gini-research.org/>), we use this phenomenon to provide new angles on how import competition as faced by workers can be measured in ways that are appropriate in a world dominated by trade in GVCs. In this project, we also use this perspective to study the effects of globalization on labour market inequality. In the TWIN SEEDS project, functional specialization is the lens through which patterns of convergence and divergence between the Western part of the EU and the Eastern part are studied. Among other things, TWIN SEEDS also explores options to study functional specialization using data on Foreign Direct Investment. Studying aspects of functional specialization is most probably also a promising avenue in evolutionary economic geography. Questions regarding upgrading in and across GVCs could be addressed more systematically than in the older case study-based literature. Answering basic questions like "Do regions tend to diversify into other business functions within an industry, or do they generally diversify into other industries while performing the same function?" is not only interesting from a scientific point of view. It is also relevant for policy makers responsible for regional development.

*Bart Los, University of Groningen (Faculty of Economics and Business & Groningen Growth and Development Centre)*

IMAGE SOURCE: B. LOS AND X. YE (2022, GGDC RESEARCH MEMORANDUM NO. 192), BASED ON DATA FROM M.P. TIMMER ET AL. (2019, JOURNAL OF ECONOMIC GEOGRAPHY).

Furthermore, Papers in Regional Science keeps on contributing in the research line of creative industries and culture. The contribution by Velez-Ospina and co-authors on "Determinants of rural creative microclustering: Evidence from web-scraped data for England" (<https://rsaiconnect.onlinelibrary.wiley.com/doi/10.1111/pirs.12754>).

This contribution aims to compare the drivers of clustering of rural and urban creative industries in England in 2019. As a novelty, it proposes a novel way of mapping microclusters using scraped web data, which we employ on a larger geographical area (e.g., an entire nation). Then, using the clusters derived from this analysis they show that drivers of clustering are generally consistent between rural and urban areas. Finally, they use their findings to argue that policies to support creative clusters should include rural areas, and that efforts to support formation of rural creative networks might pay dividends.

The December issue closes the current experience of Papers in Regional Science with Wiley: it has been a very fruitful collaboration. In these years, Papers in Regional Science was able to increase its academic visibility in the scientific field of regional science. Now, a new challenging phase is about to start. From January 2024, Papers in Regional Science will be published by Elsevier and it will transform into a gold open access journal. We all are thrilled about this new possibility since it widely enlarges the scientific horizon of the RSAI association. Let us meet on those pages for the next RSAI newsletter!

*Rosella Nicolini*

IMAGE SOURCE: HERALD FEATURE SERVICE, PHOTOGRAPHER (1931). THIS WORK IS OUT OF COPYRIGHT. WE ACKNOWLEDGE STATE LIBRARY VICTORIA ([www.slv.vic.gov.au](http://www.slv.vic.gov.au))

## RSAI JOURNALS



*In the last two issues for 2023, Papers in Regional Science proposes interesting open access contributions: editor-in-chief Rosella Nicolini would like to draw your attention on a couple of them.*

IN THE WAKE of the research line of the 2023 Nobel prize in Economics, Vicente Rios and co-authors proposes a relevant study on the Quality of Government and Women's Political Empowerment: Evidence from European Regions (<https://rsaiconnect.onlinelibrary.wiley.com/doi/10.1111/pirs.12761>). This study examines the relationship between women's political empowerment and the quality of government in European regions. Their findings show that women's political empowerment raises the quality of government, and that the quality of government also boosts female empowerment.

