

Regional  
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Association

THE GLOBAL FORUM FOR CITY  
AND REGIONAL RESEARCH,  
DEVELOPMENT AND POLICY

# Harmonious Development, Common Prosperity and the Transformation of Cities and Regions

25<sup>th</sup> – 27<sup>th</sup> November 2015  
Zhejiang University, School of Earth Sciences  
Hangzhou, China

#RSACHina2015



Regional Studies Association  
25 Clinton Place · Seaford  
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Tel: +44 (0)1323 899 698  
Fax: +44 (0)1323 899 798  
Email: office@regionalstudies.org  
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HARMONIOUS DEVELOPMENT, COMMON PROSPERITY AND THE TRANSFORMATION OF CITIES AND REGIONS



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Tel: +44 (0) 1323 899 698  
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- Corporate rate is for organisations, university departments, companies etc.

Regional Studies Association

# Harmonious Development, Common Prosperity and the Transformation of Cities and Regions

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RSA China Conference

Wednesday 25<sup>th</sup> – Friday 27<sup>th</sup> November 2015

Zhejiang University, Hangzhou  
China

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Wanda Miczorek

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Welcome,

We are delighted to offer you a warm welcome to the Association's second China conference which this year is being hosted by Zhejiang University in the beautiful city of Hangzhou. This conference builds on a previous event hosted in Beijing with the Chinese Academy of Sciences in 2012.

In 2015, the Association celebrates its 50<sup>th</sup> anniversary. It is therefore particularly pleasing to report our highest ever membership figures. The recently opened Chinese Division, with its project office within the Chinese Academy of Sciences, is thriving with membership growing robustly. In June, at the Development Bank of Minas Gerais (a Brazilian region slightly larger than France), the Association opened its Latin American Division. A project office is being opened there to support the Division's work. We hope to see lots more members from China and Latin America engaging with the Association.

Related to this geographical expansion was the agreement this year to launch in 2016, a new journal called **Area Development and Policy**. This journal will publish work related to the Greater BRICS territories. Uniquely it will allow authors to present their work in their own territorial research voice. The journal has a fully international editorial team and advisory board heavily representative of the featured regions. In establishing this new journal the Association seeks to increase understanding of development in different parts of the globe, and to foster new research collaborations and partnerships.

Two new grant schemes were launched in 2015 aimed at individual and fellowship members. Early indications are that this is a popular initiative. These schemes complement both the Early Career Grant Scheme which has so far awarded £280,000 to 28 emerging scholars and the two PhD students supported by the Association. Five new Research Networks each with £10k funding will be announced at the end of the year.

We continue to work hard in the area of knowledge exchange, running sessions once again within the DG Regio/Committee of the Regions/DG Emploi **Open Days European Week for Regions and Cities** organized for European policy makers and practitioners. More than 700 people attended the RSA hosted University sessions and Early Career Masterclass.


Members often tell us that they join because of the global network that the RSA offers. Our many internationally run conferences are well attended and popular because they offer the chance to present work, discuss ideas with colleagues and to make new research connections. These events depend upon the good will and contribution of many of our members and we must recognise this contribution to the health of the Association and wider academy. At this conference Chen Wang (Cassie) has led the highly competent Hangzhou team. Professors Liu Weidong and Mick Dunford have contributed strongly to the programme development and Ren Qing (Daisy) has offered administrative and marketing support. We are indebted to all those who have made this event possible for us.

As ever, we remind you that any Association can only be as good as its members are active. Do continue to engage with us. Tell us what you would like to do and challenge us to offer more.

All best wishes,



Andrew Beer  
Chair



Sally Hardy  
Chief Executive



Located in the historical and picturesque city of Hangzhou, Zhejiang University is a prestigious institution of higher education with a long history. Qiushi Academy, the predecessor of Zhejiang University, was founded in 1897 and was one of the earliest modern academies of higher learning established in China. In 1928, the academy was named National Zhejiang University. During the war time in 1940s, Zhejiang University moved to Zunyi, Meitan and other places in succession and stayed in West China for seven years. In 1946, Zhejiang University returned to Hangzhou. In 1952, due to a nationwide restructuring of universities, Zhejiang University underwent a reshuffling of disciplines. Some departments merged into other universities and Chinese Academy of Sciences. The remaining departments were divided and developed to become 4 specialized higher education institutions, namely former Zhejiang University, Hangzhou University, Zhejiang Agricultural University and Zhejiang Medical University. In 1998, the four universities sharing the same ancestor merged to form the new Zhejiang University and set a new goal – to develop into a world-class university. In its 118-year history, Zhejiang University has always been committed to cultivating talent with excellence, advancing science and technology, serving for social development, and promoting culture, with the spirit best manifested in the university motto “Seeking the Truth and Pioneering New Trails”.

Zhejiang University is a comprehensive research university with distinctive features and a national as well as international impact. Research at Zhejiang University spans 12 academic disciplines, covering philosophy, economics, law, education, literature, history, art, science, engineering, agriculture, medicine, management and etc. With 7 faculties and 36 colleges/schools, Zhejiang University has 14 primary and 21 secondary national leading academic disciplines.

Zhejiang University always takes initiative in catering for national and regional needs, and exerts itself to become an influential high-level source of innovation and a pool of talents. There have been more than 160 alumni elected members of Chinese Academy of Sciences and Chinese Academy of Engineering. In 2014, research fund at Zhejiang University amounted to 3.121 billion Yuan. As of Dec. 31, 2014, there are a total of more than 46,364 full-time students enrolled at Zhejiang University, including approximately 13,952 graduate students, 8,779 Ph.D candidates, and 23,633 undergraduates. In addition, there are about 5,746 international students currently attending Zhejiang University. Among its approximate 3,437 standing faculty members, 1,474 faculty members have title of professor. Other important facts and figures are as follows: 12 members of the Chinese Academy of Sciences, 17 members of the Chinese Academy of Engineering, 69 experts in State "1000-elite Programs", 41 chief scientists of national 973 projects, 111 Chair Professors in Chang Jiang Scholars Program, and 105 scholars awarded with National Science Fund for Distinguished Young Scholars. With five campuses, namely Zijingang, Yuquan, Xixi, Huajiachi and Zhijiang campus, Zhejiang University encompasses an area of 4,503,741 square meters with school buildings covering 2,308,783 square meters of floor space. The university library holds a collection of more than 6.71 million volumes. In addition, Zhejiang University has 7 high-level affiliated hospitals.

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## **EMPOWERING REGIONAL ECONOMY WITH SPECTACULAR SPACE: MEGA-EVENTS, OVER-DRAFTED CAPITAL, AND MOMENTARY GROWTH IN CHINA'S METROPOLISES**

**George Lin, University Of Hong Kong, CHINA**

Existing literature of regional studies attributes uneven regional growth to the functioning of agglomeration economies, concentration of innovative culture and creativity, and discursive social and institutional environment. Studies of China's regional development have underscored the leading role played by the state top-down and corporatist/entrepreneurial initiatives of localities bottom-up with scanty attention paid toward inter-scalar politics. This study identifies a new and popular practice in which local governments of China's leading city-regions actively pursue momentary economic growth and spectacular spatial development through the hosting of mega-events as an instrument to reproduce urban space for the enhancement of regional competitiveness and advancement of political career. A detailed study of the case of the Guangzhou city-region—the largest metropolis in southern China—has identified an intriguing pattern in which hosting mega-event generated a significant but short-term economic effect as it provided a temporary stimulus to extend/prolong the cycle of regional economic growth (and decline). Practicing event-driven spectacular development is found to have an effect upon the career advancement of the party secretary more than the mayor. Hosting mega-events has been used as a means to create “a harmonious society” and unified social space whereby grievance and discontents are glossed over, marginalized, and oppressed. Geographically, a new urban space has been created for the central city to reassert/consolidate its leading competitive position in the regional and national economy at the expense of the disadvantaged and marginalized periphery. Findings of this research call for a critical re-evaluation of the sophisticated state-space inter-relations in the ongoing processes of regional transformation in the era of neoliberalization and global urbanism.

## **UNPACKING THE “BELT” AND “ROAD” INITIATIVE OF CHINA**

**Weidong Liu, Institute of Geographic Sciences & Natural Resources Research, Chinese Academy of Sciences, CHINA**

In March, 2015, with the State Council's authorization, NDRC, MFA and MC of China issued the Vision and Actions on Jointly Building the Silk Road Economic Belt (Belt hereafter) and 21st Century Maritime Silk Road (Road hereafter). The Belt and Road Initiative is targeted at building a new platform for further opening-up of China and for regional economic cooperation among countries along ancient silk roads, which would have profound impacts on the spatial-economic development of China, and the Eurasian continent as well. Thus, the Initiative is becoming a more and more popular research topic in China, and attracting attentions from scholars in many other countries. This paper will briefly review the notion of Silk Road and discuss its metaphor for modern society, and then try to reveal why China raises the Initiative and what China wants to do with the Initiative.

## **REGIONAL DEVELOPMENT IN THE GLOBAL ECONOMY: TOWARDS A NEW POLITICAL ECONOMY**

**Henry Wai-Chung Yeung, National University of Singapore, SINGAPORE**

This presentation rethinks the trajectories of regional development in an era of economic globalization. It argues for a more dynamic perspective on regional development that must incorporate both endogenous regional assets and strategic imperatives in global industries. Grounded in the theory of global production networks (GPN 2.0), my presentation takes on a new political economy perspective that addresses the role of the state in regional development and its interaction with GPN logics. This perspective also points to different modes of strategic coupling for understanding the changing pathways of regional development. Empirical evidence in my

work has shown that “picking the winners” by the state, as a form of sector-specific intervention, can no longer be useful because successful industrial transformation is increasingly dependent on the strategic coupling of domestic firms with global production networks. In a world economy dominated by cross-border production networks, this national-global articulation has become the necessary mechanism for regional development to be kick-started and sustained over time in most regional economies. While it is now much harder for almost any regional economy to develop fully vertically integrated industries that are internationally competitive, there remains significant room for a new kind of industrial policy promoting domestic firms to tap into the developmental opportunities inherent in most global industries. Developing industrial policy oriented towards promoting a specialized niche in a particular sector or an intra-sectoral segment can make good sense for regional development.

*Session: Sustainable urbanization and development 1*

### **'INFORMAL GOVERNANCE' AND POLICY INNOVATION: A CENTRAL GOVERNMENT PERSPECTIVE ON DEVOLUTION DEALS IN ENGLAND, UK**

**Sarah Ayres, University of Bristol, UNITED KINGDOM**

This paper will examine the role of 'informal governance' in shaping innovations in public policy. Informal governance can be defined as a means of decision-making that is un-codified, non-institutional and where social relationships and webs of influence play crucial roles (Christiansen and Neuhold, 2013). The issue of informality in policy making is particularly timely as public managers seek to manage multifaceted policy problems within contested and uncertain environments. For example, in many countries the recent global financial crisis and associated austerity measures have resulted in a reduction in state capacity that has prompted a new style of political leadership - one that relies less on bureaucracy and formal structures and more on networks and informal relations (Ayre and Pearce, 2013). Informal governance can shape innovations in politics in both positive and negative ways. On the one hand, it can assist in solving policy problems which cannot easily be solved by traditional government institutions, leading to more effective decision making. On the other, it may weaken transparency, accountability and legitimacy by undermining traditional (more formal) administrative structures.

Drawing on interviews with senior Whitehall officials conducted between 2012 and 2015, this paper will examine the role of informal governance in negotiating new devolution deals in England during 2015. The issue of informality in devolution debates is timely as the UK government is proposing a range of 'devolution deals' with core cities, each of which is to be individually negotiated (House of Commons, 2015). This paper explores the impact of informal governance on this process from the perspective of senior public managers in Whitehall. It examines these developments at three levels. First, by looking at innovation of political work forms - how informality has influenced working practices and relationships between Whitehall departments and local partners. Second, through innovation of role perceptions, including the ways that central government officials view and use informality to navigate the policy environment. Third, how informality in new political work forms and role perceptions impact on the development of innovative political visions and policies. This final level explores the complex inter-play between formal and informal governance arrangements and how informality can serve to ultimately shape formal political visions and policies in explicit ways.

*Session: Strategic planning, international investment and metropolitan growth*

### **ECONOMIC GROWTH AND CHINESE INVESTMENT IN AUSTRALIAN HOUSING**

**Andrew Beer, UniSA Business School, AUSTRALIA**

Over the past decade Chinese investment in residential property has been a significant driver of new construction on Australia's eastern seaboard. It has supported innovation in Australia's housing stock as well as employment in the construction industry, while simultaneously helping to fill an emerging gap in housing supply. This paper examines whether such investment could provide comparable benefits for lagging residential property markets. It compares Adelaide and Melbourne to ask, what are the barriers to Chinese investment in Adelaide, what strategies and actions would encourage investment and how could governments maximize the benefits for society and the economy?

## **VARIEGATED GOVERNANCE AND THE RISE OF THE COMPUTER INDUSTRY IN CHONGQING**

**Gao Boyang, Central University of Finance and Economics, CHINA**

**Michael Dunford, Chinese Academy of Sciences, CHINA**

**Glen Norcliffe, York University, CANADA**

In the neoliberal age many commentators have argued that laissez-faire capitalism offers the only route to economic development. The state is portrayed as an obstacle to development, and wasteful in allocating scarce resources. Yet in practice state governance can play a crucial role in initiating development, although the strategies adopted in different settings are necessarily variegated, being framed with respect to local laws, policies, culture, and histories. In recent years, China's spatial governance has continued to evolve. Since China's Western Development Plan was launched in 2000, the central government has encouraged western governments to take local initiatives. An example is Chongqing Municipality and its strategy for developing a notebook computer cluster. These initiatives in some ways resemble Foucault's interpretation of governmentality as a set of organized practices involving ways or thinking, types of rationality and techniques through which subjects are governed and govern themselves. These practices and governance tools reflect however the specific configuration of the Chinese state system and are therefore an example of variegated governance.

## **REGIONAL SPATIAL MISMATCH IN THE SUPPLY AND DEMAND OF THE ECOSYSTEM SERVICES AND SUSTAINABLE STRATEGY, A CASE STUDY OF THE YANGTZE RIVER DELTA REGION, CHINA**

**Wenbo Cai, CHINA**

**David Gibbs, University of Hull, UNITED KINGDOM**

**Yongli Cai, East China Normal University, CHINA**

**Lang Zhang, Shanghai Greenery and Public Sanitation Bureau, CHINA**

The importance of sustainable development can be highlight in this new era associated with the seriousness of environmental problems. Population growth, heavy industrialization, and rapid urbanization have placed a considerable pressure on the global environment and resulted in many serious environmental problems, such as hazards of pollution, deforestation, land degradation, and chemical food adulteration, which are posing a great danger to human living. Sustainable development has emerged as an innovative mode of development when facing these problems.

A region's sustainable development is dependent on the regional sustainability. The regional sustainability is greatly affected by ecosystem service supply and demand in this region. Reduction in the regional sustainability will be caused by the imbalance in ecosystem service supply and demand in the Yangtze River Delta Region in China. This will significantly threaten the sustainable development of the Yangtze River Delta Region which is vital to China's fast growing economy and environment quality. Meanwhile, the spatial differences in ecosystem services lead to difficulties in planning and management for sustainable development in this region. By connecting land cover information from GIS analysis and remote sensing with expert knowledge, the supply, demand and budget in the regulating, provisioning, and cultural services in the Yangtze River Delta Region are evaluated and mapped quantitatively. Moreover, the spatial differences in the supply, demand and budget of ecosystem services in Shanghai, Jiangsu and Zhejiang in this region are revealed by mapping and data analysis. The results show that: (1) there is deficit in all of the three kinds of ecosystem services in Shanghai and in regulating service in Jiangsu, whereas there is surplus in all of the three kinds of ecosystem services in Zhejiang. (2) The high demand in continuous urban fabric and discontinuous urban fabric cannot be satisfied by the supply of ecosystem service in Shanghai. (3) High demand from cultivated land, discontinuous urban fabric and continuous urban fabric cannot be satisfied by the supply of ecosystem in Jiangsu. (4) In Zhejiang, the supply of ecosystem service mainly from forest can satisfy the demand from discontinuous urban fabric and continuous urban fabric.



Based on these results, (1) scientific economic and environmental cooperation mechanisms are suggested to be established among Shanghai, Jiangsu and Zhejiang to improve the sustainable development in the Yangtze River Delta Region. (2) Regular meeting among local leaders need be held to strengthen regional cooperation. (3) Making development policy into laws and reducing the “localism” trend are required. These results can also be used as reference for regional sustainable development policy such as eco-compensation.

*Session: Strategic planning, international investment and metropolitan growth*

## **BRAZIL: FAST METROPOLITANIZATION AND URBAN CRISIS**

**Clélio Campolina Diniz, CEDEPLAR - Universidade Federal de Minas Gerais, BRAZIL**

The urbanization process in Brazil has been very rapid, shifting from a rural to an over-urbanized country in a few decades. Between 1950 and 2015, the Brazilian population has increased from 52 million to more than 200 million (the last official census in 2010 was 198 million). In this period the grade of urbanization (percent of people living in cities and towns) rose from 35% to 85%. Although the number of cities and towns (official administrative and political centers of municipalities) has risen from 1,889 to 5,565, the number of cities with more than 100 thousand inhabitants have increased from 38 to 282, among them 22 urban agglomerations with more than 1 million inhabitants each. From this process the Sao Paulo Metropolitan Region (SPMR) officially reached 19.8 million people. Nevertheless considering the real agglomeration, which includes a huge daily commuting population within a radius of 80 km from the center of Sao Paulo city, the amount of people becomes over 33 million. Similarly, Rio de Janeiro Metropolitan área is over 14 million inhabitants. These are followed by Belo Horizonte, Porto Alegre, Salvador, Recife, Fortaleza, all around 5 million each.

This process of macro-urbanization (Santos, 2009) was conditioned by different reasons. Among them: a) regional inequalities and poverty, that have created a huge process of migration from rural and small towns to big cities; b) agricultural modernization; c) industrial growth and concentration; d) recent changes in the structure of production with the increase of services in products and employment.

These processes of macro-urbanization have created and exacerbated many problems. Among them, firstly, the lack of housing, with part of population living in slums or bad housing conditions that does not have access to sewage and other essential services; secondly, very bad public transportation systems, increasing the time to travel from house to work; third the increase of the numbers of cars and motorvehicles, creating traffic jams and road accidents. It is estimated that more than 40 thousand people die annually by car accidents, besides those who are injured; fourth the increase in criminality estimated as over 60 thousand murders yearly. Most of them are young, male and black, as a reflection of historic social inequalities.

To deliver solutions to these problems, the author argues for more balanced regional and urban planning, oriented by the idea of polycentrism, alongside more inclusive social policies (Diniz, 2009)

*Session: Culture, community and development*

## **RESEARCH ON CONSERVATION AND RENEWAL STRATEGIES OF HISTORICAL DISTRICT BASED ON VITALITY—TAKE JIDU HISTORICAL DISTRICT AS AN EXAMPLE**

**Liang Chen, Southeast University, CHINA**

Jidu historical district is located in the northwest of Jiyuan, which belongs to Henan Province of China. It covers an area of 95.91 hectares and the earliest official records of the district can be tracked back to 584 AD. Since Jidu historical district is the source region of the great Jishui River, the Chinese Empire built Jidu temple in the central of the district to worship the river god. However, with the collapse of feudal dynasties in the early 19th century, the old religious function is no longer needed. The new modern life requires diversified function that Jidu historical district can not meet temporarily, so the district decayed and only Jidu temple is well preserved as a national culture relic protection unit.

Historical districts including Jidu is the most complete and abundant areas where city culture preserves. In the wave of urbanization, historical districts are facing the pressure of physical environmental protection and modern function requirement. Early planning studies of historical districts prefer to emphasize the protection of physical entity, which unilaterally neglect the fundamental needs of users. Inappropriate planning measures cause various problems of historical districts, including development stagnation, function decline and vitality weakness.

Through theoretical and practical research, this article puts forward the vitality concept of historical district, choosing substance, culture and user(human) as the essential elements to describe how historical district's vitality is stimulated. Seen historical district as an organism, these three elements are closely associated and interaction each other. The role of each element is explained in the further study, also the dual natures (dominant and latent) of vitality is clarified.

Based on different users, "dominant" vitality which represents the demand of survival and "latent" vitality which represents spread can be derived. By investigation between different users, it is clear that the most closely related factors enhancing vitality are the representativeness and completeness of physical entity as well as the influence degree and recognition degree of culture. The conservation and renewal strategies of historical districts are proposed based on the analysis result.

In the practice of Jidu historical district conservation, these strategies are properly used. The association between "dominant" and "latent", also the correspond between "physical entity" and "culture" are analyzed under the premise of fully understanding the development problems in Jidu. From the perspective of stimulating local vitality, the conservation and renewal strategies above are put forward, including specific planning measures of pattern promotion, culture relic conservation, village renewal and cultural inheriting.

*Session: Transport investment and planning*

## **IS HIGH-SPEED RAIL MAKING AND BREAKING CHINESE CITIES? AN ANALYSIS FROM A USER PERSPECTIVE FOR SUSTAINABLE URBANISATION**

**Chia-Lin Chen, Department of Urban Planning and Design, CHINA**  
**Robin Hickman, University College London, UNITED KINGDOM**  
**Biao Wei, City Planning and Design Academy, CHINA**

Colin Clark's aphorism— "transport: maker and breaker of cities" (Clark, 1958) illustrates well urban transformation in Chinese cities through massive investment in transport infrastructure involved different modes, e.g. metro transit, highway, and airports. Among all, high-speed rail (HSR) development at the unprecedented speed is significantly shaping the territories of Chinese cities and regions on multiple spatial scales, e.g. city-regional, urban, and local. China has developed the largest HSR network in the world in a relatively short period of time. By 2020, the Chinese HSR network is expected to connect all the provincial cities and those cities with a population of over half million (Zhang et al., 2010) through a network of approximately 18,000 km, amounting to more than half of the overall length of rails in the world. Nearly 250 new high-speed rail (HSR) stations with speeds at 200-250 kph had been planned and built. The majority of HSR stations are located in the secondary cities and largely situated outside the existing city centres.

Unlike Europe, where the urbanisation process has been highly stabilised and population growth has developed over decades and centuries, Chinese cities are catching up and experiencing an unprecedentedly rapid urbanisation process. In this vein, local governments have expected intermediate HSR stations to become focal points guiding new town development around HSR hubs. However, from a relatively short term period of development, these HSR stations have commonly encountered critical problems i.e. accessibility and interchanges for users from other parts of cities. In addition, the large-scale HSR hubs have created a clear severance with its surroundings, which makes them difficult to develop from a transport node to an emerging place (Bertolini, 2008). A worse situation could possibly be an inaccessible HSR hub and a waste of land that is unable to attract expected development. Therefore, this paper argues that the HSR stations should play a strategic role in a wider city regional spatial development as well as at the urban and local levels. Meanwhile, the effective integration of transport and urban planning/design of a HSR hub, which is closely associated with

user experience of interchanges and accessibility, is critical to the development of sustainable urban development.

This paper examines the HSR development in China and analyses its current practice and issues from a user perspective based on recent studies. There are four main parts. Firstly, based on existing literature, a development model of Chinese HSR systems and its relationship with Chinese urban form will be characterised. Secondly, this paper draws on a recent study (Hickman et al., 2015; Chen et al, 2015) assessing the instrumental and affective experiences of the interchange from the user perspective. Surveys were conducted from three HSR stations: Beijing South, Chengdu East and Suzhou North, representing three types of HSR stations, i.e. national capital, regional capital and sub-regional city. Thirdly, following the survey findings, Hangzhou East HSR station, a regional capital of Zhejiang Province, will be analysed as a case study (Chen and Wei, 2013) to illustrate the accessibility dilemma inherently created by its remote HSR location. Finally, key implications will be made for future research and policy making.

