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Editorial Introduction

Special Issue on "Spatial Structure for Future Sustainable Cities in Asian Countries"

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Currently, Asia accounts for 40% of the world's urban population, which will increase to 56% by 2030. Urbanization is one of the biggest issues in Asian countries. In addition, in the economically developed countries such as Japan and South Korea, the aging problem has also emerged. In order to achieve a sustainable urban society, it is increasingly necessary to find urban design innovations and appropriate research methods and tools. Thus, this special issue focuses on spatial structure for future sustainable cities in Asian countries.

The first paper "Urbanization Patterns of China's Cities in 1990-2010" attempts to describe the urbanization patterns of China's cities during the period 1990–2010. The authors selected the eight most telling indicators of urbanization and 218 cities from China City Statistic Yearbook 1991, 1996, 2001, 2006 and 2011; and adopted a Principal Component Analysis to extract three comprehensive indicators from the sample database: Potential Capacity for Expansion of Tertiary Industry, the Degree of Urban Commercialization and the Potential Capacity for Population Growth. These three comprehensive indicators can describe the most important and remarkable features of a city during urbanization, namely the development of commercialization and the growth of population. China has experienced dramatic urbanization over the past 20 years. This is a dynamic set of multidimensional socio-spatial processes of several dimensions. Although, these comprehensive indicators cannot be considered as common ones for other similar research, the method was proved to be feasible and rational (He L. and Shichen Z., 2014).

Urbanization patterns in rapidly growing cities are complex. Such patterns reflect historic policy outcomes, economic characteristics and changing lifestyles. The second paper "Measuring the Urban Expansion Process of Yogyakarta City in Indonesia" examined urban growth in Yogyakarta City in Indonesia to understand its urban expansion process. The findings of this study show that the main urban area of Yogyakarta City is expanding faster than other parts of the urban region. The outward expansion of urban growth starts with small urban patches. Later, these patches expand

and merge to form larger urban patches. These large patches may have various levels of complexity, depending on the region. This fact is visible in urban extent data from 1997 to 2013 and the *COHESION* value for the corresponding periods. Expansion of the main urban area was visible particularly for the period 2002–2013 when the proportion of urban growth was less than the previous period (Prasanna D. and K. N. H. 2014).

Compact urban structure is one important government policy for local cities in Japan. The third paper "Study on a Method of Making a Concentrated Urban Structure Model Based on an Urban Master Plan" aimed to consider a new technical approach for the realization of compact cities. The authors made forecasting methods for future population and built future population distribution models. They then created the concentration urban structure models that applied the rules to evaluate population distribution and distance from urban facilities. This study is considered effective for planning aimed to satisfy a sustainable and compact urban structure (Shirou T., Shinji I. and Takeshi K., 2