*Session: Sustainable urbanization and development 2*

## **PLANNING IN THE FACE OF 'DEEP DIVISIONS': A VIEW FROM BEIRUT, LEBANON**

**Angelique Chettiparamb, University Of Reading, UNITED KINGDOM**  
**Christine Mady, Notre Dame University, LEBANON**

It is difficult to overstate the complexity of a project that aims to articulate a set of planning theories that speak to the realities of the South-East as differentiated from the North-West. This is for the simple reason that such a category is hugely diverse with situations on the ground spanning the entire spectrum of relative affluence to extreme poverty and relative harmony to 'deep differences' (Watson, 2006: 31). These divisions are also cast along a variety of cleavages each with its own particular dynamics which in turn are compounded by numerous combinations of factors creating local uniqueness that defy easy generalisation. This article discusses planning in the global South-East while focusing on the specific context of social divides, political turmoil and conflict situations. The article proposes a five-ways framework based on political science and planning theories to analyse such contexts. The five-ways framework encompass the judicious use of commerce to 'soften' the hard edge of very narrow definitions of identity, the promotion of place based interests and identities (including a national identity) that can help transcend divisions, the nurturing of various interest based identities that can potentially bring various factions together; the promotion of a culture of negotiation and dialogue wherein differences can be sorted and finally the creation and nurturing of institutions that can facilitate or stabilise top down or bottom-up initiatives.

The case of Beirut, Lebanon, a city that has undergone several episodes of internal and external conflicts resulting in a society splintered along sectarianism is examined. Three case studies of open urban spaces – the flower market, the farmer's market and 'the stairs' - together with their public activities are analysed using the five-ways framework. The discussion indicates how economic liberalism that is prevalent in countries of the South-East, along with place-based identities, interest-based identities, consensus orientated processes, and institutionalism might facilitate a cultivation of deep values away from a narrowly constructed identity. The article argues that planners should understand the options for positive action that aim to bridge deep divisions and suggests the five-ways framework provides a reference for contextualising in different ways to suit particular contexts. Therefore, the framework is not necessarily restricted to the South-East but could be applicable to any context which manifests deep divisions.

The central question for planners working in societies defined by 'deep differences' might be how a civil society can be forged when non-factional bonds of kinship, religion or language are not easily available and when existing narratives and experiences are unhelpful? Civil society is often seen in opposition to and sometimes a substitute for national and state institutions. Such a view arises particularly when civil society is seen as the answer to the failure of the state i.e. when state institutions cannot or will not deliver to the needs of citizens (Chettiparamb, 2006). The cases above present ways in which entrenched sectarian identities might be creatively bridged through the ideological active use of place, interests and materialities in practical projects. The planning of such projects from the bottom-up or top-down is therefore an enterprise that planners can identify with. Whilst it cannot be claimed that such initiatives will inevitably herald the end of

violence and sectarianism, it can certainly be claimed that they set the scene for ideas and attitudes that can accommodate the other.

The 'bridging enterprises' in the case studies presented build from materialities that are innately place-centred and people-centred thus evoking a geography and history that are wider than sectarian divisions. The judicious, but nevertheless ideological synthesis of enterprise, geography and history through specific materialities is of importance to planners and planning, in that it demonstrates the possibility for positive and meaningful action in 'deeply divided' societies.

*Session: Universities and spatial development*

## **THE ROLE OF UNIVERSITIES, PUBLIC RESEARCH AND TECHNOLOGY DIFFUSION AND TRANSFER IN ECONOMIC DEVELOPMENT**

**Onyishi Christian, Federal College Of Education Eha-Amufu Enugu State, NIGERIA**

Scientific research in all its forms is the cornerstone of a nation's social and economic development. History has amply demonstrated that sustainable development and self-sustaining progress of any country has generally followed the development and applications of science and technology (S & T), controlled by and responsive to the needs and endowment of a country. Though geographical and human size of a nation may be indicators of its potential power, the real power of a country is measured today in terms of its economic progress, that is, the proven capacity to translate scientific knowledge through its judicious and determined exploitation of technologies in economic productivity. Concretely, many developed countries of the world today achieved their level of development through the adaptation of technology and development of an efficient (S&T) capacity. In essence, human and national sustainable development are determined largely by the level of indigenous and endogenous scientific and technological research, the communication of research results and on the knowledge acquired and brought to bear on policy making, programme formulation, project implementation, monitoring and impact assessment. Consequently, any society without indigenous and endogenous S & T research capacity and capability and high level of literacy cannot but continue to remain underdeveloped. The role of universities and public research institutes in the development of technology and national innovation systems has further been amply documented in extant literature. It has however been observed with respect to Nigeria that the society lacks an in-depth understanding of the role of S & T in national development plans. As with other developing countries, especially in sub-Saharan Africa, it is argued that research in Nigeria's institutions of higher learning comprising the universities, polytechnics and colleges of education has yet to make a real impact on the technological advancement of the country and the socio-economic well-being of its citizenry. Such factors as inadequate and irregular funding, poor motivation, poor or obsolete research infrastructure, brain drain and rising workload resulting from deteriorating staff/student ratio have been identified as constraints hampering the realization of research goals in the higher education sector in these countries. These constraints, it is argued, have also generally led to low research productivity. The need to fill yawning gaps in such critical areas as funding levels, capacity building (including ICT requirements), research focus or specialty and tertiary institution-industry collaboration among others has therefore been canvassed, as part of strategic national research and development (R&D) planning. Such factors are not in the least irrelevant for the discussion of the problem as acting singly or conjointly they can pose serious impediment to the development of an effective science and technology programme. They are however limited in their explanatory utility. This paper therefore seeks to extend the conversation by exploring the limitations of science, technology and innovation (STI) programme of a developing country such as Nigeria within the global competitive game.

## **THE SPATIAL DISTRIBUTION OF MOUNTAIN REGIONS AND ECONOMIC REGIONALIZATION IN CHINA**

**Yiping Fang, Institute of Mountain Hazards & Environment, CHINA**  
**Bin Ying, CHINA**

China is a mountainous country. Regionalization of economic development disparities is able to efficiently visualize and present the complex situations. The study has three complementary sets of objectives: to quantify the area of mountain regions, to identify spatial distribution of mountain regions, to typify and regionalize economic level of mountain regions in China. Firstly, we establish the classification system of mountains based on criteria both altitude and slope. And following the EU delineation of the mountain area, a county (or municipality) had to have at least 40% of its area within the area delimited as 'mountain'. Secondly, we formulate the integrated index associated with economic base, residents' income, and growth potential to evaluate economic disparities in mountain regions at county scale. Thirdly, we use cluster analysis in ArcGIS 10.2 to regionalize mountain economic regions. The results show that mountain counties cover 7200 thousand km<sup>2</sup> (74.9% of the total area) of the study area are inhabited by 400.5 million people (29.2% of the total population) in entire China. According to the assessment system of economic development, we divide economic level for mountain regions of China into four types at the first level, and into 23 sub-types at the second level.

## **MEASURING REGIONAL SUSTAINABLE DEVELOPMENT USING FLAG MODEL: A CASE STUDY OF REGIONAL DEVELOPMENT IN JAMBI PROVINCE, INDONESIA**

**Akhmad Fauzi, Bogor Agricultural University, INDONESIA**  
**Novita Erlinda, Bogor Agricultural University, INDONESIA**

One of the challenging issues in regional economic development is how to balance economic objective with environment and social objectives. Utilizing composite indicators to represent the achievement of sustainable development is one way to address such an issue. Alternatively, one can employ a simple indicator which provides information on how the status sustainable development has been achieved such as using Flag approach. The Flag model which was developed by Nijkamp and Ouwersloot (1998), is a color-coding method of indicator based on critical threshold values set by policy goals or exogenous constraints. The color coding ranging from green which indicates no concern for development, to black where the further development should be stopped. This paper presents a study of regional economic sustainable development indicator using a multi criteria method FLAG model. The criteria being used are economic, social and environment criteria. The aims of this paper is to provide an evaluation framework that can be used for assessment of sustainable regional development using multi criteria linked to development scenarios set by stakeholders. This study was carried out in Jambi province in Indonesia where balancing sustainable development is constrained by the fact the majority of the regions is conservation areas. The study employs four alternative policy scenarios for regional sustainable development i.e., business as usual, development based on regional competitiveness, development based on local resources, and regional development based on non-extractive scenario. These four scenarios were then assessed under two different assumptions of sustainability, i.e., weak and strong sustainability assumptions. The weak or moderate sustainability assumption uses a relatively wide range of threshold values for all economic, social and environment indicators, while the strong sustainability is the opposite. The study shows that under weak or moderate sustainable assumption more yellow Flags were obtained, while under strong sustainability more green flags for each policy alternative was obtained. The study shows how the trade off among policy scenarios must be faced by policy makers in the region either to pursue high economic growth at cost of environment or vice versa. Lesson learned for policy analysis of regional development can be drawn from this study both for scaling up to national level as well as other regional development studies.



## **GOVERNANCE TRANSITION IN THE MARKET REORIENTATION OF EXPORT-ORIENTED FURNITURE FIRMS IN THE PEARL RIVER DELTA, CHINA**

**Tianlan Fu, Hong Kong Baptist University, CHINA**

**Chun Yang, Hong Kong Baptist University, CHINA**

In face of the shrinking demands in the Western advanced markets in the aftermath of the 2008 global finance crisis, the export-oriented firms in China have tended to engage in the transition from exporting their products to the Western customers to selling in China's domestic market. The process of market reorientation and subsequent impacts remain understudied. Taking the export-oriented furniture industry in the Pearl River Delta (PRD) as a case, this paper argues that the market reorientation of furniture suppliers has been hindered by the captive governance controlled by global brand buyers in the export-oriented value chains. The study is conducted based on the intensive field investigation, particularly in-depth interviews in Dongguan, one of the well-known furniture clusters in the PRD during the period of March 2013 and August 2015. It is found that in order to tap into China's domestic market, competitive suppliers have attempted to develop close collaborations with domestic distributors that are more familiar with the needs of Chinese customers. The emerging relational governance has exerted significant impacts on the expansion of the export-oriented value chains. The paper could enrich the literature on the rise of emerging markets in the Global South in the post-crisis global economy. It urges more case studies of various export-oriented sectors to better understand industrial transformation in developing regions/countries in the contemporary globalization.

## **GOVERNANCE FOR KNOWLEDGE TRANSFER IN THE SINO-GERMAN SMES INDUSTRIAL PARKS IN CHINA: A CASE STUDY FROM A PERIPHERY CITY**

**Wenyong Fu, South China Normal University, CHINA**

SME sector serves as the backbone of the European economy, contributing to two thirds of the total employment and half of the value-added of EU business. Hit by the financial and debt crisis, however, the SMEs have encountered massive market downturn, seeking solutions to adjust to global demand shift from north to south. Under such circumstance, a comprehensive EU-China investment agreement (the BIT) has been reached in the beginning of 2014, aiming to improve the access to China's vast market for EU investors. Following this, many Sino-European parks, especially Sino-German parks, has been established, mostly in the form of inter-governmental collaboration—which is different from the previous industrial park organization led by the Chinese government alone. In this paper, the Sino-German Industrial Park located in a periphery city in the eastern part of Guangdong is used as the case study. In this new model of industrial park, outward investment is dominated by German SMEs and the governance to support their investment is led by private companies and related support agencies. By developing a multi-agent governance framework that involves the private sector organizations, support agencies and governments from both host and home regions, I seek to provide deeper understanding on the governance-related aspects on how actors in the periphery cities establish and learn from global pipelines. Using a triangulation methodological approach, research methods include secondary data compilation, in-depth interviews, and participatory observation. The grand project for the Sino-German Industrial Park is launched and developed by a private company, which is co-financed by the key members of the local metal industry association in the periphery city. As the park is certified as the pilot project by the national government from both China and Germany, the entrepreneurs in the project actively search for opportunities to acquire both policy and financing support from the public sector. It is thus concluded that this private-led way of park development results in a flexible but meanwhile transitory governance structure that relied on continuous interpretation of the business environment and negotiation with public sector. On one hand, this form of governance enhances the trust for German investors in the process of knowledge transfer. Because it can be supervised by local metal industrial association through dense local network, and further guaranteed by the park development company as a procurator to deal with the government once IPR conflict issues emerge. On the other hand, the flexible governance enables a dynamic process of learning by doing, which somehow overcomes the locational disadvantage with little prior experiences in attracting FDI. Overall, the

private-led governance for industry park development has leveraged on the local resources and stimulated the active learning mechanisms to learn from the global pipelines, which gives the periphery cities certain institutional advantage in the competition with core cities.

*Session: Land and city development*

## **INSIDE THE OUTSIDERS' INFORMAL SETTLEMENTS IN BEIJING, CHINA**

**Lara Ling Ge, The University of York, UNITED KINGDOM**

**Sabrina Hongxia Chai, The University of York, UNITED KINGDOM**

**Junfu Li, Beijing University of Technology, CHINA**

Along with the process of rapid urbanization and inner population migration, the unaffordable housing price and inadequate housing supply are increasingly being urbanised too. Besides, the Chinese household registration (hukou) system has been used as a basis for providing urban services (Wu, 2002). This means even migrants reside in cities, they become 'outsiders', excluded from benefits that local residents enjoy, related with housing subsidy, stable employment, health care, etc. (Chan, 2009; Li, Li & Chen, 2010).

In this sense, unprecedented substandard housing sprawl in and around Beijing, with astonishing facts that millions of migrant workers living in underground basement; urban villages, and subdivided flats (group renting), etc.. In addition, Beijing, serving as the capital city, takes more challenges with high population density but limited land and housing resources. As essential part of urban inhabitation patterns (Davis, 2006; Milbert, 2006), informal settlements arouse a major concern of Beijing government: On one hand, informal settlements make up for the inefficiencies of public land management and provide millions of migrants with affordable and buildable shelter; on the other hand, informal settlements are associated with problematic issues such as inappropriate infrastructure, insecure land tenure, illegal nature, spatial segregation, inequalities and social exclusion, etc.. However, both theoretical and empirical studies on migrants' informal settlements in Beijing are limited.

To inside the outsiders' settlements in Beijing, this study reviews urban governance on informal settlements' development from worldwide and China context to provide the theoretical foundation; then it will examine the key reasons behind the informal settlements in Beijing including the hot debate within authorities regarding whose responsibility to accommodate this group of dwellers. The initial fieldwork will try to find out patterns of informal settlements components in Beijing (including patterns of movement, land use, ownership, control and occupation etc.) and process of their formation and transformation, as well as the underlying relationship among regulation, informality and transgression. The further fieldwork aims to provide empirical evidence through interviews with policy makers, contractors or property owners; conducting surveys with informal settlements dwellers; as well as ethnography including in-depth interview and observations of their life in informal settlements. The study will also seek to offer some recommendations to policy makers by drawing some lessons from other countries, so as to better accommodate the 'outsiders'.

*Session: Industry, Innovation and R&D Networks*

## **REGIONAL AND STRUCTURAL ANALYSIS OF MANUFACTURING INDUSTRY IN TURKEY**

**Ferhan Gezici Korten, Istanbul Technical University, TURKEY**

**Burçin Yazgı Walsh, Istanbul Technical University, TURKEY**

**Sinem Metin, Istanbul Technical University, TURKEY**

The geography of manufacturing industry has been changing due to the technological development, flexible production, reducing transportation cost regarding the new specialization and distribution process in the world. While manufacturing industry production has been moving from developed countries to the relatively less-developed ones, which have become the emerging economies in the last two decades, the concentration of these activities within the countries has always got the attention of researchers. On the other hand, not only the geographical shift but also structural shifts of production have increasingly been important phenomenon of the

21st century. It is known that the level of technology and innovation makes significant contribution to the regional economic development.

Determinants and impacts of manufacturing agglomerations have created a wide literature based on different case studies. Some researches have focused on sector-specific approach to explain the differentiation of determinants. Moreover the structural changes of industry need to be investigated regarding the relationship to the spatial differentiation. The aim of this paper is to explore how the manufacturing industry due to the technological level distributed across the country and why some regions have becoming main concentration areas for manufacturing activities and especially high-technology ones. In order to find out the answers of these research questions, we run both global and local regression models based on the employment data of the provinces of Turkey in 2012. It is expected that the results would point out that the reasons of agglomeration may differ in different location.

*Session: Culture, values, mentalities/housing, regional development*

## **REGIONAL DEVELOPMENT, SENSE OF PLACE AND BELONGINGNESS - A SWEDISH PERSPECTIVE**

**Lena Grip, Karlstad University, SWEDEN**  
**Ida Grundel, Karlstad University, SWEDEN**

In Sweden discussions on regional identity and regional belonging have become more and more integrated with perspectives of the meaning of culture and local communities as important for regional development and growth. In local, regional and national policies cultural diversity is emphasized as a potential for development and growth. Sweden is today a multi-cultural society where its citizens have backgrounds from all over the world. However, there is a distance in regional politics between policies of cultural diversity for local and regional development and the actual citizens. It is therefore not clear how policies of cultural diversity are to be applied in practical regional planning. Research shows that immigrants in Sweden often have a feeling of exclusion and that they do not belong there and that they aren't accepted as they are. There seems to be a gap between policies and the actual situation in everyday life of inhabitants in Swedish regions.

Research on sense of place and migration is extensive, but there is still not much done on the influence of place in relation to issues of integration. The meaning and importance of place has not been emphasized enough in immigration studies. Therefore, this paper will – from a Swedish perspective - discuss the sense of place and belonging related to a person's identity and background, with the aim to contribute to an understanding of who feel belongingness where. This discussion is mainly based on a survey conducted in the region of Värmland in Sweden. The results show that persons with a Swedish background feel more at home in the place where they live, in the municipality where they live, as well as in the region of Värmland, than persons with a foreign background. Not surprisingly people having lived more than ten years or their whole life at the same place feel more at home in as well the local, regional as the national level. This can in turn be related to Swedish integration policy and the situation of immigrants in Sweden experiencing a sense of exclusion and thereby a lack of sense of belonging to a certain place. But we can also see that other factors, like if you live in the city or in the countryside), are important for a sense of place and feeling at home. Our results will be discussed in relation to issues of urban, regional and social sustainable development.

*Session: Universities and spatial development*

## **TEMPORAL-SPATIAL CHARACTERISTICS OF CROSS-COLLEGE COLLABORATION NETWORKS: A CASE STUDY OF CORE AREAS OF YANGTZE RIVER DELTA AND NANJING METROPOLITAN CIRCLE**

**Hui Gu, Southeast University, CHINA**

As the vital carriers to promote the regional innovative activities, universities not only are the owners of abundant knowledge resource and valuable talents advantage, but also the mother of scientific achievements

and academic discovery, the academic collaborations among which are of significance to regional innovation and connection. Based on the previous researches, this paper focused on the universities in core areas of Yangtze River Delta and Nanjing metropolitan circle, and discussed the temporal-spatial characteristics of cross-college collaboration networks. The study, on one hand, found that in the range of Yangtze River Delta and Nanjing metropolitan circle, the networks embodied the characteristics of different periods (1995-2000, 2001-2006, 2007-2010). In general, the network scale and intensity have increased rapidly, but in different periods, it showed that the nodes and connections are different and formed different spatial structure. Nanjing University, Southeast University, Shanghai Jiao Tong University and other typical universities are in the core of regional academic network, which affected the innovation activities in other universities located in non-core cities. According to the study, the proportion of the collaboration between universities in Zhenjiang, Huaian, Yangzhou and Xuancheng and universities in Nanjing were occupied the whole collaboration amounts for 57.5%, 55.2%, 83.9%, and 36.4%. As the center of Yangtze River Delta and Nanjing metropolitan circle, the universities of Shanghai and Nanjing revealed more connections than with other cities, in that the gathered universities and talents made this two cities the leaders of region especially in regional innovation. On the other hand, by comparing the connection amounts, the academic connections between cities or universities inside the circle were far more than the connections with cities or universities inside the circle and outside, which has verified the impact of geographical proximity on city innovation connection. In conclusion, at the level of regional metropolitan area, technology proximity played a more important role in innovation connections (like Nanjing and Shanghai); while geographical proximity influenced more at the level of cities or universities inside the metropolitan circle. The regularity will offer inspirations and reference for the planning of innovative area and innovative metropolitan area.

*Session: Coordination and planning of cities*

## **THE INNOVATIVE CITY: THE ROLE OF URBAN AREAS IN TRANSITION PROCESSES IN THEORY AND PRACTICE**

**David Hamers, PBL The Netherlands Environmental Assessment Agency, THE NETHERLANDS**

Worldwide, cities are called upon to help achieve a wide variety of policy goals such as economic growth, increased energy efficiency, the mitigation of global warming, improving the liveability of urban neighbourhoods, and the active participation of the population in urban planning. In particular, cities are supposed to help achieve necessary innovations (transitions) in these domains. Both local governments (municipalities) and regional alliances of local governments (in metropolitan areas) are thought to have a thorough insight into relevant local and regional circumstances, are supposed to be able to act relatively quickly and decisively, and are thought to be able experimenters.

On the one hand, there is certainly evidence to substantiate claims such as these, both in the scientific literature as well as in the policy and planning practice. For instance, a growing number of (larger) cities present ambitious policy plans for decoupling natural resource use and environmental impacts from economic growth. Also, cities increasingly share lessons learned from local experiments with their counterparts in international networks, opening up opportunities for scaling-up best practices. On the other hand, critics point towards the limited capacities of cities to affect established systems that function on a global scale, e.g. the interdependent infrastructures facilitating fossil-fuel dependent energy production.

This paper acknowledges the merit of both positions in the ongoing debate about the scope of metropolitan policy and planning in the combined fields of economic development, energy use and climate change, and liveability and social participation. It addresses the following central question: Under which conditions are (cooperating) cities able to plan and act quickly and decisively, learn from local experiments, and share insights across national borders and sectoral domains?

This question is approached by performing a discourse analysis of the relevant scientific literature and policies and plans regarding the roles of cities in the combined fields introduced above. The paper takes the current debate about urban development and urban policy in the Netherlands as a starting point, comparing it to related debates in the international arena. Sub-questions are: How are cities theoretically defined from a (spatial-) economic, energy/climate, and health/social perspective? How are policy objectives and niches/testbeds

related to experiments and innovation framed? Which trade-offs between the different policy domains can be distinguished? Where do different policies show possibilities for synergy? And, how do urban plans relate to national policy?

By exploring these questions the concepts of the city and the urban that feature so prominently in both the current scientific and policy debates can be deconstructed. Black boxes are opened and light can be shed on complex material, metabolic, institutional and social assemblages that make up our cities. By doing so, this paper aims to help scholars, policy makers and planning professionals to reconsider and reassess pressing issues, both in theory and in practice, and draw their attention to both the potential and the limits of urban policies in the field of economic growth, energy use, climate change, and liveability.

*Session: Sustainable urbanization and development 1*

## **THE ROLE OF TRANSIT ORIENTED DEVELOPMENT IN GREENING MEGA-URBAN: A REGIONAL DEVELOPEMENT PERSPECTIVE**

**Hayati Sari Hasibuan, University of Indonesia, INDONESIA**

**Raldi Hendrotoro Koestoer, University of Indonesia, INDONESIA**

Many large cities or mega-urbans in developing countries are experiencing unprecedented urban growth. Jakarta Metropolitan Area (JMA) faces similar problems related with land use, transport, and environment. Rapid urbanization and growing economic prosperity has brought about a higher rate of motorization in Jabodetabek, the largest metropolitan area in Indonesia. Jabodetabek is a strategic metropolitan area, consists of DKI Jakarta and the neighboring cities, with more than 27 million population and Gross Regional Product in 2010 is around 22% of National Gross Product. The Extended Metropolitan Region has resulted in urban land use restructuring including: (1) formulation of mega-urban around the center; (2) spread out of new satellite cities around the center; (3) high increase of mobility from suburbans to the center with private vehicles; (4) high increase of commuter numbers. Transit Oriented Development (TOD) is a concept of managing urban growth in transit corridor which has characteristics of: mixed land use, compact, walking distance, and development focused around public transit area. TOD combines of increasing ridership of mass transit as well as non-motorized transportation. This paper discussed the potential of applicability of Transit Oriented Development (TOD) in Jabodetabek. The results of the analysis of urban spatial structure development of Jabodetabek shows that there was a marked upward trend in the replacement of peri-urban by urban areas. The dominant urban growth type was the expansion of settlement areas in suburbs of the edge of Jakarta. Meanwhile, the expansion of the industrial areas predominantly occurred in the suburbs in the outlying of Jakarta. The settlement model corresponds to the population dynamics. The concentration of population in Jakarta is the highest among the regions in Jabodetabek. The result of study found that the transit stations in Jakarta have characteristics of moderate mixed-land use and compactness. The urban growth pattern in the study area is divided into three concentric zones, such as followings: the first ring, inner circle, the center of CBD, Jakarta, the place of concentration of economic, public services, and governance activities. The second ring, the peri-urban, in the borders of Jakarta, which predominantly as dormitory towns with the services economic activity. And the third ring is the distant suburbs which are still semi-rural area with the growing economic activity is manufacturing industry. With the introduction of TOD the modal split is predicted to increase the train modal share. With the TOD strategy the expansion of built-up areas can be reduced, with the development of high density and mixed land use in transit. Furthermore, the trip distance and number trips of commuters could be reduced and could maintain the green open space areas for sequestering carbon emission produced by the transport activities. But still, the successful of TOD in greening the mega urban from the perspective of regional development depend on some key factors, including: regulations, incentives of investment in transit areas, and a strong vision of leadership and institution in region that could bring transformation of mega-urban and regions.

## **HOW TO JUMP FURTHER? PATH DEPENDENT AND PATH BREAKING IN AN UNEVEN INDUSTRY SPACE?**

**Canfei He, Peking University, CHINA**

**Shengjun Zhu, Swansea University, UNITED KINGDOM**

**Yi Zhou, Peking University, CHINA**

By using the proximity product index, recent studies have argued that regional diversification emerged as a path-dependent process, as regions often branch into industries that are related to preexisting industrial structure. It is also claimed that developed countries that start from the core, dense areas in the uneven industry space have more opportunities to jump to new related industries and therefore have more opportunities to sustain economic growth than do developing countries that jump from peripheral, deserted areas. In this paper, we differentiate two types of regional diversification—path-dependent and path-breaking—and ask questions from a different angle: can developing countries/regions jump further in the industry space to break path-dependent development trajectories and more importantly to catch up with developed ones? Based on China's export data, this paper shows that regions can jump further by investing in extra-regional linkages and internal innovation. Not only do these two sets of factors promote regions' jumping capability, but they also contribute to regions' capability of maintaining a comparative advantage in technologically distant and less related industries. In addition, different extra-regional linkage and internal innovation factors have affected regional diversification to different extents, and these effects also vary across regions and industries. Empirically, this research seeks to find a more promising future for developing countries/regions. Theoretically, our research testifies some key findings of theoretical works in evolutionary economic geography by using a quantitative framework. In addition, this paper includes some economic and institutional factors that have been left out in previous studies.

## **EXPLORATION OF DEVELOPMENT RELATION BETWEEN URBAN PLANNING AND UNIVERSITY CITY PLANNING**

**Wang Hechi, Southeast University, CHINA**

University City planning is the new area and important part within city planning. In this paper, the university city planning as the carrier, to explore the harmonious development of relations between China University City Planning and Urban Planning. University City in China develop after implementing "strategy of invigorating the country through science, technology and education" and reforming higher education system. To satisfy the requirement of expansion and integration of university enrolment and enhance city competitiveness in a new round of development, cities suggest develop University City. University City is embedded in the city and has many functions including education, scientific research, culture, sports, travel and ecological environment. City becomes prosperous because of universities and universities become stronger because of cities. University City and the city formed a contradiction dependency. City relationship with the University not only contain, hold, planning and construction of University City must also be coordinated with neighboring regions and the city planning and construction.

First of all, this paper discusses the concern between the University City and city in space and structure and function. What's more, this paper analyzes the necessities and solution for coordination between the University City and city in aspect of land using, divided area of function, road and traffic and ecological environment.

Such as land using should be a holistic approach, a comprehensive analysis of the University City geographic location and land using patterns, to establish specific goals of land using and development, and to fully study the feasibility and adequacy of implementation used in conjunction natural physical land features and ecological conditions of planning and development, to address the tensions on the university campus on land using and urban land using can improve the overall campus or building density and building floor area ratio on campus partial plots.

Function zoning University City should be combined with urban functions, and coordination between the two complement each other. University City traffic and road layout must be coordinated with the urban transport organization functions, and fully consider the level of the surrounding roads, traffic organization situation, in order to facilitate the passage of the teachers and students on campus, but also to avoid impact on city traffic. Ecological environment should be combined with the entire urban ecological planning and construction, and jointly create a green ecological good urban environment.

Finally, make an analysis and summarize of the University City Planning of Nanjing city. University has brought vitality to the city, urban Development to Promote the university development, the harmonious development between the two, and common prosperity, and finally to University City Planning and Urban Planning closely.

*Session: Sustainable urbanization and development 2*

## **GOVERNING THE TRANSFORMATION TOWARDS LOW-CARBON URBAN ENERGY SYSTEMS. A MULTI-LEVEL GOVERNANCE ANALYSIS OF WUHAN, CHINA**

**Caren Herbstritt, University of Hamburg, GERMANY**

Cities play an important role in the transformation process towards low-carbon societies. As centres of economic growth their energy demand largely contributes to global CO<sub>2</sub> emissions. Since conventional energy is most often imported and renewable energy capacities within the city boundaries are presently low, urban agglomerations present an interesting research subject with regard to the governance of the energy transformation. Furthermore, the urban Chinese level presents an interesting case of study, since the municipal administration governs the transformation process against the background of an authoritarian system. Therefore an adoption of the western concept of governance to the Chinese governance debate is developed in the thesis, arguing that through the reforms in the 1980ies forms of pluralism developed that allow the municipal administration as well as economic actors to actively play a role in climate governance. In the explorative study the objectives associated with low-carbon development and the political, economic and energy-related framework conditions of the transformation process are analysed, since it is in those material, social-structural frames and contexts that Wuhan is governing the low-carbon transformation. Furthermore, the instruments and steering possibilities of the Wuhan administration are analyzed and classified as different Modes of Governance in the Chinese multi-level system.

*Session: Chinese session 1*

## **RESEARCH ON THE SPATIAL AND TEMPORAL PATTERN OF FDI LOCATION IN CHINA SINCE THE NEW CENTURY**

**Zhiqiang Hu, Henan University, CHINA**  
**Xiaowei Duan, Henan University, CHINA**  
**Changhong Miao, Henan University, CHINA**  
**Mingfang Hua, Henan University, CHINA**

As an important form of capital flow, foreign direct investment is important to the regional economic development. The research on FDI location in the world has formed four theories, including location theory, trade theory, Multi-National Corporation theory and industrial organization theory. Early empirical research is mainly about the location of FDI between developed countries. With the opening of a large number of developing countries in the late twentieth century, the research on the location choice of FDI in developing countries is concerned. China's research on FDI location started in 1990s. The research content is mainly about the motive, the mode and the mechanism of the industry transfer. Xu Xueqiang, Li Xiaojian and He Canfei start to study the spatial characteristics of FDI location choice in China earlier. They found that the distribution of FDI in China had a very high concentration. From the factors perspective, early FDI influence factors research based on new classical trade theory, including location, cost, labor quantity, open degree. With the development of new economic geography, the new factors such as agglomeration economy, path dependence are being emphasized. In recent years, eastern industry began to transfer to the Midwest. Given this backdrop, what is the characteristic of FDI location distribution in China? This is a question worth discussing for us. Since twenty-

first Century, foreign direct investment is becoming one of the important engines of regional economic development in China. The spatial distribution and evolution of FDI is receiving increasing attention. This paper takes 269 cities as example and introduces the methods of Gini coefficient, gravity analysis, Kriging space interpolation and panel regression. This paper researches the spatial pattern and influence factors of FDI location in China and gets the following conclusions: ① From the time perspective, the total fluctuation of FDI in China is rising and the annual rate of the changes is large. ② From the space perspective, the distribution of FDI in China is gradually from agglomeration to balanced. East of China is the high concentration area and the FDI development of Midwest is rapid. From the distribution of gravity center, FDI Location in China is moving to north and west and north moving faster than west moving. ③ Because of the regional differences in China, the influence of different factors in different time and region is significant. The factors includes Market size, infrastructure, marketization, labor costs, labor quality, openness, innovation environment, agglomeration effect, enterprise relationship, demonstration effect and environmental control.

*Session: GVC and clusters 2*

## **URBANIZATION AGGLOMERATION ECONOMIES AND DISECONOMIES: SPATIAL CLUSTERING OF MIGRATION AND FOREIGN DIRECT INVESTMENT IN CHINA**

**Hao Huang, University of Utah, UNITED STATES OF AMERICA**

Agglomeration economies, a form of externalities and scale economies, have been well known as one of fundamental explanations of industrial location. Urbanization economy is one of agglomeration economies influencing foreign direct investment (FDI) location, which is related to a city size. Localization economy is another type of agglomeration economies shaping FDI location, which is related to the concentration of industries. The identification and examination of microfoundations of agglomeration can help understand the process and mechanisms behind the behavior of FDI location.

China's rapid urbanization has been considered as an important force shaping the world development in the twenty-first century. With China's rapid urbanization, urbanization agglomeration effects are playing increasingly significant roles in foreign direct investment (FDI) location, but the impact of urbanization economies on FDI has not been thoroughly identified in the context of Chinese urbanization, especially in the 2000s. This paper aims to identify impacts of urbanization economies in 2011, examine differences in their impacts stemming from two components, net migration of rural population (i.e. migrant workers) and the increase of the urban-hukou population (including natural increase and residential reclassification), and assess the relative importance of urbanization economies and localization economies in foreign direct investment (FDI) location. This study uses two sets of systems for collecting population data to differentiate urbanization agglomeration effects resulting from two distinct urbanization processes. This study applies global and local spatial statistics to analyze spatial patterns and trajectories of migrant workers. This paper also employs regression models to examine forces influencing FDI location, especially urbanization agglomeration economies resulting from two different processes.

The results reveal that all clusters of immigrant workers were concentrated in the Pearl River Delta, the Yangtze River Delta, the Bohai Rim Region, and the Minjiang Delta within the eastern/coastal region. The clusters of emigrant workers were in central and western regions, suggesting the intra-region migration from the periphery cities to core cities within the economic regions. The findings also indicate that the urbanization agglomerations stemming from the increase of urban-hukou population and the migration had opposite effects on FDI location: the urban-hukou population generated urbanization agglomeration economies while the population of migrant workers generated urbanization agglomeration diseconomies. The findings provide policy implications on developing periphery cities to motivate and encourage migrant workers to move from core cities within the economic zones and provincial capitals, especially cities in the eastern/coastal regions, to the periphery cities. This study contributes to the current literature on FDI and urbanization by moving beyond the traditional notions on urbanization agglomeration economies and establishing the linkages between migration, urbanization agglomeration, and FDI.



## **THE ROLE OF HOUSING AND THE DEVELOPMENT OF HOUSING INEQUALITIES IN CONTEMPORARY CHINA: THEORETICAL PERSPECTIVES ON THE RELATIONS BETWEEN HOUSING INEQUALITIES AND ECONOMIC INEQUALITIES IN MARKET TRANSITION**

**Di Jiang, University College London, UNITED KINGDOM**

China has experienced miraculous development and transformation in various socio-economic aspects during the past three decades. Cities and urban regions have become outstandingly significant in the national economic success, serving as engines for growth and centres for social advancement. As China aspires to progress further with its transition towards urbanism, problems and conflicts in cities inevitably present great challenges to sustainable growth and overall social stability. Among these urban issues, rising housing pressure and increasing economic inequalities have sparked prominent concerns, arousing abundant scholarly discussions, empirical explorations and policy debates in recent years. On one hand, housing condition has been an essential indicator of living standard for urban residents; on the other, new developments in the urban housing market have also played an ascending role in determining economic well-being of urban families. In the backdrop of widening income gaps in China, economic inequalities arising from differentiated housing prospects directly influence the ability of urban households to generate income and strengthen their resilience against vulnerability risks, thus fortify the mechanism of existing inequalities. Therefore, urban housing issues and the deriving concerns on economic inequalities are inescapable burdens to tackle in order to maintain the steady steps of healthy urbanization and guarantee the sustainable outcome of reform and development.

Setting in this background, this paper explores theoretical rationals to frame the relationship between housing inequalities and economic inequalities in China's context of market-oriented reforms. It aims to build theoretical base to unravel the process of how housing outcomes from the previous urban housing reform policies have affected the performance of urban households in the subsequent housing market development, and identify the underpinning forces of the resulting economic inequalities among these households. In order to establish a proper theoretical framework relevant to this intended study, some key contexts will be considered: the first is the market-oriented housing reform accomplished in the 1990s, which has shifted the housing tenure structure via privatization and commodification of public housing stock; the second is the successive establishment of a new urban housing market and the new dynamics in the residential real estate industry. Based on these realities, the conceptualization of housing and economic inequalities in China's market transition is positioned in the weaving streams of housing and economic theories: (1) The first stream considers housing as capital asset and explores the mechanism of urban housing market. This stream mainly looks into the concepts of capital and its operations in the market in terms of wealth generation. In this sense, the paper will identify the nature of housing and study the changes in its role in market development, especially in the residential real estate industry. (2) The second stream pays attention to the literature on economic inequality and the different schools of scholarly debates on its causes and effects in the course of economic development. This part of theoretical exploration intends to combine with the discussions on capital and wealth creation in market, yielding clearly defined boundaries of economic inequalities and housing inequalities in the frame of this research. (3) The third stream discusses the notion of market transition, particularly referring to the transition from redistributive mechanism to market mechanism in the reforming state socialism model. This stream contextualizes the forming of a market society and its mechanism on inequalities and stratifications.

This paper will form part of the theoretical framework for the PhD research project titled 'From Housing Inequality to Economic Inequality: The Role of Housing and the Development of Housing Inequalities in the Market Transition of Contemporary China'. The purpose is to draw theoretical evidence from the literature review to lead to a feasible analytical framework and shed light on the methodology, research design and specific techniques of analysing findings. It is also an inevitable step to guide primary data and information collection during the fieldwork.

## **THE CHANGING ROLE OF UNIVERSITIES AS A CASE OF INSTITUTIONAL TRANSITION IN ECONOMIC DEVELOPMENT**

**Ebru Kerimoglu, Istanbul Technical University, TURKEY**

**Vuslat Bozdag, Istanbul Technical University, TURKEY**

The diversification of the inputs in economic activities, the changes in production methods, the increasing importance of knowledge, and technological developments are forming the base of institutional transition. There is an expanded literature about institutional transition in universities from around the world by means of knowledge-based economy. Some changes are administrative, some of them are academic, and some cases are about productivity of a university. The growing role of knowledge as the base of the economy has meant growing expectations of universities all over the world to function as engines for regional growth. Throughout this process, university became a multiple institution with adding research, relations with industry, with public institutions and with society to its main education purpose. It should be drawn attention the importance of relationship between global knowledge system and local conditions to ensure development and in the direction of this purpose universities role as a provider this link between global flows, science, technology and local conditions for economic development. Today, it is not enough for a university giving youth an opportunity to have a profession or creating educated labour. This paper reviews institutional transition by means of knowledge based economy in particular the changing role of universities in economic development. 4 Turkish universities, which are in Istanbul, Istanbul Technical University, Boğaziçi University, Sabancı University, and Istanbul Bilgi University are investigated as a case under three main topics; management, productivity, and academic. These are selected firstly as being old, young, public and private, secondly, Istanbul Technical University and Sabancı University are more specialized in the field of engineering, and Boğaziçi University and Bilgi University are strong in terms of social sciences. Deep interviews with vice-rector of these universities, who are responsible for institutional management, R&D activities, research centres, industry relations are conducted and related indicators from university's databases are collected. New strategies, development axis, changes in academic structure, R&D activities, projects, industry relations and technology building are analysed. With regards to solid references and considered the world cases in this study, obviously Turkish universities also experienced transition in similar fields. In fact, all universities change under the context of knowledge based economy. All these changes, increase the interdependency both institutionally and internationally, also contribute positively to the production of knowledge and ease its transfer with fluency to all relevant parties. Thus, this is how Turkish universities respond the expectations of knowledge-based economy. It should also be underlined that world cases started to make transition by means of knowledge-based economy since 1970s. In Turkey, evolution of universities escalates to 2010s'. However, they've taken huge steps on short notice and could get aligned with its counterparts in the world. The universities have more intense and conscious changes about being an important part of knowledge-based economy although lagging behind in terms of timing.

## **URBAN MORPHOLOGY CHANGES THROUGH THE POWER SHIFT FROM PUBLIC SECTOR TO PRIVATE INDUSTRY IN URBAN DEVELOPMENT IN SEOUL**

**Jungbin Kim, University of Seoul, REPUBLIC OF KOREA**

Seoul has been developed with rapid economic growth. The population had been grown up to 10 times more that Seoul used to have in 30 years after Korean war. To cope with the population increase and the need of reconstruction of the city after the war. The urban development had to be quick and efficient to provide the housing and infrastructure for the city. after 70s, with social and political reasons, the power to build urban development had been shifted to the private industries which caused the big changes on the built environment (urban morphology). This paper will investigate how the power shift influenced the urban form of the city of Seoul.

## **URBAN LAND READJUSTMENT IN SOUTH KOREA**

**Klaas Kresse, Ewha Womans University, REPUBLIC OF KOREA**

The presentation will give an overview of the Urban Land Readjustment tool as a method for development on previously developed land in South Korea. Urban Land readjustment, also known as land pooling is a development tool originated in the West, but applied on a big scale in East Asia; mainly in Japan, South Korea and Taiwan.

Urban Land Readjustment has proven to be an efficient tool for the renewal, revitalization and redevelopment of previously developed urban areas, especially in areas where development pressure has been extremely high and led to relatively low quality urban developments. In these developments infrastructure might be insufficient or even non-existent. Upgrading these areas is difficult from a tenure and property rights perspective. Land ownership might be complicated and distributed among many different landowners with diverse ambitions and financial possibilities. Additionally, upgrading previously developed land cannot benefit from the same value gain on the land as Greenfield developments and has to deal with the legacy of previous construction or contamination of the land. Therefore, this makes the development of previously developed urban areas costly. Urban Land Readjustment provides a development tool that can deal with these challenges. Public- and private parties, together with the existing landowners develop a scheme for the upgraded development. Infrastructure and housing conditions can be improved, often under the precondition of higher building densities in the newly constructed urban areas.

The presentation will show the experiences with Urban Land Readjustment in South Korea, specifically in Seoul. In South Korea Urban Land Readjustment is one of the major tools for development of previously developed land. It started to be used for its qualities as a remedy for sub standard housing and reinforced the national growth policy. Urban Land Readjustment prevails to be the dominant development tool in South Korea still today. While supporting rapid urbanization and growth especially in Seoul, the way in which Urban Land Readjustment has been applied in South Korea has not gone without criticism. The presentation covers legislative, financial, social and morphological aspects of the resulting urbanism in South Korea as a result of Urban Land Readjustment. The presentation will give answers to the following questions: What is the relation between public and private parties in Urban Land Readjustment in South Korea? How are these projects financially possible? Are these projects leading to an increased social stratification? Is the new urban structure supporting a sustainable lifestyle and increasing the resilience?

With this presentation the qualities of Urban Land Readjustment in Korea and the criticism surrounding it will be explained and put into relation. It is expected that the experiences of the Korean case bear valuable information for other countries or cities weighing the benefits of the tool in their own context.

## **EFFECT OF POPULATION FLOW OF YANGTZE RIVER ECONOMIC BELT ON REGIONAL ECONOMIC DISPARITIES AT THE MULTI-SCALE PERSPECTIVE**

**Jingjing Li, Henan University, CHINA**  
**Changhong Miao, Henan University, CHINA**

The size and scope of population flow have been expanding with the deepening of reform and opening policy, the market economy and the reform of household registration, economic inequalities of Yangtze River economic belt are increasingly prominent. We analyze economic spatial structure of household registration and resident of the Yangtze River economic belt and explore the influence of population flow on their economic differences by using Theil index and its decomposition, multilevel regression models, combined with GIS spatial analysis tools. The result shows: (1) the formation of economy spatial structure is sensitive to the terrain, and economy is more developed at a lower altitude. With the dense river network the eastern region which is made up of hills and plains is most developed, where there is a center- periphery structure with the core of Yangtze River Delta; (2) Total and exploded disparities under registered population is greater than permanent resident population.

The former expands the differences over time, while the latter narrows; (3) Yangtze River economic belt economic disparities at different scales are growing with the increasing population flow size.

*Session: Innovation and Entrepreneurship*

## **STAY OR START UP: SURVEY ON ENTREPRENEURSHIP INTENTION WITHIN MANUFACTURING PLANTS IN SHANDONG, CHINA**

**Jingyan LI, Peking University, CHINA**

**Xin Tong, Peking University, CHINA**

**Dongyan Tao, Peking University, CHINA**

Studies on entrepreneurship have found that immigrants have higher rate to start new firms. However, it's not clear that whether it is because the environment of the region where the migrants move in builds their intention of entrepreneurship, or the people with intention of entrepreneurship have higher tendency to migrate when they are at home. The intention to startup a new business reflects both the personal characteristics as well as the cognition on environment of a potential entrepreneur. With a survey on 2981 employees in 35 manufacturing plants in two counties of Shandong province in China, we investigate the factor that could influence the intention of entrepreneurship through a binary logistic regression model. We found that: (1) the employees with intention of entrepreneurship are significantly more likely to migrate to large cities, especially Qingdao, one of the largest urban center in Shandong. (2) They are more motivated for improvement in career development as well as their children's education when consider the decision for migration. (3) They are more likely to concern about the restriction on hukou while pursuing moving to the cities they are dreaming for. In conclusion, we discussed the implication of the research for the regional entrepreneurship policy. Since the people with higher intention of entrepreneurship is more likely to move to the large cities, it would be more efficient to provide entrepreneurship support in those cities and reduce the barriers for people to move, than encourage people to start new firms but keep them stay in the countryside.

*Session: Innovation and spatial development*

## **THE FORMATION AND EVOLUTION OF CHINESE AGRICULTURAL SCIENCE AND TECHNOLOGY KNOWLEDGE NETWORK**

**Erling Li, Henan University, CHINA**

**Wenjing Wang, Seismological Bureau, Xinxiang, Henan, CHINA**

**Xinyue Ye, Kent University, UNITED STATES OF AMERICA**

**Yanan Xu, Henan university, CHINA**

In the context of innovation-driven development strategy and accelerating agricultural science and technology innovation in China, it takes an important role that exploring the formation and evolutionary mechanism of Chinese Agricultural Science and Technology Knowledge Network (CASTKN). Based on the data of cooperation patents published in the field of agricultural science and technology in the full text database of Chinese patent, using the social network analysis and spatial analysis, this paper analyzes the structure and its evolutionary mechanisms of CASTKN in 2000-2012, from both the spatial and the institutional dimensions. It is shown that: (1) Since 2000, the nodes of CASTKN gradually increase, and the structural paradigm shift from unipolar to a few core, and to multicore; (2) In the spacial level, the cooperative patents mainly occur in intra-province, and showed a significant hierarchical structure. Beijing, the Yangtze River Delta, Guangdong, Yunnan, and Sichuan province are the hot areas of Chinese agricultural science knowledge exchange and cooperation. The main patterns of knowledge diffusion gradually change from the contagious diffusion to hierarchical diffusion, and the spatial structure and evolution pattern of agricultural science and technology knowledge network consistent with the spatial layout and development trend of Chinese agricultural economy and social development; (3) At the institutional level, patents mainly occur in the independent author and the cooperation authors in the same institution, while less cooperation occur between authors in the different units. Enterprises have always been the dominant nodes in agricultural science knowledge network, and universities and research institutes play an increasingly important role in the network, but overall it is not very active of cooperation between enterprises,

universities and research institutes. Different regions have different dominant collaborative types of patents, such as the main collaborative types in Beijing-Tianjin-Tangshan and Xinjiang province are scientific research institute-driven, and enterprise-driven for the Yangtze River Delta region, while, for the Pearl River Delta region, Yunnan and other areas present a combined driven that various agencies have a balanced growth trend. (4) Different types of nodes in the network take initiative to absorb the complementary knowledge from others. Path dependence in cooperation is the main intrinsic motivation driving for the network evolution. Geographical proximity and organizational proximity play a decisive role on formation and early development of knowledge networks. But with the evolution of the network, economic globalization and the differences between socio-cultural, institutional rules in different areas are the main external driving forces for the Chinese agricultural science and technology knowledge network evolution.

*Session: Land and city development*

## **MEASURING CULTURAL ASPECTS IN LAND DEVELOPMENT PROCESSES: AN EXPERIMENTAL APPROACH**

**Keyang Li, Radboud University Nijmegen, THE NETHERLANDS**

**D. Ary A. Samsura, Radboud University Nijmegen, THE NETHERLANDS**

**Erwin van der Krabben, Radboud University Nijmegen, THE NETHERLANDS**

International comparative studies on urban planning and urban land (re)development have increasingly realized the importance of planning culture—interpreted as values, attitudes, mindsets and routines shared by those taking part in planning (Fürst, 2009)—to the potential success of introducing innovative land management strategies (Heurkens & Hobma, 2014; Hartmann & Spit, 2015; Adams et al, 2010; Dolowitz & Medearis, 2009). In parallel, comparative planning cultures research flourishes in discussing the impact of planning culture on urban and regional development (Knieling & Othengrafen, 2009; Sanyal, 2005; de Vries, 2015). The convergence of above domains indicates that when considering the policy transfer of land management strategies, researchers need to gain a better understanding of local stakeholders' cultural aspects towards generic issues in planning and land development.

However, existing works from both directions have not adequately addressed the measurability of planning culture in an empirical way. The predominant methods adopted for international comparative studies referring to cultural aspects are expert discourses and case studies (Fürst, 2009). There is a lack of a measurement tool that enables reliable cross-context comparisons. The proposed paper, by taking a point of departure in Dutch planning context, explores an experimental way to measure planning culture from three behavioral games. Specifically, three cultural aspects are of great interests and importance: risk preferences towards collecting development plots under the uncertainty of market demand drop (Nijkamp et al, 2002), trust beliefs towards collaboration partners or associates (Faludi, 2005) and cooperation attitudes in a public good project (Halleux, 2012). In line with those three cultural elements, we carefully design three behavioral games based on experimental economics practice: The Risk Elicitation Task (risk) (Crosetto & Filippin, 2013), Trust Game (trust) (Berg et al, 1995) and Public Goods Game (cooperation) (Ledyard, 1997). These games are implemented on two innovative online platforms for social science experiments called the Global Online Experimental Platform (GXP), which conducts subjects management and data recording, and Otree, which creates the online game sessions. Compared to many economic experiments that recruit student subjects, in the games prepared in this research, real Dutch planning practitioners from both public and private sectors are invited to participate in order to observe the real stakeholders' behavior concerning the three aspects of the analysis. By doing this, the external validity of the results will also be maintained.

We argue that the applications of our experimental results are valuable in three-folds: (i) it complements planning culture literature by providing first-hand experimental evidence and an experimental platform for international comparisons, which are lacking in practice; (ii) it constitutes policy references when decision makers and researchers investigate new land management strategies that may require specific conditions on risk, trust and/or cooperation attitudes; and (iii) it can be incorporated in updated behavioral assumptions when scholars design new models (e.g. use of game theory) to simulate interactive decision-making process in planning.

In conclusion, this research, by explicitly examining three variables in planning culture (risk, trust and cooperation) with three behavioral games, provides innovative empirical evidence and method on planning culture and its relationship with land management strategies in the context of urban planning and land development.

*Session: Pollution, industry and transport*

### **EXPLAINING TRANSPORT CARBON EMISSIONS BY DIFFERENT MODE FOR SHOPPING IN URBAN AREAS: A CASE STUDY OF SHENYANG CITY IN CHINA**

**Jing Li, Northeast Institute of Geography & Agroecology, CHINA**

**Pingyu Zhang, Northeast Institute of Geography and Agroecology, CHINA**

With income increasing and emergence of modern shopping centres in urban China, shopping trips by private car becomes more and more common which leads to higher carbon emissions. Encouraging car owners to shift transport mode from private car to public transit could achieve significant emissions reductions of urban transport emissions. The objective of this study was to estimate carbon emissions savings from public transit compared with private car for shopping in Shenyang, one of the largest cities in China by the questionnaire surveys and interviews (to get travel characteristics), optimal path analysis (to calculate trip distance) and average emissions factor per passenger for different transport mode. In order to see the impact of different travel behavior on low carbon city more clearly, we then analyzed share of car owners and their different mode choices living in different public transit accessibility area on weekday and weekend. Results showed that firstly the carbon emissions on average of total consumers were 426.86g (carbon emissions on weekend were 12.9% higher than weekday). For the total consumers, carbon emissions caused by private car were 5.09 times of public transit (4.69 and 5.61 times on weekday and weekend). Secondly, the percentage of car ownership increased gradually with the decrease of public transit accessibility and there were more car owners choosing private car than taking public transit in the location of low accessibility. Thirdly, there were particular characteristics of high-income, undergraduate or above education level and typically white-collar individuals that explained the likelihood of using private cars for shopping. We concluded that well-performing and high-quality urban public transit would be a feasible and effective transport strategy to reduce urban transport emissions. Meanwhile, low carbon city needs more low carbon person with low carbon civilization and lifestyles.

*Session: Pollution, industry and transport*

### **TOWARDS SUSTAINABLE DEVELOPMENT OF MEGACITIES IN CHINA: LINKING URBAN STRUCTURE AND AIR POLLUTION IN BEIJING**

**Weifeng Li, University Of Hong Kong, CHINA**

**Jiansheng Wu Wu, Peking University Shenzhen Graduate School, CHINA**

While Beijing is not alone when it comes to smoke-filled skies, this city of more than 20 million people has come to symbolize the environmental cost of China's break-neck economic growth. Fine particulate matter (PM2.5) pollution has been a heated topic for discussion that also leads to health concerns greatly. Health studies have shown a significant association between exposure to fine particulates and adverse human health effects, such as respiratory problems and cardiovascular diseases. The sources of PM2.5 could be from burning of coal and biofuel, dust from roads, exhausted gases from vehicles and industrialization. Air quality varies in urban spaces non-linearly and depends on multiple factors, such as meteorology, traffic volume, and land uses. It is of significant importance to investigate the contributions of population density, land use, transportation system and urban activities to the concentrations of PM2.5. The proposed research will also be one of the earliest assessments, as known, of examining the spatial variation of the PM2.5 concentrations and exploring the impacts from urban structure and activities in the Chinese context since the public release of real time PM2.5 data in major Chinese cities in 2013.

Most of currently reported models for linking the PM2.5 concentrations to land use and urban pattern, such as the most commonly used Land Use Regression (LUR) Model in environmental research, are global methods

without considering local variations, which might introduce significant biases into prediction results. In this paper, a geographically weighted regression (GWR) model will be developed to examine the impacts of urban structure and activities on PM2.5 concentrations, in the Beijing metropolitan area. It aims to make contributions to development and new advances in bridging the LUR and GWR modeling, including expanding the scope of the predictor variables, new GIS approaches, and spatio-temporal considerations.

This research applies the GWR model to assess the exposure to fine particles in Beijing, and to understand the impacts from vegetation coverage, population density, land use pattern, transport network as well as human activities, e.g., catering services. It makes use of the data collected from around 100 air quality monitoring stations in the Beijing metropolitan area between January and December 2014. Combined with the road networks, demographics, distribution of catering services and land use map, the GWR model is built to analyze the contributions of those factors to the concentrations of PM2.5. By doing this, we will help policy makers identify the priority areas and design better plan for pollution controls. Of course, this research could also serve as the important inputs to the health effects study of long-term exposure to outdoor air pollution.

*Session: Transport investment and planning*

## **AN ANALYSIS ON THE SPATIAL EFFECT OF TRANSPORTATION INFRASTRUCTURE IN BORDER PROVINCES: THRESHOLD, SPILLOVER, AND BORDERING**

**Hong Li, Guangxi University, CHINA**

**Ting Zhang, Guangxi University, CHINA**

As China's "One Belt One Road" international cooperation strategy – which related to the connectivity with both domestic and international market – advances, it is important to test the spatial effect of the transport infrastructure and whether the feature closing to borderland is an advantage for the border regions. In other words, we want to answer whether the internal connectivity and the cost for going out would have effect on economic growth in border regions. Comparing with researches which ignore spatial correlation of the economic growth and spillover effects transportation infrastructure, this paper tries to build a spatial econometric model including location factor of highway transportation infrastructure and distance from the country border, by taking Yunnan and Guangxi as an example of border regions and using panel data at the city level from 2004 to 2013. The result shows that, firstly, the index of economic growth and highway density's Moran's I is positive, so that we should use the spatial effect of general panel estimation. We found that the spatial lag panel model can better explain economic growth model which include geographical factors such as transportation infrastructure level. Secondly, the model results show that the spatial lag spillover effect on economic growth is 0.4010, which means that the economic development of neighbor regions can drive the local economic development to improve significantly. Especially, in the terms of the spatial effect of the transportation infrastructure we focus, the empirical results validate that the better road infrastructure will have an obvious promoting effect on local economic growth, and the coefficient values is larger than model's estimate coefficient values which not considering the spatial spillover effect of economic growth. Which means that ignore this effect will underestimate the promoting effect on local economic growth. When the highway density value beyond a certain level, the promoting effect on economic growth will be diminished, reflecting that there is a threshold effect on economic growth. Further, the neighbor regions' economic growth has a spatial negative spillover effects on local economic development, if ignore considering this space negative spillover effect, we will underestimate the local road infrastructure's economic effect on local economic growth. Finally, we found that the adjusted distance from the country border has a positive role for economic growth, the cost to the border region is more higher, economic growth is more better, distance still has not been able to translate into lower transport costs to reduce inhibition effect on economic growth as the location advantage, the advantage of closing to borderland is not prominent. The path dependence of concentrating to the domestic core market is still remained. In addition to above conclusions, we also find that border regions' international export-oriented open effect on economic growth is relatively weak. Therefore, in the process of economic globalization and liberalization and with the international regional opening-up and cooperation strategies such as the "One Belt And One Road", we suggest that the border region should keep the spatial layout balance of the transport infrastructure, keep peace between the economic growth and transport development, and pay more attention to strengthen opening and cooperative ability to the domestic market, and then raise an international openness, to rebuild location advantages and create a new development path.

*Session: Culture, values, mentalities/housing, regional development*

## **REGIONAL ECONOMIC DISPARITY UNDER THE FRAMEWORK OF MULTI-SCALE AND MULTI-MECHANISM ANALYSIS IN POVERTY-STRICKEN AREA: A CASE STUDY OF GUIZHOU PROVINCE IN CHINA**

**Yutian Liang, Sun Yat-Sen University, CHINA**

**Xiaona Lin, Key Laboratory of Regional Sustainable Development Modeling, CHINA**

**Wei Sun, Key Laboratory of Regional Sustainable Development Modeling, CHINA**

Regional inequality is a heated issue in geographical research, which plays an important role in China. However, the underdeveloped regions are lack of attention in the research of Chinese regional economic development disparity and most of the researches focus on the single scale. GuiZhou province is a poor area and one of the provinces of the West development strategy. This paper analyzes the Scale effect, spatial-temporal dynamics and the mechanism of the regional economic inequality from 2000 to 2012, based on the framework of "Optimal scale, Overall trend, Direction for inequality, Mechanism factors". From the results, we find that the economic inequality first increased and then declined. The regional disparity is sensitive to the geographical scales, which is It is more pronounced at finer spatial scales. In addition, the economic development in GuiZhou province presents the spatial agglomeration and the Club Convergence. The partial differentiation appeared with the enhanced spatial agglomeration, which gradually showed the development pattern of one core area and two wings and the contiguous area at the edge of the province in 2006-2012 have been developed. Multilevel regression analysis presents that marketization and industrialization reinforced the regional economic difference in GuiZhou, the effect of the decentralizations was smaller. From the entire study period, decentralization weakened the regional economic disparity to a certain extent in GuiZhou province. Investment levels was quiet important for narrowing the regional inequality, but investment in fixed assets actually expanded the disparity after joining the time hierarchy.

*Session: Strategic planning,international investment and metropolitan growth*

## **ROLE OF METROPOLITAN AREAS IN STRATEGIC PLANNING OF RUSSIAN REGIONS: CASES OF ST PETERSBURG AND THE REPUBLIC OF TATARSTAN**

**Leonid Limonov, ICSE Leontief Centre, RUSSIA**

Territorial Strategic Planning at sub-national level was started in Russia in 1990-s only in several pilot regions and cities. The pioneer in this activity was St Petersburg, who developed its first Strategic Plan, based (the first time in Russia) on principles of broad stakeholders' participation, in 1996. From 2014 after adoption by the State Duma of new legislation on planning, strategic planning at regional and local levels became obligatory for all subjects of the Russian Federation. However, the unified methodology of strategic planning is not yet at place, so different regions may use different approaches and planning techniques. Coming future will show which of applied regional methodologies will be taken by the Federal Ministry of Economic Development as a model and included in their recommendations for all regions. Another actual problem now is coordination and synchronization of strategic plans between different levels of administrative system, i.e. between regions and municipalities. This methodology also should be prepared by the Federal Ministry of Economic Development. Problem of planning and regulation of metropolitan areas development is very important for several regions of Russia. Moreover, this question became recently a subject of discussion and preparation of draft legislation proposals at the federal level! Agglomeration effects play a significant role in Russian economy, especially in regions with big cities, low level of natural resources endowment and high level of human capital. In such regions the major part of GRP is created in main urban centers, the problem is, that lack of coordinated planning and absence of comprehensive approach to the area development and regulation may lead and often do lead to negative externalities, which may diminish positive agglomeration effects, caused by high levels of population density, diversity and concentration of human capital. This is particularly true for new economy, based on knowledge and innovations.

In the paper these problems and approaches to solve them are considered for two very specific cases: St Petersburg and the Republic of Tatarstan. St Petersburg as a metropolitan area is bigger than St Petersburg as a



subject of the Russian Federation. A number of municipalities, which are a part of St Petersburg metropolitan area, are included officially in another one subject of the Russian Federation, surrounding St Petersburg – Leningrad region. So, the question of planning for the metropolitan area enfaces a number of legal and administrative obstacles and treated in St Petersburg Strategy-2030 in a very cautious way. Some other medium term programs were developed recently for St Petersburg sub-urban areas, commissioned either St Petersburg or Leningrad region. The paper presents analysis of common and contradictory points of these documents and suggests proposals on institutional framework development to ensure better cooperation of two subjects of federation in spatial planning and development. Republic of Tatarstan prepared and approved its long-term strategy “Tatarstan-2030” in 2015. The main focus of this document is on creation and accumulation of human capital. Though this region is rich in oil and has well developed petroleum industry, they see human resources as the main source of their future development and competitiveness. That’s why concentration of human capital in 3 metropolitan areas and infrastructure and rapid transport development for better connection and communication between these areas are main priorities of the plan. The paper suggests proposals of institutional innovations for better management of implementation, monitoring, evaluation and control of this plan.

*Session: Natural/cultural resources, planning and development*

### **RESOURCE MANAGEMENT REGIMES AND INNOVATION IN PERIPHERAL NATURE-BASED TOURISM: THE CASE OF NORTH CAPE TOURISM AND SEA FISHING TOURISM**

**Knut Bjørn Lindkvist, University of Bergen, NORWAY**

**Heidi Holmgren, University of Tromsø, NORWAY**

This article discusses how the different management regimes of capitalized and non-capitalized resource rents act as mechanisms of innovation and restructuring in peripheral nature-based tourism, as illustrated respectively by North Cape tourism and sea fishing tourism in the Nordkapp municipality of northern Norway. The analysis of innovation mechanisms and industrialization are discussed within a centre–periphery context that is dominated by distance, instability and dependency, typical for resource peripheries. Our findings indicate that tourism in the Nordkapp region suffers from a lack of local innovation initiatives caused by the capitalized resource rent in tourism to North Cape and its leakage. Nevertheless, local tourism has still experienced an increase, for example, in new and more attractive products, because of open access and non-capitalized resource management in fishing tourism that operates simultaneously with the closed and capitalized North Cape tourism. This open access regime of fishing tourism stimulates innovation and further development of coastal tourism, and even rubs off on the traditional North Cape tourism. The non-capitalized resource rent does not leak out because it is not collected by external firms and acts as an innovation mechanism in the periphery.

*Session: Cities, city networks and growth*

### **SPATIAL AND TEMPORAL CHARACTERISTICS OF URBAN EXPANSION PROGRESS IN SIPING, CHINA**

**Dong Liu, CHINA**

This paper will present a study of the urban expansion process in Siping, Jilin Province of China, through the analysis of Geographical Information Systems (GIS). The increasing numbers of large cities and metropolitan areas have become the most remarkable demographic story of past decades, and urban expansion is more visible and evident in China. This unprecedented progress of urbanization reciprocal impacts upon social, economic, and environmental change. Therefore, understanding the spatio-temporal patterns and driving forces of the expansion of urban land has potential to benefit the policymaking process in relevant fields.

This study focuses on Siping, a medium size city in the Northeast of China. The urban area of Siping has increased over 50 km<sup>2</sup> since the reform in 1979; the metropolitan area of Siping has expanded 5 times. The study will seek to understand the scale and characteristics of the progress of urban expansion of Siping through analyzing maps over the past three decades. It will explore the temporal and spatial characteristics of the urban expansion

process of Siping by identifying the temporal sequences of spatial change evident in successive urban growth maps. Additionally, the study will present the temporal changes to the built area of Siping by analyzing difference stages and sequences of the urban growth process in relation to social-policy interventions. The study will identify and evaluate land use and land cover changes, due to urbanization from 1979 to 2015. A detailed understanding of landscape changes in urban expansion provides a useful tool through to compare the structural and functional differences of landscape zones at different orientations. Finally, the main factors governing urbanization, land use, and land cover change will be analyzed, given that the urbanization process cannot be fully understood without examining the social, economic, and institutional background against which such land use changes have taken place.

This paper constitutes the initial section of my thesis: 'Social inequalities in Chinese peri-urban areas - a case study of Siping'. The section presents a comprehensive background to the city. In-depth understanding of the urban expansion progress of the city will allow the researcher to identify the peri-urban areas that will be studied. It is envisaged that hitherto poorly-understood forms of inequality to have emerged in different zones of Siping, will become both more intelligible, through this study, and that the conclusions will offer an empirical basis for reformed urban land use policies through which to address such inequalities.

*Session: GVC and clusters 2*

## **INTRA-REGIONAL STRATEGIC RECOUPLING AGAINST GLOBAL INDUSTRIAL IMPERATIVES: STATE-LED INDUSTRIAL RELOCATION IN GUANGDONG PROVINCE, CHINA**

**Yi Liu, Sun Yat-Sen University, CHINA**

**Yutian Liang, Sun Yat-sen University, CHINA**

Premised on the approach of global production network (GPN), this paper examines the interactions between state initiatives and corporate responses in reshaping the trajectories of regional development in Guangzhou Province, China. Under export-oriented industrialization, the Pearl River Delta (PRD) in Guangdong Province is a promising region which has achieved rapid economic growth throughout more than two decades of development. But this achievement was at the expense of extensive usage of labor and land resources. The PRD increasingly faces developmental challenges due to the exhaustion of these resources. Therefore, since 2008, the provincial government implemented an action of state-designated industrial relocation to transfer low value-added industries from the core area (cities in the PRD) into the periphery areas (the rest cities within the province). It was meant for boosting regional industrial upgrading against the global industrial imperatives of relocation out of China as well as the recent global economic crisis. This forceful plan led to a process of strategic recoupling among city states, local firms and foreign firms. Based on specific arrangements of inter-city tax sharing and provincial subsidies, the provincial governments successfully relocated thousands of firms that improved the economies in those periphery cities. Foreign firms significantly reduced their production costs, thus delaying their plan of moving out of the region. However, the effectiveness of local industrial upgrading was still in questions because limited local firms get upgraded during this process and many designated industrial parks become hollow over times. Based on these findings, this paper argues developing regions are not passive followers of the imperatives of transnational corporations in GPNs, but proactive actors in deploying various regional assets to reshape the logics of global industrial restructuring under the imperatives of 'footloose' capital. Through the case of the PRD, the synthesis of regionalized production networks, large territories, and developmental state institutions has become a crucial regional asset for latecomer regions to 'hold down' global capital in a more sticky manner. This work has viable implications for developing countries because it provides alternative industrial policies besides innovation and tax reductions.

**PROMOTING COLLABORATIVE GROWTH OF UNIVERSITIES AND REGIONS THROUGH CROSS-REGION MULTI-CAMPUS UNIVERSITIES**

**Cui Liu, Zhejiang University, CHINA**

The role of universities in the regional innovation system has been frequently studied in recent years, ranging from the socio-economical to the institutional and spatial aspects. The geographical location of the campus has much to do with the role of university in innovation as it has shaped the spatial manifestation between the universities and regions and contributed to different modes of university engagement. The multiple campuses can be located in different places of a region, in different regions, or even be across the country. While there have been many studies assessing the role of the university as a whole in the innovation system, few has touched the innovation role of the university with multiple campuses, especially the university with cross-region multiple campuses.

This paper is set into the scenario about the role of universities in the innovation system and explores why and how to develop cross-region multi-campus universities in China. The paper is focused on the emerging spatial phenomenon of university engagement in innovation and takes into consideration the non-spatial aspects which have interplayed with the university spatial development. The paper first discusses the shift to innovation networks and the features of entrepreneurial universities, paying particular attention to the development of cross-region multi-campus university as an organizational form of entrepreneurial university to achieve innovation networks. Then the paper examines the Chinese background of developing cross-region multi-campus universities from the perspectives of higher education reform and regional planning, and summarizes the Chinese policies with regard to the strategic spatial planning of Chinese universities. After that, the paper makes an overview of the cross-region multi-campus universities in China, identifying the typologies of cross-region multi-campus universities according to their management modes and discussing their characteristics, advantages and disadvantages. Finally, the paper proposes several recommendations for developing cross-region multi-campus universities and rationalizing the regional distribution of universities in China.

The paper is based on an overall investigation of Chinese cross-region multi-campus universities, with detailed studies in several typical cases. The data are collected from official reports, circulations, documents and interviews in the Chinese universities and government offices. It contributes to regional studies by exploring the combination of spatial and non-spatial logics of university engagement in regional innovation.

**THE INVESTIGATION AND ANALYSIS FOR FARMERS 'WILL OF MOVING TO THE CENTRAL VILLAGE AND INFLUENCING FACTORS IN MINORITY COMMUNITY – TAKE HETIAN REGION FOR EXAMPLE**

**Zhang Lu, Xinjiang Institute of Ecology and Geography, CHINA**

**Hongru Du, Xinjiang institute of ecology and geography, Chinese academy of sciences, CHINA**

**Xiaolei Zhang, Xinjiang institute of ecology and geography, Chinese academy of sciences, CHINA**

The construction of central village is not only the way to modernize the rural areas, but also is the important way to realize the intensive utilization of land. And Hetian Region, which is slow in economic development and has the prominent contradiction between man and land because of the rapid development of population, is on the way to construct the central village. This article is based on 1162 household survey questionnaires in Hetian Region and uses the multivariate Logit model to analyze factors which will influence farmers to move to central village. Results indicate that labor in the home, family income, arable land whether to participate in land circulation, whether migrant workers, the satisfaction to the new rural reconstruction, whether to buy a house in the city, and the number of living environment projects needs to improve, these are the important factors affecting farmers' willingness to relocate. Therefore, in the process of guiding farmers to move to the central village, the local government should combine these characteristics and start from the characteristics and needs of farmers moderately to guide farmers to move to the central village.

## **FACTOR DECOMPOSITION OF CHINESE INDUSTRIALIZATION ENVIRONMENT POLLUTION BASED ON LMDI**

**Li Ma, Institute of Geographic Sciences and Natural Resources Research, CHINA**

**Fengjun Jin, Institute of Geographic Sciences and Natural Resources Research, CHINA**

Huge expansion of Chinese industry scale since 2001 has lead into the different growth of industrial waste water discharge and gas emission. Base on the study of evolution characters of Chinese industrial structure and pollution, this paper built the material coupling relationship between industrialization and environmental pollution. With the Kaya function, the volumes of industrial waste water discharge and waster gas emission could be expressed as the formula of the multiple multiplication of industrial scale, industrial structure (the proportion of high-pollution sectors in gross industrial output), waste-production index (the waste per unit of gross value of industrial output volume) and waste source structure. Then, the contribution degrees of above four factors on pollution change were compared by the approach of LMDI. It can be found that the expansion of Chinese industrial size has distinct positive impact on the increasing of Chinese industrial pollution discharge, whose contribution degrees to the change of industrial waste water discharge and gas emission are 6440% and 131% respectively. However, with the decreasing of pollution per unit of industrial output, it reduce the growth size of Chinese industrial pollution discharge, its contribution degrees to the change of industrial waste water discharge and gas emission are -7290% and 46% respectively. Also, given for the proportion of high-polluted sectors in industrial output and pollution discharge is increasing, their contribution degrees to the increasing of industrial waste water discharge and gas emission are positive with the absolute values lower than that of industrial scale and waste-production index. This phenomenon maybe caused by Chinese government pay more attention on end treatment. So, we suggested that Chinese environment governance should put more concerns on industrial restructuring and production chain upgrading.

## **TRANSNATIONAL SCIENCE SPACES AND POLICY TRANSFER: CASE STUDY OF SINO-SINGAPORE SCIENCE PARKS**

**Julie Tian Miao, University of Glasgow, UNITED KINGDOM**

The current international policy agenda is still western dominant, so does the academic research. Compared to the rich North-to-South unidirectional policy exports, limited researches have been done on the policy mobility between emerging economies. This paper examines the joint Sino-Singapore science spaces in China in order to fill this gap. Using Suzhou Industry Park and Singapore-Xi'an Science Park as case studies, this paper relied on strategic documents, government websites and archives analysis, which put together a jigsaw puzzle on the motivations that drive actors to engage in this innovative project, the mechanisms of influence from both sides, as well as why this flagship project failed as a state entrepreneurship for Singapore but bounced back after the ownership transfer. More importantly, this paper identified what were the obstacles in policy learning through such transnational science spaces, and what the Singapore and Chinese governments have learnt from this failed join venture and turned the experience around into a constructive experiment. Following an inductive theoretical logic, the paper reflects on the learning alliance and strategic coupling literatures. The key lessons drawn from the case studies are the pivotal roles of timing, mediator, structure and environment of the coupling/alliance. Wider policy recommendations and following studies are outlined at the end of the paper.

## **THE TOURISM REGIONALIZATION LIKE A WAY IN INNOVATION FOR THE REGIONAL DEVELOPMENT**

**Ventura Enrique Mota Flores, Universidad del Caribe, MEXICO**

**Ana Pricila Sosa Ferreira, Universidad del Caribe, MEXICO**

Statistics from the World Tourism Organization (WTO) said that by 2030 more than one billion international tourists reached. This makes us think that should be innovative tools to manage these movements of people and capital. In that sense it is necessary that in the planning of tourism we should be to use regional development criteria. Today many world economies dependent on tourism and aim to guide their policies on attracting tourist markets. However, using traditional approaches to territorial planning that no longer meet the requirements of modern society, which results in natural and cultural resources of these countries it is pressed. In these context it was elaborated this research project. The theme of this paper is The Tourism Regionalization like a way in innovation for the management of tourist destinations. We have been identified in the planning and management of tourist destinations is that are not considered the essential aspects of the host regions of tourism, and then it gives like results saturation of destinations, stress of local populations, and their resources natural and cututral are being trivialized, overexploited and in general they are losing market value. The justification for this reseacrh is given in the context of the need to promote regional development, making tourism benefits occur in the host regions, to avoid regional imbalances and improve the quality of life of those living in host regions. This work is part of the research project: Tourism Regionalization of Mexico and it was found by SECTUR (Secretary of Toruism) of Mexican Goverment. The objective of this paper is to make a regionalization of tourism based on a methodology with the use of geospatial technology and support georeferenced analysis techniques with a regionalist living space from the functional definition of the territory. The exercise of regionalization is complemented by the use of another methodology based on two aspects as geographically statistic is the Multi-Criteria (EMC) assessment; and although not discussed in this document all geographical coverage, it is possible to notice a regional spatial reconfiguration of sufficient relevance to the use of nodes, subnodes or tertiary components. This article concludes with a brief discussion of the main findings and proposes a model for the study of the tourist regions of Mexico like a way to regional development.

## **AN ENTREPRENEUR'S COSMOPOLITAN MINDSET AND A COSMOPOLITAN CITY: PROPERTIES OF CO-EVOLUTION**

**Nikolai Mouraviev, University of Abertay Dundee, UNITED KINGDOM**

Certain cities around the world experience an increase in enterprise and business development and, hence, demonstrated that they are indifferent to economic downturns. These cities have become uniquely competitive owing to the variety of policies, strategies and instruments that include free enterprise zones, industry incentives, skill development programmes and successful investment strategies. The paper studies entrepreneurship in cosmopolitan cities, i.e. those metropolitan areas in which entrepreneurs, both local residents and foreigners, enjoy a highly comfortable environment for doing business. In cosmopolitan cities, such as London, Shanghai or Tel Aviv, entrepreneurs face minimal requirements meeting which means easy adaptation, so that entrepreneurs quickly get ready to do business. The paper aims to investigate the dynamics of a relationship between the cosmopolitan city's traits and principal elements of entrepreneurs' cosmopolitan mindset. This research aim poses a number of questions that the paper attempts to answer.

One set of questions refers to the nature of a cosmopolitan city. Do cosmopolitan cities exhibit similar characteristics and, if so, why? Assuming that cities are embedded in political, economic, financial, social, technological and cultural context of a certain nation, a city may have natural constraints to become more cosmopolitan than other cities in the same nation. Nevertheless, there are apparent similarities between world cosmopolitan cities, such as ease of company formation and government efforts aimed at creation of effective urban infrastructure for business development.

Another set of questions refers to the nature of an entrepreneur's cosmopolitan mindset. Do certain entrepreneurs around the world have common cosmopolitan traits? Assuming that an individual is naturally influenced by social, economic and cultural environment of her/his home nation, what makes entrepreneurs in different economies 'equally cosmopolitan', i.e. so that they possess common characteristics regardless of their ethnic roots, culture and education?

Yet another question is about a relationship between the cosmopolitan city's traits, on the one hand, and entrepreneurs' cosmopolitan mindset, on another. The paper considers entrepreneurship within the complex urban environment that includes policies and incentives aimed at sustaining private enterprise. Drawing on the co-evolution theory, the paper asserts that the two sets of characteristics - cosmopolitan mindset and the urban cosmopolitan environment - evolve simultaneously, feed each other and, hence, further each other's development. Drawing on the literature assessment and interview data, the paper puts forward propositions about critical micro-level and macro-level drivers that shape both the cosmopolitan city's traits and a cosmopolitan mindset. Preliminary results show that co-evolution of these drivers is in the core of another co-evolution, i.e. of an entrepreneurial cosmopolitan mindset and urban cosmopolitan environment. They exist together, they are connected with each other and, by feeding each other, they drive each other's development. The paper contributes to conceptualisation of cosmopolitanism by highlighting the properties of this co-evolution and underlying dynamics.

*Session: Natural/cultural resources, planning and development*

## **POST-SECULAR JOURNEYS. SPIRITUAL PLACES AND REGIONAL DEVELOPMENT**

**Mats Nilsson, Univeristy of Karlstad, SWEDEN**

Yesterday's and today's sacred places appear to play and increasingly greater role in tourism and in the long run for the regional development of the place and the region. This article places pilgrimage tourism – migration to Fisterra in focus through examine the migrations dynamics between post-secularism, tourism and sacred places in and through a context of regional development. Specifically, how tourism create and mediates the complex interplays between place and spiritualism in order to become a destination. In our increasingly pronounced post-secular era, there is a growing demand for pilgrimage, which in turn seems to be linked to the change in content and performance that the practice of pilgrimage is undergoing. There is still a lack of knowledge as to what is really driving the development of Fisterra towards becoming the end destination. This paper examines the regional development and emergence of Fisterra as a "new" end destination for the pilgrims in Galicia, in the north-western part of Spain. The staging of spiritual experiences implies that pilgrimages and holy places are being target and commoditized. I critically reflect upon the arguments for the devaluing of sacred sites through commodification under the sign of tourism and their 'replacement' in the tourist's agenda by celebrity factors amidst interpretations of so-called post-secular shifts in products and preferences as processes shifting the ground of meaning. The aim of this article is to shed light on and create understanding of the destination Fisterra and the meaning of the place and the role it plays for the pilgrims and the regional development. Empirically, the study is partly based on statistics and official documents and partly on interviews with pilgrims at Fisterra. The study concludes that contemporary regional development through tourism of Fisterra as the end of the journey should be perceived as an effect of the post-secular trend in Europe as well as a response to the fact that the historical goal of Santiago de Compostela is increasingly marked by commercialised mass tourism, which is a disadvantage in the context of pilgrimage. Fisterra and it's regional development should still be seen as a reaction to the commercialised trend rather than as an independent pilgrimage destination. However, each year growing numbers of pilgrims choose to continue to Fisterra after reaching the 'official' end, Santiago de Compostela, of the pilgrimage and by that shaping and driving the regional development of the place Fisterra.

## **THE CHALLENGE OF INTEGRATING POLLUTION AND CLIMATE CHANGE RELATED FACTORS INTO A RISK ANALYSIS FRAMEWORK AND ITS IMPLICATION FOR REGIONAL/URBAN PLANNING**

**Christian Ploberger, Independent Researcher (China & East Asia), UNITED KINGDOM**

This paper examines the various challenges that arise in the process of integrating climate change within a country risk management framework. Traditional political risk analysis focuses on subjects such as political stability, political systems, state-market interference, market access, legal regulations and property rights, the quality of infrastructure; to name but a few examples. Thus political risk analysis focuses on the actual political situation of a particular country and on country development to evaluate the risk for investment and business operations.

Since the impact of climate change can undermine a country's development strategy and negatively impact on the living conditions of a population, thereby carrying implications for political stability, climate change should be interpreted as a fundamental political risk and therefore be integrated as a regular feature of political risk evaluation. Even so, it should be recognised that the potential impact climate change can have will vary with the specific location in question, consequently its impact can vary with regard to the local, regional, national, international and global level. This in turn will have different implications for development prospects at various levels by potential impact on the livelihood of the population concerned, the existing infrastructure and on business operations.

Consequently, it is argued that though climate change related risk should be treated as a particular risk category, its impact should not be evaluated in isolation but in the context of a local, regional or national development perspective and that forms parts of the political risk framework one has to evaluate at the national level. It is also emphasized that a lack of perception contributes to a systemic failure of integrating climate change related risk into a political risk framework, after all, there has to be acceptance of a particular risk before one can assess its impact. Hence integrating climate change related risks as a standard risk category for country risk assessment will increase the visibility of specific climate change related threats in general but equally in its specific geographic context.

This in turn may facilitate a process of mitigation and adaptation and consequently will help to address climate change and the actual and potential threats it represents for development by facilitating the implementation of alternative development strategies. Alternative approaches to reduce the actual and potential impact of climate change related threats already exist, among them we can identify, increasing energy efficiency, renewable energy sources, to reduce pollution and specific policy approaches to urban planning. With regard to urban planning one may distinguish between adaptation (shifting from fossil fuels towards renewable sources of energy) and 'building from the scratch' (Eco city concept). Both strategies are critical especially with regard to China's development challenges which are characterized by a rapid process of urbanization among other challenges. After all, increasing urbanization and a related increase in a more affluent society lead to an increase in energy demands and consequently to a steep increase in pollutions. Yet, at the same time, urban areas are vibrant zones of economic activities and creativity, as such, if climate change related impacts devastate such a zone, the impact generated could transcend a mere local effect and carry potential negative impact for regional or national development as well.

Once again, identifying and highlighting climate change related risks should represent a standard feature of every country risk assessment and it is worth remembering that climate change represents a multifaceted issue, representing a combination of economic, developmental, technical, social and political factors. Consequently, increasing the awareness of the challenges climate change related risks pose for local, national or regional development should help to address related challenges to development at an earlier stage of urban, regional and national development planning.

A final, but important, point is, that risk analysis and risk management does not solely concern identifying risk but equally in identifying economic and business opportunities as well, and the impact of climate change

provides a good example for that. It also should be noted that integrating environmental and climate related risk into a country risk analysis should help to

*Session: Innovation and Entrepreneurship*

## **KNOWLEDGE BASE DIFFERENTIATION IN REGIONAL SYSTEMS OF INNOVATION AND ENTREPRENEURSHIP**

**Haifeng Qian, University of Iowa, UNITED STATES OF AMERICA**

This research aims to understand knowledge bases in regional systems of innovation and entrepreneurship. Using principal component analysis, it develops a new typology that differentiates urban knowledge bases into biomedical knowledge, management knowledge, engineering knowledge, arts knowledge, transportation knowledge and construction knowledge. The following multivariate analysis shows that management knowledge and engineering knowledge are of major importance in facilitating innovation and high technology entrepreneurship in U.S. cities. Additionally, the arts knowledge is associated with innovation but not entrepreneurship. This research sheds light on public policy to build a vibrant urban system of innovation and entrepreneurship.

*Session: Cities, city networks and growth*

## **RELAY CITIES IN THE REGIONALISATION OF WORLD CITIES NETWORKING OF MULTINATIONAL FIRMS (2010-2013)**

**Celine Rozenblat, University of Lausanne, SWITZERLAND**

**Elfie Swerts, University of Lausanne, SWITZERLAND**

Some grapes of cities that are more interconnected organize the global networks of cities. Some studies already underlined the regional character of the World cities networks' of multinational firms (Derruder et al., 2003; Alderson & Beckfield, 2004). However, most of them introduced a prior hierarchy that mainly oriented the results. This paper aims to identify these regions without introducing any prior hierarchy in the premises of the approach, using a clustering method based on "modularity", which outline the high densities of the graph. Only in a second step, we will assess the relative influence of the clustering regions on the hierarchy of cities according to their type of insertion in their clusters. A global database has been generated for the network of 1 million direct and indirect ownership links between the 800,000 subsidiaries of the top 3,000 multinational firms of the world in 2013, which are located within 1,205 metropolitan areas. A "Spin Glass clustering" procedure for weighted networks is used to identify different classes for activities aggregated by levels of innovation in industry or in services (OECD nomenclature, 2009). Comparing the obtained partitions with benchmarks using Normalized Mutual Information (NMI), the classes of cities correspond partially to Free Trade Zones but exhibit interesting cross-continent patterns. A few cities change their classes according to the activities taken into account. The multi-membership of cities to communities according to the level of activities' innovation is discussed considering the diffusion of innovations in urban systems since 2006, in a diachronic approach, applying the same clustering implementation.

Between these grapes, "relay" cities constitute "mandatory pathways" between the groups. A convincing example of this pattern is constituted by the national capitals, hosting national head-offices of the foreign subsidiaries of multinational corporations — head-offices whose invest in businesses or establishments elsewhere in the host country (Gould, Fernandez, 1989; Rozenblat, Pumain, 1993; Rugman, 2001; Alderson & Beckfield, 2004; Rozenblat, Pumain, 2007). On the opposite direction, capitals perform the function of "bridge" for most of enterprises located in the other national cities. This position of "relay", "intermediate" or "bridge", affords cities better access to the whole network as well as increased control over information transfers (Burt, 2005). One can interpret this cumulative process of concentration as a reinforcement of "social capital" of big cities as sociologists do at the micro level (Walker et al., 1997). The network positions of the other cities whose share similar attributes of "dependency" with regard to "relay" cities, display "equivalent" characteristics. Within each "sub-group" a marked hierarchy of cities' levels of centrality in the network is maintained, while



other cities remain altogether peripheral, being only attached indirectly to the network by virtue of their connection to participating cities.

Then we will emphasize cities that have “relay” role. These roles will be explained by both local factors like the level of national cities’ integration into the clusters’ and global factors like the relative evolution of the position of cities in the whole system. In particular, we’ll underline the Chinese cities emergence in these specific roles.

*Session: Ecosystem services, environmental protection and development*

## **LOCAL RESPONSES TOWARD CLIMATE CHANGE: A GEOGRAPHICAL AND INSTITUTIONAL MULTILEVEL GOVERNANCE ISSUE IN TWO INDONESIAN MUNICIPALITIES**

**Datuk Ary Samsura, Radboud University Nijmegen, THE NETHERLANDS**

**Saut Sagala, Institute of Technology Bandung, INDONESIA**

**Fernando Situngkir, Resilience Development Initiative, INDONESIA**

Over the past decades, local governments have been considered as important players in the area of climate change policy. As climate change impacts are manifested locally, local governments can noticeably be seen as major contributors to climate change and at the same time also vulnerable to its impact. Accordingly, many local governments around the world nowadays have developed their own strategies and policies as their response towards climate change. Although climate adaptation is still the main focus in most of local climate change policies, mitigation measures can also be found on many local political agendas. Moreover, numerous studies have shown that geography and institution have become important factors for initiating and sustaining climate change mitigation and adaptation policies especially at the local level (see e.g. Næss et al., 2005; Gustavsson et al., 2009). In this article, these two factors are examined for the case of two municipalities in Indonesia.

As Indonesia is among the world’s largest emitter of greenhouse emission gases, which are the root causes of the current global climate change, the country’s action in climate mitigation and adaptation will perceptibly have a lot of impact, not only to its people but also to global community. The pressure to Indonesian government has been high with this regards and Indonesia has become a frontrunner in the international limelight due to the country’s eagerness to reduce its greenhouse emissions by roughly 26 percent (World Bank, 2010). Indonesia has also gotten the world’s attention when the Government of Indonesia hosted the United Nations Climate Change Conference in Bali in December 2007 to discuss solutions to Indonesia’s as well as global climate change concerns. The conference culminated in the adoption of the Bali Road Map, a variety of decisions and programs that will reach toward a safer climate future.

The study focuses on analysing local climate change mitigation and adaptation programs and policies as a case of multilevel governance in Indonesia. First it starts with the description of the main impacts of climate change that Indonesia has on its economy, public health, and environment as well as biodiversity. Second, the paper explores the sectors that contribute to the greenhouse gases (GHG) emission, including forestry, peatland, agriculture, energy, transportation, industry and waste. Subsequently, it explains the concept of multilevel governance by making the distinction between different modes of multilevel governance, namely (i) as intergovernmental relationship, and (ii) as multi-actor and multi-sector network. Subsequently, the relevance of those different concepts for both climate mitigation and adaptation policies is analysed. Following this, a comparative study of two Indonesian municipalities, a city (urban municipality or Kota in Indonesia) and a district (non-urban municipality or Kabupaten in Indonesia), will be reported and discussed, by focusing on their particular geographical and political determinants with regard to their climate change mitigation and adaptation policies. Factors that constrain or facilitate the ability of those local level institutions to carry out mitigation and adaptation measures are also analysed. As local policies can be highly influenced and shaped by interactions at the local level as well as interactions with structures at higher governmental level that may mandate, encourage and inform the actions (Wilbanks and Kates, 1999), an underlying question addressed by this study is also the extent to which the local policies related to climate mitigation and adaptation are somehow optimal with the measures that were carried out at other level, particularly national level. The conclusion of this study will reset the arguments and discussions within the conceptual framework of multilevel governance on climate change policies.

## **THE CHALLENGE FOR SMART, SUSTAINABLE AND INCLUSIVE GROWTH IN THE EUROPEAN UNION: A MIDTERM REVIEW OF THE EUROPE 2020 STRATEGY**

**Karl Peter Schön, BBSR Bonn, GERMANY**

Europe 2020 is the European Union's current ten-year growth strategy. It was launched in 2010 to create better conditions for smart, sustainable and inclusive growth in the European Union. Given the ten-year period 2010-2020, the Europe 2020 strategy has reached its midterm point in 2015. This gives reason for analysing the current state of Europe 2020 implementation and for discussing the continuation and a possible revision of the strategy in the second half of the decade.

The Europe 2020 Growth Strategy has three main dimensions: smart economic growth, sustainable development, and social inclusion. Five headline targets have been agreed for the EU to achieve by the end of 2020. These cover employment; research and development; climate/energy; education; social inclusion and poverty reduction. The EU2020 Strategy follows an OMC (Open Method of Coordination) approach that orients national governments towards European-wide target indicators, demanding national policy measures to reaching nationally defined target indicators, and annual national reporting to the European Commission. Europe 2020 is part of the political process called the European semester. The national policy measures are supported by European lighthouse initiatives.

This contribution presents the OMC method as well as empirical results how socio-economic development has evolved in the light of the economic and financial crisis. A special focus is on the social dimension of the Europe 2020 strategy, not only at a European and national, but also at regional and local scale. It is argued that it is not sufficient to break down the European targets into national sub-targets, but necessary to specify differentiated regional and local contributions to those targets and involve regional and local administrative authorities in the multilevel OMC process.

Within the socio-economic sub-targets of the Europe 2020 strategy, the fifth target Fighting poverty and social exclusion faces particular political and methodological challenges. In contrast to the other sub-targets, for poverty and social exclusion there is neither a consistent system of EU target indicators nor a systematic breakdown of European into national targets (but rather a sort of 'menu' from which member states can chose from), and as a consequence there is no systematic OMC reporting and monitoring. Notwithstanding these methodological deficits, it is apparent that it is in particular this field of poverty and social exclusion that was hit hard by the crisis so that it seems to be clear already now that the ambitious targets agreed in 2010 cannot be reached in 2020.

The presentation intends to contribute – from a scientific and analytical perspective – to the current discussion on a revision of the EU2020 Strategy, focussing on the dimension of social inclusion, discussing components and indicators incl. EU-wide empirical results of this construct, and presenting some thoughts on a multi-level and multi-actor OMC method in this field.

## **THE CONJUNCTION OF NETWORKED AGGLOMERATION AND LOCATION FACTORS IN CHINESE CITIES: TAKING FDI AND DOMESTIC INVESTMENT AS EXAMPLE**

**Shuai Shi, UNITED KINGDOM**

**Ronald Wall, Erasmus University of Rotterdam, THE NETHERLANDS**

The emergence of agglomeration improves productivity and provides fundamental conditions for forming a market and commodity economy. There is no doubt that metropolitanization is the most typical product of the agglomeration phenomenon and takes advantages of the agglomeration effect to the greatest extent. The UN World Urbanization Prospects predicts that 64.1% and 85.9% of the developing and developed world respectively will be urbanized by 2050. In particular, agglomeration and its spill-over effect have drawn the main

attention in agglomeration studies. In order to articulate agglomeration effects and spill-overs, location factors are highlighted as endogenous drivers, such as local market size, labour pool, accessibility, urban size and landscape, industrial configuration, and institutional context, university alliances, high-tech clustering, urban lifestyle, and cultural atmosphere. On the other hand, some scholars criticize urban attribute (location factors) as overemphasized analysis and appeal to the significance of urban connectivity and network analysis. Combining the agglomeration effect and the attribute of capital flows, Foreign Direct Investment (FDI) and Domestic Investment (DI) are typical proxies to express the conjunction of a network approach and location factor analysis. Accompanying accelerating urbanization (from 35.39% in 2000 to 52.57% in 2012) and integration with the global market, China has become both the second biggest economy and the biggest FDI host country in the world. This paper aims to estimate Chinese urban performance in agglomerating Foreign Direct Investment (FDI) and Domestic Investment (DI) through deconstructing inter-city networks and location factors. All the investment data is green field investment which is derived from FDI markets database and ORBIS database. The positions and patches of city-nodes are illustrated through Social Network Analysis (SNA), which is characterized by networked agglomeration. In FDI network analysis, It is found that the difference of connectivity index of top source cities is small while the difference of connectivity index of top destination cities is relatively large, which indicates that imbalance is more evident in Chinese cities. As a result of a core-periphery analysis, the final fitness is 0.445 and there are 34 Chinese cities in core block. Most core cities are from the Bohai Economic Rim, Yangtze River Delta, and Pearl River Delta. In the DI network analysis, it is found that the location of DI is not confined to geographical proximity. In the second part, through establishing a multiple regression model, it is shown that market openness-related factors and talent-related factors contribute most to agglomerating FDI and DI respectively. Specifically, in Humanities Factors, science and technology is the most significant factor contributing to both FDI and DI. In Environment Factors, urban landscape is attractive for FDI while public transportation is underpinned for DI. In coastal cities, regardless of market openness and staff welfare, science and technology contribute most to agglomerating FDI and DI. In inland cities, thriving real estate is a prominent sector in agglomerating investments meanwhile indicating an imbalance of investment-portfolio. In conclusion, investors and urban policy makers are advised to consider networked agglomeration phenomenon and significant location factors in the process of making development strategies.

*Session: GVC and clusters 1*

## **GLOBAL LINKAGE, REGIONAL COMPETITION, AND LOCAL ENVIRONMENT: FIRM GROWTH IN THE METAL PRODUCT INDUSTRY OF CHINA**

**Jin Shi, Zhejiang University of Technology, CHINA**

**Canfei He, Peking University, CHINA**

The 1998-2007 period witnessed another round of spatial restructuring of the metal product industry of China. Aggregated data revealed that the industry ceased to agglomerate in the coastal area, and started to relocate towards the inland around 2003. By decomposing that industrial dynamics into firm-level activities using the Annual Survey of the Industrial Firms in China, firm growth proved a significant driving force, second only to firm entry. A tri-polar analytical framework encompassing “global linkage, regional competition, and local environment” was built to investigate the factors of incumbent firm growth at different geographical scales. The firm-level empirical model suggested that incumbents grew faster if they were engaged in the global market, contained foreign capital, and/or located in cities with larger market potential and higher level of related variety. In addition, localization economies, market environment, and support from local government proved insignificant to promote incumbent growth while urbanization economies would constrain the growth potential of incumbents because of congestion effects. A case study of Yongkang City in Zhejiang province, one of the largest clusters of metal products, was conducted to collect down-to-earth information from firm interviews to compensate for armchair theorizing. Those close dialogue complemented the stylized facts from the quantitative method.

**METROPOLITAN MODELS OF INNOVATION IN EAST ASIA: COMPARING SHENZHEN, TAIPEI, SEOUL, AND TOKYO**

**Wang Shiqi, Chinese Academy Of Sciences, CHINA**

**Jung Won Sonn, University College London, UNITED KINGDOM**

**Sunman Park, Seoul National University, UNITED KINGDOM**

**Haeok Choi, Spatial Information Research Institute, REPUBLIC OF KOREA**

Using U.S. patent data, this paper looks at how four of the most innovative metropolitan areas in East Asia (i.e., Shenzhen, Taipei, Seoul, and Tokyo) differ in their models of innovation. Recent discussion on regional innovation system suggests that different regions have different systems of innovation. Most of the papers on the regional differences in innovation systems are based on qualitative methods. This paper attempts to complement the existing literature by offering analysis of a large amount of quantitative data. We calculate technological diversity, average size of firms, growth rate, the area's share in the whole nation, and other indices using U.S. patent records from 2000–2010

**PROVINCE AND HANGZHOU CITY REGION AND THE 'PRIME DRIVER COMPANIES' OF GLOBALISATION AND TECHNOLOGICAL DEVELOPMENT; A CHINESE SILICON VALLEY IN THE MAKING?**

**John Shutt, Leeds Beckett University, UNITED KINGDOM**

**Huifang Cheng, Zhejiang University of Technology, CHINA**

Much has been written about the leading role of Hangzhou City and Zhejiang province and the rapid growth and transition of the Chinese state from a socialist state to one embracing developmental and entrepreneurial state characteristics- 'actively promoting globalisation, economic development and urban growth.( see for example Ye Han, Denis Wei 2012,Wei 2005.2007). We have previously reported on our joint British council research programme between the two universities since 2009 (British council PMI2, Final report) and on developments in the Hangzhou economy (Shutt, J and Huifang C, 2009).

This paper focuses on identifying the key 150 enterprises that are currently driving the provincial economy and looks at their role in making Zhejiang one of the most dynamic of provinces in China.

Despite the continuing economic crisis and stock market shocks, growth in Zhejiang appears to have accelerated in the first quarter of 2015. Hangzhou is being held up as a leading example of the growth of the high technology sector and the ability to build advanced services and advanced manufacturing and to this extent is set to continue to lead the transformation process in China. A thriving tourist and service sector sits alongside the high technology sector and Zhejiang has a strong private sector set of companies as well as leading SOE's which need to continue to adapt and transform for a more competitive role and the adoption of new technologies in the 2016-2020 plan period. Rationalisation and restructuring and adaptation as outlined in the Made in China 2025 strategy published in May 2015, is a key component of the policy environment. The paper sets out recent trends and developments in both the Provincial and city economies of Zhejiang and argues that Hangzhou is a crucible hub for Chinese modernisation processes.

A silicon valley in the making?

Ten case studies in the paper illustrate the top ten prime drivers of the Provincial Economy which have developed over the last thirty years, and the most famous is less than 20 years old.

At the heart of the high technology strategy is the company 'Alibaba' which was established in 1999 by Jack Ma and which is one of the leaders of the Chinese e commerce world best known in Europe and the USA. It has developed from a B2B online trading platform into a diversified group covering the on-line sales platform (Taobao.com and Tmall.com), the third party payment platform (Alipay) to the online shopping (Etao.com) and e-commerce cloud computing (Alibaba Cloud computing). Its legend- like development in 15 years is not only

attributed to that of the founder, but to open and continuous innovation and transformation, spawning technology start-ups in a wide variety of new media and logistics sectors. Alibaba is at the centre of the Silicon Valley hub which is emerging in Hangzhou City- region and now employs more than 30,000 on two campuses in the City.

‘There is a popular saying in Hangzhou- back in the day, girls wanted to marry boys who worked for Hangang ( the state owned Hangzhou Iron and steel group) But now they want to marry boys who work at Alibaba’ (Cai Jingyou, quoted in Reuters,20th May 2015).

A number of the company cases elaborated here illustrate the emerging entrepreneurial state in Zhejiang Province and reveal for the first time to a western audience the emerging Prime mover companies. These are drawn from the forthcoming book:

The development, innovation and the Transformation of Chinese Global companies 2016.

Case Studies from Zhejiang Province

Zhejiang University Press/Emerald Publishing

*Session: Industry, Innovation and R&D networks*

### **LOCATION, KNOWLEDGE AND NETWORK OF CHINESE R&D CENTERS: THE CASE OF HUAWEI**

**Yuefang Si, East China Normal University, CHINA**

**Abstract:** In the last ten years, Chinese multinational firms (MNEs) have become increasing important drivers for the globalization of R&D and innovation activities. Different from developed economy MNEs, Chinese firms are short of ownership advantages in the early stage of internationalization such as lacking technology, and they are engaged in active knowledge acquisition to get off disadvantages as latecomer firms. Therefore, their R&D strategies and international location decisions are expected to show different characteristics. This paper is based on an in-depth analysis of the R&D location choices and the global knowledge network management of Huawei, a Chinese telecommunication firm known for successful technological catching-up and internationalization. Our findings suggest Huawei have adapted a strategy of multiple global centers of learning with one dominant center of coordination. Huawei have tended to establish home-base-augment R&D centers in global outstanding knowledge centers such as Stockholm and Dallas to get access to customers, technically first movers, universities and local technique talents. These overseas R&D centers are the main actors to realize local knowledge integration, basic scientific research and co-publication. On the other hand Shenzhen, where Huawei headquarters are located, have functioned as the only center of global knowledge coordination, and patent application in particular. The spatial distribution of learning and R&D performing activities is something different than the spatial distribution of coordination and control.

*Session: Urban-rural relations, mountain areas land and resettlement*

### **NEW-FORM URBANIZATION AND NEW-FORM RURALITY: RE-ENGINEERING URBAN-RURAL RELATIONS IN CONTEMPORARY CHINA**

**Nick Smith, Yale-NUS College, SINGAPORE**

In March 2014, China’s central government released the “National Plan for a New-Form of Urbanization.” This ground-breaking document for the first time lays out an explicit national program for the urbanization of China’s territory and population, including more than 100 million rural residents within the next five years. Combined with the statistical transition of China’s population to “majority urban” in 2011 and the gradual slowing of economic growth, the national urbanization plan has elicited significant speculation regarding the characteristics of China’s urban future.

Equally profound—though less widely recognized—are the implications for rural China, which will be transformed fundamentally by the national urbanization plan. In short, the state’s current social engineering project promises to redefine Chinese rurality, from a system of cultural and social organization into a

consumption commodity. Household-based agricultural practices are being replaced by industrialized farms and agro-tourism sites, which produce commodities for consumption by urbanites. Village collectives, which have long served as a form of grassroots organization for China's rural areas, are gradually being replaced by the expansion of the state's administrative apparatus. And land use rights introduced at the beginning of the reform era are giving way to wage labor, shareholding contracts, and newly established welfare programs.

This paper explores the implications of this newly emerging rurality China's urban-rural relations: What does it mean for the sustainability of China's urbanization program? How does it affect the lives and livelihoods of rural residents? And will these new rural practices exacerbate or alleviate urban-rural inequity?

The paper is based on several years of fieldwork across China, including more than 15 months ethnographically investigating Chongqing, one of the metropolises of China's predominantly rural west. This has included interviews with planners, policy-makers, political leaders, and residents, as well as the analysis of policy and planning documents. I examine the policies and practices implemented by Chongqing's municipal government and their effects on the municipality's villages and villagers. In particular, I focus on Chongqing's status as an experimental area for the national urbanization plan and for urban-rural coordination—a precursor to the national urbanization plan. These policies include, for instance, reforms to China's household registration program and the marketization of certain rural land rights, as well as the active relocation of Chongqing's population to major urban areas.

*Session: Industry, Innovation and R&D Networks*

## **TOWARDS SMART CITIES BY INTERNET OF THINGS (IOT) IN CHINA**

**Tao Song, Chinese Academy of Sciences, CHINA**

In recent years, smart technologies and networking solutions, such as Internet of Things (IoT), have been adopted by most leading cities in China as ways to revitalize economic opportunities and strengthen their global resilience to climate change. This paper presents the concept of the smart city, which serves as a complex system by integrating sensors, data, applications, and organizational forms to make cities more agile and sustainable when faced with global climate changes. The paper provides a comprehensive assessment of smart city initiatives in China in recent years. 6 key conceptual dimensions of smart city practices are classified: energy, agriculture, transport, buildings, urban services, and urban security operations. Chinese smart city policy and practices explore renewable energy and resources, increase public convenience, and make cities more comfortable and citizen-friendly. Critical concerns are explored in such areas as integration (within the urban system, with other cities); governance; innovation; and finance. Finally, a policy vision is outlined: to build up public-private collaborative networks; to encourage more innovations and investments in smart cities initiatives; and to put more emphasis on Smart services.

*Session: Coordination and planning of cities*

## **SCHEMES TO STRENGTHEN THE REGIONAL GOVERNANCE OF EMPLOYMENT SERVICES**

**Kim Su Won, Korea Research Institute for Vocational Education and Training, REPUBLIC OF KOREA**  
**Kim Ga Youn, Korea Research Institute for Vocational Education and Training, REPUBLIC OF KOREA**

Employment Services are the services to eliminate the problem of asymmetric information of job offer and job seeker, and to increase the employability of job seekers to provide appropriately the employment support services through adjustment of the eye-level of job offers and job seekers. South Korea is increasing significantly the demand of the employment services, for example, the improvement of job mismatch, the resolution of SME's workforce shortage, the support to move into better jobs while the growth potential is falling recently.

The employment services in Korea are that the regional based is vulnerable and the service level is low. In particular, The employment support services in the local governments are being made around the vulnerable groups, for example, the elderly, the disabled, the head woman of household etc.. The employment rate of the job seekers in 2012 was 44.9% level and was mostly the simple labor jobs. The private employment agency has also carried out the relevant work of the government and the local governments around the region vulnerable.

Some of the local governments, for example, Seoul City, Gyeonggi Province, and Incheon City operate job centers separately and support for the employment support services through outsourcing. But it was the lack of linkages with the central government (Ministry of Labor) and the regional differentiation was also not great. Most of the local governments are a limit to leverage expertise because the concurrent position of one or two civil servants, the use of private contractors and public works, and so on.

It is required the effective network deployment that is based on the area to solve this problem. It needs to build a network of community-based structures so that the local residents can be provided the integrated services of employment and welfare in the community. The similar organizations of public and private sector within the area are sharing the policy information and services to each other, and are needed to share the roles and the responsibilities for each function and to strengthen closely the cooperation taking into account the flow of the subjects and services. In other words, it is desirable to build the empowerment councils and the confidence as the regional partners of the capacity building projects of the local subjects, for example, the local government, the central government (Employment Centre in the Ministry of Employment and Labor), the chambers of commerce, the workers' organizations, the employers' organizations, the industry foundation, the lifelong learning centers, the labor welfare centers etc. within relevant areas through configuring regionally the employment and human resources development agency.

*Session: Culture, community and development*

## **CONSTRUCTING CHINESE ENTREPRENEURIAL CITIES: RESTRUCTURING SOCIAL RELATIONS WITH FLAGSHIP CULTURE-LED REDEVELOPMENT PROJECTS IN XI'AN**

**Yixiang Sun, University College London, UNITED KINGDOM**

Since Harvey (1989) published his salient work three decades ago, the notion of entrepreneurial governance has been widely adopted in academic discussions on power mobilisation of contemporary regeneration practices. Concerns have been raised about flagship redevelopment plans with cultural elements that are promoted to use culture as the 'source-ground' (Miles and Paddison, 2005) around which social and economic problems can be solved painlessly. Such developmental schemes, according to Hall and Hubbard (1998 :8), lead to 'cultural transformations of previously productive cities into spectacular cities of and for consumption, populated by a harmonious and cosmopolitan citizenry' and attempts to 'generate new forms of entrepreneurialism within urban populations' (Raco and Gilliam, 2012). While for a growing number of scholars, the elitist and growth-centred stance embedded in entrepreneurial policy-making inevitably incurs social injustice and marginalisation (Ong, 2007). However, theories of entrepreneurial governance are frequently built on a Western-centrism and generated from the post-War experience of countries in the Global North, while their variation in cities of the Global South with different political traditions still remains unclear. Even studies trying to find out situations in non-Western states, it is often the comparatively more prominent and internationalised cities in those regions, such as Hong Kong, Singapore, and Shanghai, that scholars focus on (e.g. Jessop and Sum, 2000, Wu, 2000).

It is in this context that the author conducted an investigation on the implementation of entrepreneurial policies in a culture-led flagship redevelopment project in one of China's inland city--that of the city of Xi'an. This research explores how culture has been used as an alternative approach to rescale inter-city social order, and how the concept of entrepreneurialism has been adopted in promoting development as a tactic to reconcile tensions and justify controversial agendas. Drawing on data collected from semi-structured interviews with regional and city policy makers, private business leaders and local residents, it argues that the mobilisation of entrepreneurial policies in this case bears significant difference with that in the Western context as there is a combination of government dominance and penetration of the power of private sectors and local citizens. In this way, the paper contributes to the existing literature on China's contemporary regional and urban governance transformation, culture-led redevelopment and comparative urbanism and helps to deepen the understanding of political mobilisation under the non-Western context with a focus on factors in less globalised regions in China. It concludes that there is no universal framework of entrepreneurialism fitting all circumstances and therefore it is the task for policy-makers and academia to think about how to tailor it for the best practice in a specific context.

## **THE CREATION OF URBAN VALUE IN CHINA: THE CASE OF THE MODERNIZATION OF QUJING CITY IN YUNNAN**

**Thierry Theurillat, University of Hong Kong, CHINA**

This article proposes an analytical framework around the concept of urban value creation in order to gain a transversal understanding of the various interactions between urban planning, the strategies of urban modernization and growth through the development of the local real estate market, and the local financial system. This framework comes from a reflexive and evolutive methodological research approach both based on existing literature and empirically founded. The urbanization process of the fourth-tier city of Qujing in Yunnan province can illustrate China's 'land-driven' growth model emphasized by urban geographers. In this model, land is an important leverage. On the one hand, the commodification of the urban state-owned land brings significant income to local governments. On the other hand, the urban planning and building is based on coalitions between local governments and real estate companies. In short, these two actors are at the basis of a virtuous cycle of capital accumulation and urban value increase. Some links are still missing and thus prevent a broader understanding of China's urbanization process and more specifically of the creation of the urban value. Based on a convention about the increase of urban value through economic growth and urban modernization, we posit that "land-driven" model has to be approached through the strategies of four groups of actors. These four groups of actors, that all demonstrate the behavior of an investor, are the local government, real estate companies, individuals and financial institutions, all of which are involved in the search for urban rent.

## **SPATIOTEMPORAL ANALYSIS OF INDUSTRIAL POLLUTION IN TRANSITIONAL CHINA**

**Guanghui Tian, Henan University, CHINA**

This paper investigates the spatiotemporal variation of Industrial pollution of China's provinces and major cities, and explore the underlying factors causing the pollution by using Exploratory Spatial Data Analysis. Based on the panel data of Industrial pollution between the years of 2000 to 2012. Results suggest: Industrial waste water, industrial so<sub>2</sub>, industrial smoke dust pollution control has improved. the governance efficiency in Eastern region is higher than the national average, the Midwest is below the national level, and growth rate of the emission intensity is higher than the national average in eastern. Industrial solid waste and Industrial smoke dust (powder)'s regional relative difference is widened. Regional disparities continue to become the main driving force of industrial pollution, but the strength difference between decreases on regional differences also play a important roles. Five kinds of Industrial pollution intensity showed a positive correlation, spatial pattern of industrial pollution intensity showed a trend of gathering. Mainly dominated by HH and LL types, and the LL, HL and LH areas are transferring to the West. Pollution of factors has different driving directions and the Structure effect is the most important factor.

## **LIFECYCLE MODEL FOR DISTRIBUTED PV APPLICATION: EVALUATION ON A COMMUNITY IN NORTHERN CHINA**

**Xin Tong, Peking University, CHINA**  
**Wei Wang, Peking University, CHINA**  
**Mo Li, Peking University, CHINA**

China is now leading in world's installment of new PV system. The distributed PV are developing quickly in recent years. Previous studies focused on economic feasibility and grid impact of PV system. In addition, as the traditional solar cell materials bring high energy consumption and pollution in the production process, academia has published a large number of empirical studies on the life-cycle environmental impact of various photovoltaic materials. However, these studies have not analyzed comprehensively at the community scale. Applying solar



technology at the community scale is an important direction. In particular, different from the United States and Europe, people mainly live in the form of centralized unitary apartments in China, PV application in community is difficult to achieve by the way of household residents adoption. Therefore, a systematic community-level solution should be carried out to promote the adoption of distributed solar energy applications. Taking ZhengGezhuang in northern Beijing as a case, this study analyzed the feasibility of PV application in a typical community of northern China from the view of economic, technology, energy and material.

Based on the local condition of ZhengGezhuang, this study comparatively analyzed the economic feasibility and payback period of polycrystalline silicon and CIGS modules applied in the community under all-grid mode and occupied-before-grid mode by using PVsyst V6.5 software. Secondly, the paper presumed the impact on grid of PV generation by simulation analysis based on the PV power generation and power measured data in Zheng village. Thirdly, applying LCA method, we examined the energy payback time of the two kinds of technology, in order to assess the contribution of PV applications to reduce CO<sub>2</sub> emissions. Last, applying material flow method, we estimated the amount of end-of-life PV material and proposed recycling solutions. The conclusion summarized the feasibility and existing problems of PV application in community and proposed topics for further study.

*Session: Agglomeration, investment, resources and city growth*

## **NATURAL RESOURCE EXTRACTION, DECENTRALIZATION AND REGIONAL DEVELOPMENT**

**Jean-François Tremblay, University of Ottawa, CANADA**

**Robin Boadway, Queen's University, CANADA**

**Motohiro Sato, Hitotsubashi University, JAPAN**

In this paper, we analyze a natural resource extraction problem in a two-region economy with mobile labour. The main focus is on the relation between resource extraction, migration of labour among regions, regional development and aggregate income. The analysis examines, in particular, whether decentralized resource management at the regional level may lead to distortions in the optimal inter-regional allocation of labour and lower long-run economic growth.

Part of the economic growth literature has examined the relation between resource extraction and growth, emphasizing in particular the possibility of 'resource curses'. It has been shown, for example, that a resource boom can lower aggregate productivity growth by shifting factors of production away from sectors, or regions, where production involves increasing returns-to-scale. Our analysis extends part of this literature by examining how regional decentralization in the management of natural resource exploitation may potentially exacerbate this problem. Our analysis is also related to the fiscal federalism literature, in particular the areas within that literature that focus on efficiency in the allocation of labour across regions, and on the existence of multiple equilibrium allocations of labour in the presence of agglomeration effects. We contribute to this literature by introducing a dynamic non-renewable resource extraction problem in a federal setting with inter-regional labour mobility.

The model we consider has the following features. One of the regions specializes in manufacturing goods production while the other produces services and extracts a non-renewable natural resource. The manufacturing sector exhibits increasing returns-to-scale if the level of production is sufficiently high. The analysis shows that there are multiple equilibrium allocations of labour towards which the economy may converge in the long-run depending on the initial stock of natural resource and the initial distribution of labour. Under decentralized resource management, the level of extraction set by the government of the resource region is higher than in the federal optimum, which tends to enlarge the set of initial conditions under which the economy converges to the low-income equilibrium in the long-run. The optimal path of extraction from the perspective of the entire country satisfies a modified Hotelling's rule that takes into account the impact of resource extraction on manufacturing production and therefore on the potential dilution of the gains from regional economies of scale.

The results of our analysis have practical implications for natural resource management and regional development policies, especially in countries with diverse regional production structures and spatial concentration of natural resource endowments.

## **FINANCE FOR URBAN DEVELOPMENT: ASSESSING TAX INCREMENT FINANCING FOR THE DUTCH SPATIAL PLANNING TOOLKIT**

**Erwin Van der Krabben, Radboud University, THE NETHERLANDS**

**Liz Root, Radboud University, THE NETHERLANDS**

In the Netherlands local government has historically played a central role in the physical planning process, including land acquisition, site preparation, and public infrastructure provision. By acting as an active player in the land market, municipalities were able to embed and recover the costs of local public infrastructure, such as underground infrastructure and utilities, and community facilities such as parks and play areas in the land price. However, even before the recent economic crisis in 2008, the financial risk and steering role in the process taken by municipalities was in question. The degree of financial risk and substantial land holdings held by municipalities has been widely reported and criticized in the media since 2008. Discussions have since ensued about alternative models and consideration of instruments that do not rely on growth nor driven by the public sector. Numerous studies have been commissioned by the national government that identify planning and financial instruments from other countries as possible tools in the Netherlands to stimulate investment and broader participation from market players in the planning and development process. Tax increment financing (TIF) has been cited as a possible mechanism for Dutch municipalities. However, few studies have analyzed the use of TIF in the Netherlands from an institutional perspective. Research about TIF in the Netherlands generally focuses on four themes: identification of generic technical features; secondly, the degree to which the mechanism is a sufficient incentive to draw private investment, given the public-sector-driven nature of land development in the Netherlands; thirdly, the inherent risks involved in relying on projected market growth; and, fourthly, more broad criticisms related to the purpose of property taxes, e.g., the argument that property taxes are meant to function as a modest buffer to fill budget gaps left by inefficient distribution of transfer payments from the national government. These points touch on conventional issues (pro's/con's) associated with TIF, but taken separately we do not get robust understanding about the degree to which TIF is a potential institutional fit, considering technical, social, and political dimensions inherent in policy instrument selection.

Against this background, this paper explores tax increment financing (TIF) as a potential financial instrument to facilitate investment in localized public infrastructure, as an alternative and/or in conjunction with existing physical planning instruments in the land development process conventionally used in the Netherlands. A distinction between physical instruments and financial instruments that can be used to influence the development process can be made. The former type of instrument acts on land and buildings in relation to development approval and building processes and the latter. Particular types of measures include grants, taxes, and levies. Using this typology we understand tax increment financing to be a financing instrument that can be used by local authorities to influence the development process. We categorize tax increment financing accordingly because it is an instrument that is designed to capture the expected future property tax value increment generated from local area investment, rather than (necessarily) utilizing physical instruments such as land acquisition.

TIF is explored in the context of Dutch planning, land development, and the broader municipal financing system. For our analysis, we used qualitative research methods including semi-structured interviews, document analysis (municipal and project policy and programs; local planning and land development frameworks; and reports and policy documents related to Dutch municipal financing), and a telephone questionnaire.

## **SPATIAL-TEMPORAL ANALYSIS ON JIANGSU'S REGIONAL INEQUALITY AND INFLUENCING FACTOR**

**Hui Wang, Henan University, CHINA**

This paper uses the coefficient of variation, ESDA and the geographical detector tool to analyze the evolution trend and the spatial pattern, within 2002-2013, of Jiangsu's regional inequality, as well as the kernel influencing

factor to the spatial disparities of economic growth. The result shows that: (1) Regional inequality congruously presents an initial increases and later declines at the three regions, prefectural cities and county level; it is more pronounced at finer spatial scales. (2) Distinct spatial clustering characterizes, at county level, the regional economic development of Jiangsu province, along with the hotspot distribution of economic average growth index converting from Suzhou-Wuxi-Changzhou to Long Hai axis. Spatial pattern of prefectural cities is parallel to the former. (3) The county level factor detection shows that key determinants of economic growth rate vary for three individual regions, which manifests, to some extent, counties of each region are within different development stages, with different models of economic growth. The factor detection of prefectural cities is generally strong, indicating that determinants of economic growth possess geographical effect of spatial scale.

*Session: Coordination and planning of cities*

## **EMERGING URBAN-REGIONS IN CENTRAL CHINA: CASE OF UPPER YANGTZE RIVER DELTA**

**Lei Wang, Wuhan University, CHINA**

**Bowen Zhai, Wuhan University, CHINA**

China's remarkable urban growth has led to intensified inter-urban competition as well as the rise of negative externalities that prompts the central state to reassert its functional importance with regard to local economic governance. The past decade witnesses a blossoming of regional plans in China that fundamentally transforms the country's spatial landscape from the conventional division according to administrative jurisdiction or geographical boundary into a mosaic type based upon urban-regions. It is in this context that China's emerging urban-region making is read as the state re-articulation in space formation on the regional scale. By and large, existing studies on the production of urban-regions in China can be grouped into two broad categories with their focuses on central and municipal scale respectively. One strand discusses the demarcation disputes between NDRC, Ministry of Housing and Urban-Rural Development (MHURD), and Ministry of Land Resources that has overlapped functions in regional plan making. The other group mainly deals with conflicts between local governments arising from their different administrative rank and resource allocation. Relatively little attention has been paid to coalition-building efforts in constructing urban-regions, especially those initiated by key actors on medium level in China's political system such as provincial governments.

This paper works to fill the research gap in current literature on China's regional governance by examining the proactive role of provincial governments in constructing both discursively and substantively a mega urban-region in Upper Yangtze River Delta (UYRD). It finds that as regional plans are used by central state to re-articulate its sophisticated functions in building national economic coherence in a global system, they also become the tool for entrepreneurial local states within plan coverages to brand their places as strategic nodes with perceived new ranks in national hierarchical urban system and lobby central ministries or large state-owned-enterprises (SOEs) for preferential treatment in land and loan quota or project allocation. With resource allocation increasingly based upon regional plans, a more realistic entrepreneurial strategy for individual places to survive the inter-urban competition is to coalesce with one another to construct city-region and have it incorporated into regional plans made by central state. Thus, building urban-regions becomes a new form of urban entrepreneurialism that unfolds itself on provincial scale. Province, a level of government that is usually engaged in bureaucratic management of affairs across sectors, now becomes the major actor in reshaping China's regional landscape.

Specifically, this paper traces the historical evolution of the concept of regionalism in the contexts of both industrialized West and transitional China. Over the whole 20th century, regional governance in western world has gone from physical means of core-periphery spatial design, through government-led rational plan-making to network-based interactive participation of multiple agents. Unlike recent urban-regions in Western countries arising from global economic restructuring and changing politics of scale, the emerging city regionalism in China over the past decade is based upon complex process to reassert state function on regional scale to sustain its accumulation regime. Next, this paper examines the process of constructing a mega urban-region in UYRD. It arises from the re-articulation of central state function in narrowing regional gaps through regional plan-making. Middle China, however, is largely marginalized in this central state strategy partly because of its relative strength over the more disadvantaged West and partly because of lack of primary cities/provinces. When regional plan has been explicitly re-directed toward promoting integration between provinces since 2010, the fast growing

economy of each province in Middle China, especially the increasing significance of Hubei that realigns its relationship with the capital city of Wuhan, renders it politically easier to build a substantively integrated region and have it recognized by central state. Hubei therefore plays the most proactive role in coalescing the adjacent Hunan and Jiangxi for this purpose.

This paper concludes with the nature of recent regionalism in China and the implications for its future development. The emergence of urban-regions has evolved from simple central state designation to local proactive actions of integration that compete for central recognition. When China's entrepreneurial competition is being escalated from inter-urban to inter-regional scales, it faces new challenges to build an integrated national economy.

*Session: Culture, community and development*

## **URBAN ENCLAVES LED BY CULTURAL REDEVELOPMENT MOVEMENTS IN CHINA**

**Ying Wang, Xi'an University of Architecture and Technology, CHINA**

Last decade has seen many urban enclaves led by cultural redevelopment movements in major cities of China. As a competent representative, Qujiang new district in Xi'an is distinguished area from urban other places. Many high levels of titles and awards were designated to it. For Qujiang New District in Xi'an, it is entitled by Demonstration Zone of National Culture Industry by Culture Department, National 5A level Tourist Attraction and Ecological zone, and National Demonstration Award of human settlement by Housing and Construction Department. It's unique by revitalizing Great Tang Dynasty Culture by royal gardens recovery, royal temple refurbishment, and ancient Tang style complex buildings. Lots of new residential buildings, shopping centers, and great hotels and leisure and recreational facilities make graceful amiable area appearance and enhance city image and recognition. It is boosting local tourism performance as a must-see place for tourist and a must weekend play place for residents.

On the one hand, this formation was stimulated by global culture-led redevelopment vogue and demonstration. More importantly, it benefited from Chinese real estate development industry boom. Real estate industry was designated as new pillar industry to boost sluggish economy due to Asian economic crisis and China new round deepening reforms. All conditions are ready in supply as well as in demand of housing to stimulate real estate industry and the national economy. Besides, Lots of Favorable policies are given to cities in western area to decrease the gap between eastern and western area, and entrepreneurship governance in redevelopment-devolution in land allocation, planning, fiscal, human resources made it.

However, behind the glory, some issues accompany. Social polarization is symbolized. It becomes wealthy people gathering area, the highest housing price area, high crime rate area, aggravating new social contradiction between the wealthy and the poor. Further, unsustainable urbanization happened. Many villages were demolished, and villagers become rich, but they don't have jobs except properties. Their futures are blurred. Adverse life happened to local communities' residents. Their lives are being disturbed by crowds, noise, and jam traffic on weekends and holidays. Besides, bad demonstrative roles created. New and more development districts on urban peripheral are set up impractically, leading to land resource waste, irrational city expansion, at the same time, inside city redevelopment ignored. Moreover, distorted idea is created. The culture is just an instrument for developing real estate and stimulating local economy, the cultural spirits' inheritance and innovation is neglected.

## **CONSTRUCTING THE CULTURAL REGIONS IN CHINA: THINKING THROUGH THE LENS OF TERRITORY EFFECT**

**June Wang, City University of Hong Kong, CHINA**

Ever since John Agnew's caution of the "territorial trap," the debates on the territoriality and rationality of space continue (Cox, 2013; Painter, 2010; Popescu, 2008). This lead to a "'networks versus territories' scenario" assumed in many studies, that is, the dichotomy of the vertical scalar views of power and more horizontally networked ones. At issues here is the logics of political and economic strategy, both of which are driving forces that lead to continuous (re-) constitution of scale and territory. Such question goes to the heart of a continuing concern on studying the scale and territory question in developmental states in the globalizing setting. In China, there emerges a multitude of trade-fair oriented cultural cities and regions, that is, rising nodes on the global trading network of cultural goods. China's passionate exploration towards a cultural turn is evolving in the two entangled processes: the developmental aspiration of another economic niche through the shift from 'culture as propaganda' to 'culture as capital', and the need to re-enhance the political project of hegemony after practices of power devolution and emergence of localism in the past decade, and moreover, the building of soft power through the Going-out scheme.

Deploying Painter's thesis on territory effect, i.e., territory as effect of networked practices. I attempt to interrogates the deployment of economic-technique to explore how 'the exercise of regional administrative power in the economic field results in the production of territorial understandings of economic practices and processes' (Painter 2010, p. 1103). Through this paper, I tend to explain how a new regulatory model - International Cultural Industries Fair (ICIF) and its index - is mobilized as technology to re-configure the territory of the sector of cultural economy in China. The paper is organized as such: after a brief literature review to build up the research framework for this study, I will first introduce the modeling of ICIF and its index as a new technology that promotes trade of cultural products through horizontal network, then I will demonstrate how the new technical model construct regional understanding of the sectorial economy of culture (in terms of both which nodal points and the boundary of the nodal points), shaped by the labor of networked central-local, state and non-state actors on multiple scales.

## **GEOGRAPHY OF KNOWLEDGE SOURCING, SEARCH BREADTH AND DEPTH PATTERNS, AND INNOVATIVE PERFORMANCE: A FIRM HETEROGENEITY PERSPECTIVE**

**Chen Wang, Zhejiang University, CHINA**

The geography of knowledge sourcing has attracted much attention as firms increasingly rely on external knowledge to accelerate innovation. However, the existing literature has been silent about the way in which firms utilize external knowledge and has largely neglected firm heterogeneity in geographical knowledge sourcing. This paper established a geographical search model by combining geographical scales of knowledge sourcing with firm-level knowledge search strategies to investigate the differentiated knowledge search patterns and innovation dynamics between technological leaders and laggards with survey data from Zhejiang, one of the leading provinces in China. It is found that, while a broad search of local knowledge contributes to product innovation by technological laggards, it exerts no significant influence on technological leaders whose innovation depends more upon a nonlocal variety of knowledge sources. The findings highlight the uneven and selective knowledge flows within a cluster and question the importance of localized strong ties in innovation.

## **ACCOUNTABILITY, EFFICIENCY, AND LEGITIMACY OF LOCALISED PLANNING PRACTICES IN CHINA: A SPATIAL PLANNING PERSPECTIVE**

**Xuefeng Wang, Newcastle University, UNITED KINGDOM**

China's "Five-Year Socio-Economic Development Plan (FYSEDP)" may be seen as equivalent to the legally binding framework of spatial planning elsewhere, but the governance is more complex. First, within the multi-layered governmental system, each unit of the governments at every level produces its own FYSEDP. Second, the vertically top-down policymaking asks each sectoral department also producing its own Five-Year-Plan (FYP) in accordance with the sectoral regulations. Given the economic decentralisation and the de facto local state, governments at different levels may not share the same interests, which put the accountability of the FYSEDP in question. At the same time, sectoral-based planning practices may not comply with the FYSEDP and are often inconsistent to each other. The central government's response to the former was to introduce the so-called "main functional zone" (MFZ) planning framework with financial incentives more or less like the EU structural fund and directly involve in local and regional planning in some designated areas. In tackling the latter issues, the government has called for integrating land-use planning, urban planning, environmental planning, and industrial planning into one overarching planning system at the municipal government level.

This paper aims to examine the accountability, efficiency, and legitimacy of the localised integration of sectoral-based planning. Drawing on the cases being studied, we found that, first, the policy has largely been abused by the local states to pursue the local interests which may not be necessarily conducive to the policy goals set by the central government. Second, the governmental structure is leading to the government departments competing for administrative power and resources rather than cooperating and coordinating in the implementation of the integrated plan. Third, the sectoral-based legislation system has impeded the coordination across the sectoral departments, if not bared. Therefore, it is argued that the policy initiative aiming to govern local planning in one overarching planning system would not work without changing the governance structure.

## **IMPACTS OF HIGH-SPEED RAIL LINES ON THE CITY NETWORK IN CHINA**

**Jiaoe Wang, Institute of Geographic Sciences & Natural Resources Research, CHINA**  
**Jingjuan Jiao, Institute of Geographic Sciences and Natural Resources Research, CHINA**

Since the operation of China's first high-speed rail (HSR) (Qinghuangdao-Shenyang) opened in 2003, China's rapidly growing HSR network has been noticed by researchers and it has influenced the reorganization of China's city hierarchies and economic linkages as well. The work reported here investigated the evolution of China's city network influenced by the operation of HSR during 2003-2013. Using the train timetables, the paper employed three centrality indices, namely weighted degree centrality (WDC), weighted closeness centrality (WCC), and weighted betweenness centrality (WBC) to analyze the changes of China's city network. The three indices measure the hierarchy of each city in the network in terms of importance, accessibility, and transitivity respectively. The results indicate that the HSR network led to an increasing concentrated city hierarchy with fewer cities having high centrality value, and a growing similarity between the city hierarchies measured by the passenger train network and by city attributes (such as population and GDP). The cities, which were located in the eastern region, or along trunk HSR lines, or megacities and very large cities, and have also increased the inequality of nodal average centrality between three regions, got larger improvement in city rank in the passenger train network. The top 20 cities by centrality in the conventional rail (CR) network tended to be placed by cities with location advantages in HSR network.

## **RESEARCH ON THE RELATIONSHIP BETWEEN THE REGIONAL INNOVATION CAPITALS AND URBANIZATION IN CHINA**

**Houkai Wei, Rural Development Institute, CHINA**

**Zhu Huanhuan, Institute for Urban and Environmental Studies, Chinese Academy of Social Science, CHINA**

Since the reform and opening, our country urbanization, relying on inputs and a lot investment, has achieved a rapid development, while also produced a series of problems. Now it is urgent to transform our country's urbanization development from input-driven or investment-driven to innovation-driven. A lot of literature shows that Innovation capital agglomeration will help to improve the innovation output efficiency so as to promote urbanization development. This paper uses each province as the research object, then makes use of their data of 2000~2013 to establish dynamic panel data model to test the effect of innovation capital agglomeration on regional urbanization development.

This paper is consisted of six parts:

At the beginning of this article, the author introduces the background and significance of this article and analyzes the purpose and the basic idea of this paper.

The second part is the theoretical analysis of this paper which includes two aspects. Firstly, on the basis of collating and summarizing the relevant views by scholars at home and abroad and the main purpose of this paper, the author gives the concept of innovation capital which is consisted of innovation human capital, innovation financial capital, innovation resource capital and innovation intellectual capital. And then the author analyzes the interaction between innovation capital and urbanization.

The third part is about the statistical analysis and summary on innovation capital investment among 31 provinces in China, and the author analyzes the urbanization development of our country over the years, and points out that if we want to improve the urbanization, it is necessary to further intensify investment in innovation capital. The fourth part is about the empirical analysis. First, the author introduces the model which is used in this paper, and then the author determined data sources and variable selection for the subsequent empirical analysis, the specific case: the variable data chosen is 2000-2013 panel data (integrated time-series data and cross-sectional data), the selected data are derived from the "China Statistical Yearbook on Science and Technology" and "China Statistical Yearbook" during 2001~2014 year. Secondly, the author built the multivariate linear regression analysis model to measure the innovation capital's impact on urbanization. At last, the author analyzes the relevant empirical results.

The fifth part is the conclusions of this paper. We study empirically the relationship through the above estimation of the relevant data of innovation capital and also provide some meaningful policy suggestions for government to formulate macro urbanization policies.

## **SMALL STEPS, BIG CHANGES - A PROJECT-ORIENTED INCREMENTAL APPROACH FOR THE IMPLEMENTATION AND MANAGEMENT OF LARGE-SCALE URBAN GREEN STRUCTURE**

**Linlin Wei, TU Darmstadt, GERMANY**

**Julian Wékel, TU Darmstadt, GERMANY**

With the accelerating urbanization and densification, urban green space is being understood from more comprehensive and holistic perceptions in the twenty-first century. Going through the ecological turn and the more recent recognition of the social functions, urban green system conceptually has become a more complete structure which bounds tightly and interacts with the city instead of being just a decoration. Integration, connectivity, multifunctionality and transdisciplinarity are the new topics of urban green space. However, despite the prosperous development of urban green space in concepts and theories, urban green space in reality is continuously being nibbled and becomes fragmented. Though with the developing technology of data analyzing, some evaluation approaches like Ecosystem Service can already assess the performance of urban

green space quantitatively and thoroughly, they cannot directly guide large-scale green development strategy in practice. There are big gaps between green concept and the long-term process of implementation, management and social acceptance and recognition, which are the crucial problems for the failing of many big green programs.

Based on case study, the object of this paper is to emphasize the positive effects and huge potential of a project-oriented incremental approach in the long-time implementation and management of large scale urban green structure. First, small green projects are flexible to be fixed into local context and get social support which would form identification in local people; second, small projects have advantages in obtaining funds through multiple accesses, which reduce the burden of limited city budget and increase participation between different stakeholders; third, under the control of one same large scale green program, small projects are coordinated and function together, which may probably reduce the risk of trade-offs between scattered projects and enhance system resilience.

Using the case of Frankfurt am Main, Germany, this paper firstly reviews the twenty-five years development history of Frankfurt Greenbelt and its close related project Regional Park Rhein-Main; then, the aims, organization, institutional form and implementation process of the case are summarized to build the framework of such project-oriented approach; furthermore, through the in-depth analysis and expert interview of three sub-projects of Frankfurt Greenbelt, the combination of social, ecological and economical functions in such projects are discussed. Finally, experiences and lessons from the application of such an approach in practice are concluded, and institutional cooperation, scale of single project and the combination of social functions are located as the three key aspects for success. In a word, such project-based approach is flexible and sustainable for the long-time implementation and management of large-scale green program which is valuable and has great potential for other cities. More empirical studies and practices are still needed for the further development of such incremental approach to efficiently deliver the green concepts into everyday urban life.

*Session: Cities, city networks and growth*

## **MAPPING CHINESE URBAN NETWORKS THROUGH INTER-FIRM CONNECTIONS BASED ON ADVANCED PRODUCER SERVICE FIRMS' BUSINESS PRACTICE**

**Bi Wenkai, School of Geography, Beijing Normal University, CHINA**

**Pan Fenghua, School of Geography, Beijing Normal University, CHINA**

Corporate networks have been widely used in existing studies to measure urban networks. In particular, the networks of advanced producer service (APS) firms have been thought to be an ideal way to explore the urban networks, provided that APS firms have become increasingly important in modern economy and the key element for the formation of a global city. The APS networks in previous studies are measured by intra-firm connections: two cities are connected when both cities have offices of a same APS firm. The value of the connection is calculated based on the administrative level of the offices within the APS firm.

This study provides an alternative way to measure urban networks through inter-firm connections based on real business practices, specifically, APS firms providing services for those firms to go public. It assumes that the two cities are connected when an APS firm provides service for one firm in another city to be publicly listed. The inter-firm networks established through service linkage in IPO (initial public offering) process, one typical high-end financing practice, can be applied to study the urban networks, which have several advantages. First, the linkage between cities is based on real business connection, which bears flow of information, capital and people. Second, the networks have been built on inter-firm and cross-sector linkages rather than intra-firm linkages. Third, the result of the analysis has more meaningful implications for various stakeholders in the business practice.

Drawing on a unique database of all firms that made IPO in China's stock exchanges and those related APS firms, including investment banks, law firms and accounting firms that have provided service for the IPO firms, from 2004 through 2014, this study builds up inter-firm networks for further analysis. We regard the node-cities as actors and make the inter-firm networks directly project onto the regional space. It avoids the information



distortion in the transformation from two modes to the one mode network, and fully reflects the spatial pattern of urban networks.

We analyze the overall pattern of Chinese urban networks through inter-city connectivity values. Major findings are as follow: Beijing, Shanghai and Shenzhen are the three main nodes cities, which are the most intensively connected within the network; The cities in the northwest and northeast areas are in the periphery positions within the network; Several urban agglomerations emerge in which cities are well inter-connected, though they are at different stages of evolution; Cities with high political level, such as provincial capital cities are better connected than other cities. The urban network patterns are similar when the connections are calculated based on one type of APS service linkages.

Given the importance of Beijing, Shanghai and Shenzhen in the network, a further analysis on the relationship between the three cities are conducted. We find that Beijing is the leading city, followed by Shenzhen, while Shanghai is the third. Beijing-Shenzhen linkage is more significant than Beijing-Shanghai or Shanghai-Shenzhen linkage. The urban system analysis based on overall service value of cities shows that Beijing is the dominant center, with a far higher service value than Shenzhen and Shanghai. Beijing is also the leading city in the service of law firms and accounting firms. When the service value is calculated based on investment banks' linkages, Shenzhen is the number one city. Although APS firms in Beijing, Shanghai and Shenzhen provide a lot of within-city services, Beijing provides the most cross-region services.

This study provides a new idea for the city network research of "the space of flow". The urban network analysis based on real inter-firm business connections provides interesting findings and proves to be an effective way to extend existing studies.

*Session: Natural/cultural resources, planning and development*

## **KNOWLEDGE BASE DIFFERENTIATION IN REGIONAL SYSTEMS OF INNOVATION AND ENTREPRENEURSHIP**

**Ling Xue, Peking University, CHINA**

**Luoye Chen, Peking University, CHINA**

Using agricultural net carbon sink and output, this article attempts to estimating the agricultural net carbon sink from 1991 to 2011 and establish framework to analyze and identify different patterns of agricultural ecological zones. Moreover, this article use markov probability transfer matrix to analyze the conversion mechanism among four patterns in 1991-2011. Research shows that (1)The ecological strong sustainable zones showed shrink in aggregate from 1991 to 2011. However, the ecological weak sustainable zones represented large changes. (2) From the conversion mechanism showed by transfer matrix, there exists a positive feedback process in strong carbon ecological sustainable regions, while a negative feedback, also can be called as "carbon ecological trap" exists in weak ones. (3) The transition path bifurcated in different conditions, the government should take the responsibility to provide subsidies and promote agricultural technology, thus to encourage farmers to retains the eco-friendly way of agricultural production.

*Session: GVC and clusters 2*

## **TRANSFORMATION OF CHINA'S "WORLD FACTORY" IN THE SHIFTING GLOBAL ECONOMY: PRODUCTION RELOCATION AND MARKET REBALANCING**

**Chun Yang, Hong Kong Baptist University, CHINA**

The 2000s, especially the aftermath of the global financial crisis has witnessed the ongoing spatial restructuring of the export-oriented manufacturing firms from coastal China regions, viz. the Pearl River Delta and Yangtze River Delta, while little attention has been paid to the market rebalancing and interplay with spatial shift. Drawing upon the Global Production Networks (GPN) approach, particularly the evolutionary dynamics of "strategic coupling", this paper argues that the spatial restructuring of China's "world factory" has undergone in

a multi-scalar pattern, characterized by relocation of labour-intensive and low valued-added manufacturing to the inland China and neighbouring Southeast Asian countries. Based on data and information collected from intensive field investigation and semi-structured interviews, the study sheds light on the market rebalancing engaged by transnational corporations and China's domestic firms among various markets ranging from the Western, emerging economies and particularly China's domestic markets. The study elucidates the dynamic interaction between production relocation and market rebalancing of regional production networks in the shifting global economy.

*Session: Knowledge spillovers, science parks and development*

## **UNIVERSITY SCIENCE PARK IN THE INNOVATION ERA**

**Pan Yang, School of Architecture Southeast University, CHINA**

From the 1950s till now, the growth of science park have experienced more than half a century in the world. As the most prominent emerging economy, China has undertaken substantial efforts to develop science parks to encourage innovation and technology transfer since the 1980s. University Science Park (USP) is generally perceived to be one of the important supporters of urban innovation in China. By 2014, China had established 115 state-level USPs, their location is thus influential to the spatial layout and structure of innovation elements. By analyzing construction and usage of maker space in state-level USPs across the country, we can find that more than half of the USPs have built maker space, and others are in the process of building. Maker space relying on state-level USPs develops better, and has become the core region of the local innovation activities. Most state-level USPs has become entrepreneurial practice platform, widely carried out innovation entrepreneurship competition, and provided development space and communication platform for scientific research personnel and university students.

However, we can find that there are still several disadvantages of planning and construction among maker space. Firstly, Chinese planning industry has not formulated related policies dealing with maker space in USPs, such as layout of the functional space, construction of the supporting facilities, and functional configuration outside incubation. Secondly, type of USP which is proper for building maker space is not defined, not all types is suitable for maker space. Thirdly, real construction situation of USP is not completely suitable for function space which maker space needs, many USPs lack of network space, communication space and resources sharing space. Fourthly, service efficiency and frequency of entrepreneurship practice platform in USP is uneven. USPs have held innovation contests and built maker spaces, part of the new built maker spaces have put into use, become an important part of makers' daily life and received high praise from makers. But others remains to be visit site or unemployed office space.

This analysis has sought to highlight perspectives and policy concerns regional innovation system. It should be stressed, though, that the construction of maker space in USPs is growing vigorously, how to plan and use is more important. Only by formulating affirmation standard firstly can we build practical and useful maker space for makers. Also, policies of both traditional and new incubator should be different and well studied. Lastly, planners need to acknowledge how to make master plan and site selection strategy of maker space, and try to optimize the function and use of maker space. We must understand that there are a lot of measures we need to make out facing the innovation era.

*Session: Metropolitan planning and development*

## **LAND FINANCIALIZATION AND LOCAL STATE 'BANKETIZATION': THE BANKING AND PRIVATIZING GOVERNANCE OF FAR AS FICTITIOUS CAPITAL IN METROPOLITAN TAIWAN**

**Daniel You-Ren Yang, Department of Sociology, Tunghai University, TAIWAN, CHINA**

With the case outside Anglo-American society, this article proposes the concept "local state 'banketization'" to elaborate the floor area ratio(FAR)-leveraged urban strategy in Taiwan, and explain the historical evidence and conflict of land being treated as a pure financial asset. In the new millennium, Taiwan's governments have

successfully created a credit system of fictitious capital based on floor area ratio as the leverage to facilitate real estate investment. After a decade's pragmatic practice, nowadays there are four city governments (Taipei, New Taipei, Taichung, Kaohsiung) set up the metropolitan-wide 'FAR bank' governed by local state. The role and practice of these FAR banks are different from those TDR(transferable development rights) bank or PDR(purchase of development rights) bank in western countries aiming to preserve natural resources or architecture merits, and characterizing the 'municipal bond' for local state's financing. We argue this phenomenon labeled as 'banketization' of local state is part of a longer process of land financialization in Taiwan, understood as 'treating land as a pure financial asset', as well as the deepened formation of such process. This paper investigates whether and how the local state banketization in the form of FAR bank contributes to the FAR's liquidity and the state's planning purpose, as well as the way FAR connects the 'functioning' real estate capital. Also, we examine the FAR's privatizing governance in the practice of land development, the derived institutional fallacy as well as social contradiction.

*Session: Coordination and planning of cities*

## **REGIONAL INTEGRATED GOVERNANCE OF ENVIRONMENTAL PROBLEMS AND ITS INTERGOVERNMENTAL COORDINATION MECHANISM IN YANGTZE RIVER DELTA, CHINA**

**Cai Yongli, East China Normal University, CHINA**

**Wenbo Cai, University of Hull, UNITED KINGDOM**

A region is an interacted social-economical-natural complex ecosystem. There are strong relationships among environmental elements which constitute an organic integrity within a region. Regional environmental problems can be hardly solved by individual administrative government within a region. Thus, all administrative governments within a region need a harmonious cooperation to face regional environmental problems together. The Yangtze River Delta is one of the most developed regions in China. Over the past 30 years, the Yangtze River Delta has experienced rapid urbanization and an immense growth in population and economy as a consequence of economic and political reforms in 1978. However, this development model was at the cost of ecosystem services and environmental quality. Environment problems are being caused in this region by human activities faster than they can be prevented. Currently, the Yangtze River Delta is facing serious water-soil-air pollution, habitat fragmentation, and deterioration of ecosystem and decline of ecosystem services etc. These environmental problems have become the obstacle in sustainable development of society and economy of the region. Although each of administrative governments in this region has tried their best to do some attempts to manage the problems within their own administrative areas respectively, few of them have succeeded. Thus, regional coordination and cooperation mechanism has to be required for environment protection and integrated governance.

Upcoming opportunity and challenges have been met by regional environment protection and integrated governance following by implementation of national ecological civilization strategy, integration in society and economy, and urban agglomeration in the Yangtze River Delta. Firstly, this study identifies main types of the environmental problems suffered by the Yangtze River Delta and their spatial and temporal change, especially focusing on transboundary environmental problems among Shanghai, Zhejiang province and Jiangsu province. Then, we analyze the causes of transboundary environmental problems and explore their future trend under the background of regional integration. Furthermore, based on the characteristics of the Yangtze River Delta, and combining the experiences from Europe integration with Chinese national ecological civilization strategy, we put forth a new regional coordination and cooperation mechanism which includes setting up a new regional multi-element integrated management agency in replace of an old single-element one for protection of regional eco-environment, developing the regional market trading platform for emission trading and eco-compensation, designing the regional monitoring and early warning system of eco-environment, assessing the regional resource of ecological network, planning and implementing the regional ecological network etc. The result of this research may also support the regional ecological planning in the Yangtze River Delta.

**SPATIAL STRUCTURE AND ECONOMIC PRODUCTIVITY IN METROPOLITAN AREAS OF CHINA**

**Hou Yun, Peking University, CHINA**

**Sun Tieshan, School of Government, Peking University, CHINA**

We focus on the influences of metropolitan spatial structures on economic performance of metropolitan areas using panel data of 12 metropolitan areas in China. Based on past researches, we propose to measure metropolitan spatial structure by two index, Locational Gini Index and Centrality Index, to stand for agglomeration level and agglomeration structure respectively. Using this method, we quantify the spatial structures of these 12 metropolitan areas and analyze their main features. Furthermore, we use panel data models to explore how metropolitan structures affect economic performances. We have four major conclusions. First of all, we find that the spatial structures of the 12 metropolitan areas we focus are relatively stable across time, which is in accordance with past researches. Besides, we can note that most of these metropolitan areas are high both in Locational Gini Index and Centrality Index. Using four fixed-effect regression models, we find that agglomeration level has an inversed U-shaped effect on economic performances. This indicates that agglomeration per se has a two-sided effect on the progress of economic development, and there exists an optimal agglomeration level as for the economic development of a specific metropolitan area. Thirdly, we find a negative relation between Centrality Index and economic performance, thus leading to the conclusion that polycentric spatial structure is more appropriate for the development of the 12 metropolitan areas. And by adding an intersection variable into the regression model, we conclude that the economic productivity of agglomeration level and agglomeration structure is interacted. When considering the effect of agglomeration on economic performances, we just cannot ignore the other, and vice versa. Centrality index will reduce the positive externality of positive externality of scale economics brought by agglomeration level, and higher agglomeration level will attenuate these negative effects such as congestion, commute cost, environment pollution which are caused from high density of the central city.

**INSTITUTIONAL ENSEMBLES OF POST-REFORM CHINA'S RURAL LAND EXPROPRIATION IN URBAN FRINGE REGION: A CASE OF SHANGHAI**

**Shuping Zhang, University of Waterloo, CANADA**

**Zhu Qian, University of Waterloo, CANADA**

In recent years, Chinese cities have witnessed an aggressive rural land expropriation in urban fringe regions to enhance city competitiveness and promote place marketing. Lin (2009) revealed that the rural-urban interface is the most significant and contentious locus of China's contemporary land development. It is on this particular geographic setting where the land use right previously retained by rural collectives is relinquished to local governments and then to private commercial developers. Mass rural land expropriation has resulted in a tremendous decline in China's cultivated land and generated grievances and disputes among land-lost farmers. To ensure the national food security, the state council promulgated the "Basic Farmland Protection Regulations" in 1994. These regulations prohibited basic farmland conversion from agricultural to non-agricultural activities and required local governments to strictly protect the region's basic farmland districts. However, the fever of rural land conversion through land expropriation has not been accordingly cooled down. The analysis of this phenomenon is therefore, not only important, but also urgent. To conceive new forms of development and governance, it is meaningful to probe into the constitution, behavior, and structuration of institutional ensembles and to rediscover the roles that institutions function as agents in the materialization of urban development. The purpose of the research is to better apprehend the complexity and dynamics of post-reform China's rural land expropriation through the lens of institution, investigating the main forces for policy changes, the actors and stakeholders involved, and the winners and losers for the competition of resource and power. A Shanghai case will be provided to decode the tremendous paradigm shift of rural land expropriation in relation to political economic restructuring that is driven by policy entrepreneurship and regulatory mechanisms. Four formal institutions—fiscal recentralization since 1994; local pro-growth development and entrepreneurial governance; the existence of black market and development right transfer; and legislative vagueness and

inconsistency—and two informal institutions—depoliticization of land expropriation process; and fragmented and localized resistance—are explored in the case study to depict the dynamic and complex institutional ensembles. These institutional forces have continuously driven aggressive rural land expropriation in Chinese cities' urban fringe regions where boundary-transcending activities such as physical urban sprawl, jurisdictional annexation, and rural-urban integration frequently occur.

*Session: Culture, values, mentalities/housing, regional development*

# **PRACTICING COLONIALISM BUT OFFENDED BY THE DISCOURSE OF COLONIALISM: A REFLEXIVE EXPERIMENT IN ETHNOGRAPHIC METHODOLOGY OF EXPATRIATE TEACHERS' PRACTICE AND DISCOURSE IN THE 'RUST BELT' OF NORTHEAST CHINA**

**Xizhen Zhou** Jilin HuaQiao University of Foreign Languages, CHINA

**Anthony Friend**, School of Education, University of Nottingham, UNITED KINGDOM

Ethnography is so much more than a mere research method – or a tool – and is increasingly recognised as the research methodology – an overarching approach about how to research – par excellence for exploring culture – a practice – which pays a great deal of attention to its final written product – a discourse (Willis, 2000). For us, the relationship between ethnography, practice and discourse is an intellectual puzzle, and one that we wish to decipher in a commensurate manner: as a reflexive experiment in methodology. In experimenting with methodology, so to speak, we aim to problematise the all too commonly held notion that methodology is some neutral means of excavating research data (see Ellis and Bochner, 1996; Law, 2004; Mason, 2002)

In this ethnographic paper we critically analyse the ironies, tensions and contradictions of several expatriate teachers in the 'rust belt' of Northeast China who speak about the ills of various forms of colonialism. Drawing on data generated by one of the authors who himself is also an expatriate teacher in the 'rust belt' from participant-as-observer and semi-structured interview research methods, we argue that while the expatriate teachers engage in such a discourse, their practice speaks that they do indeed engage with at least one form of colonialism: colonialism as understood etymologically by its Latin root – to live within a foreign land, but within your own culture. This represents our first contribution, which is empirical in nature. Our second contribution is epistemological and revolves around us reflecting on the (im)possibilities of ethnography when participants' discourse is all too frequently not just ideological, but meta-ideological and often moral as well as moralising too. Reflecting on our empirical evidence, we cautiously put forward that it is especially difficult for ethnographers to effectively research when participants present themselves as 'righting culture'. Our third contribution, building on both of the former, is theoretical and analyses how ethnography – as a methodology – in 'writing the world' (Clifford and Marcus, 2010) can serve to further the current trend of valorising discourse over practice (Derrida, 1978), even though many of ethnography's most ardent supporters would have us believe that ethnography favours practice over discourse (Clifford and Marcus 2010; Willis, 2000).

In our conclusion we muse over some of the problems (cultural) regional studies faces in its attempt to decipher this practice / discourse conundrum, to which we explicitly link to the conference theme of 'harmonious development'. We tentatively argue as to the importance of not reifying practice or discourse, but instead of the need for recognising practice and discourse as inalienably intertwined.

*Session: Innovation and spatial development*

# **RESEARCH ON THE SPATIAL AGGLOMERATION EVALUATION AND GUIDANCE OF MAIN INNOVATIVE ACTORS IN METROPOLITAN AREA**

**Jun Zhou**, School of Architecture Southeast University, CHINA

Traditional economics and other related innovation theories considered that the innovation main actors had their specific space effect and influenced regional innovation by each other. With the development of economic geography and evolutionary economic geography, all the related spatial researches about innovative elements were getting more and more interested by scholars from all over the world. In the rapid urbanization

development process, China gradually realized the innovation had a great influence to improve regional economy, promoting industrial transformation and made a great benefit to build innovative country. Therefore, how to build effective innovation space in regional became a focused research topic in regional planning and the other social subjects. Besides, as a main space in Chinese regional development, the reasonable spatial distribution of innovation main actors in metropolitan area was the key factor. In this paper, combined the concept of three kinds innovation main actors (technology, knowledge, and service) and the spatial theory of metropolitan, and also the metropolitan comprehensive innovation ability, it classified them into four development stages which are mature period, development period, embryonic period and incubation period. After that, based on the data, it analysed the agglomeration characteristics of all three kinds of innovative actors in different metropolitan period. Based on the current situation, this paper summarized the main factors which affecting spatial agglomeration of innovative actors through the theoretical and practical aspects. With the location theory, it concluded that the local innovation environment would infect the local economic and also change the spatial development direction. In addition, urban and metropolitan area also had their special attraction which means it could also attract innovative actors. Thirdly, different actors had their preferred space according to their own property. With the analysis, it can be found that there were some obvious issues about the spatial agglomeration in metropolitan area. Finally, as the issues oriented, and combined with relevant theories, this paper put forward a few space guiding suggestions which contained set up metropolitan innovation coordination group, established a balanced spatial configuration within main innovative actors, respected local industrial features and culture in order to build suitable agencies, and last but not least, established the metropolitan innovative actors supervision system and evaluate the R&D, innovation output, innovation environment construction etc., so that it can form a stable positive atmosphere.

*Session: GVC and clusters 1*

## **THE EVERLASTING FIRE: HOW THE 2200-YEAR-OLD JINGDEZHEN PORCELAIN CLUSTER (CHINA) SURVIVED CHANGING POLICIES THROUGH 500 IMPERIAL REIGNS**

**Jane Zhuang, University of Otago, NEW ZEALAND**

**André Everett, University of Otago, NEW ZEALAND**

**Tara Duncan, University of Otago, NEW ZEALAND**

Jingdezhen, the world capital of porcelain – through whose exports of “blue-and-white” china the country of China became internationally known – constitutes a large, focused historical cultural cluster. Unlike new industrial clusters agglomerated after World War II, this 2200-year-old cluster has survived over 500 imperial reigns, experiencing complicated political transitions, with multiple stages of transformation. The story of Jingdezhen is not just a historical coincidence, given the significant qualities of its business environment that won the favour of empires, royal families and the higher social groups, such as government officers and merchants. These qualities are rare in other domestic kilns. Jingdezhen’s products were also preferred by the higher social classes from Indian, Middle Eastern, European, and neighbouring Asian countries including Japan and Korea. Nowadays, porcelain is still the single biggest industry in Jingdezhen, and the most significant industry in terms of contribution to provincial GDP. It is also a crucial part of Chinese culture. Heritage or historical cultural clusters are not very well researched; economic geography, regional economics, and cluster research have paid little attention to the value of economic history, especial industrial heritage.

Studying the Jingdezhen porcelain cluster could benefit cultural heritage clusters as well as modern industrial clusters. Systematic examination of the business model of Jingdezhen could provide valuable insights for policy makers on how to create and implement sustainable policies, and when and how to intervene regarding transformative development of clusters during multiple social, political and economic transformations. Most of the industrial clusters in literature are post World War II, and are mostly in high-tech industries, such as biotechnology and IT. These industries either struggle to develop or struggle to survive. Most heritage clusters struggle to survive with limited resources and lack of guidance. The Jingdezhen porcelain cluster has experienced several phases of development; in this research, such experiences are theorised for general application.

This research employs Grounded Theory Methodology (GTM), which was initiated by Glaser and Strauss (1967). The first phase of GTM research generated nine figures of a substantive theory of the Jingdezhen porcelain cluster. The nine figures illustrate the inter-relationships of the business groups, the division of the arts, the

production chain and also the relationship between local government and the cluster. The second phase of GTM, currently underway, is generating a formal grounded theory based on the first phase of GTM research (completed in 2008) to compare with new data sets (collected in 2014) as well as historical archival data. This longitudinal research focuses on how Jingdezhen porcelain has absorbed economic downturns in history and in the year 2008. The research findings present the relevant factors related to recovery; one key finding is the “faith” of local businesses in the Jingdezhen porcelain cluster, highlighting that they believe “the show must go on” as it has done for 2200 years.

*Session: Cities, city networks and growth*

## **THE APPLICATION OF SYNTACTICAL ANALYSIS OF SPACE STRUCTURE WITH THE REFERENCE OF UNBAN FUNCTION: A CASE STUDY FOR THE EVOLUTION OF NANJING CITY**

**Jingnan Zuo, Southeast University, CHINA**

This paper aims to understand the evolution of urban form of historical city in the trends of global regional and urban development through the method of syntactical analysis of space syntax. The conventional methods of urban analysis can only examine urban morphology through the general descriptive way. On the contrary, space syntax could give accurate value for the arrangement of spaces, referencing to the position of any given space within the structure of the configuration as a whole. Another advantage of space syntax for urban analysis lies in its concept of space rooted in analysis of buildings, which leads syntactical analysis focus almost entirely on the voids of a structure, principally the street spaces within a settlement. At the scale of settlements, the theoretical basis of the approach is the relationship between spatial structure and the generic function of movement. Therefore through syntactical analysis for the urban spatial pattern with the reference of land use, the relationship between spatial structure and urban function could be rendered in a logic and rational way.

In the syntactical analysis of this study, global-local relationship of urban space is examined from the perspective both of spatial structure and urban function in diachronic order. In this paper, spatial structure is revealed from the morphology of urban network while urban function focused on land-use pattern. Maps of 1910, 1937, and 2007 are transformed into axial maps for the syntactical analysis. Radius\_n (global integration) and Radius\_3 (local integration), Intelligibility are the basic parameters for comparative study between axial maps of different time nodes. Besides, in this thesis the administrative, the commercial and the residential functions are identified as major city functions, which are strongly connected with governmental policy and “natural movement”. Unlike the governmental policy, natural movement is driven by special environment, in other words, by urban physical form. The theory of space syntax builds its syntactical parameters with the reference of natural movement. Hence, changes of urban function are related with not only the political policy but also the physical form. The latter is the focus in this research, so the variations of urban function are examined in details by the result gained from syntactical analysis of spatial structure.

The result of this study shows that Nanjing is increasingly global integration both in the spatial structure and urban function. In 1910, the spatial structure of the research area is split into several parts. As the evolution of space configuration caused by urban construction, the spatial structure of Nanjing demonstrate strong integration in the syntactical analysis for the 2007. Along with this spatial trend, the urban center of complex and diversified functions expands to cover larger area of main structure integrator. On the contrary, the spatial structure of local region has gradually lost the independence and becomes the component of global structure, which cause the local integration decline. As the local integration weakened, the diversity of function in local area also reduces.

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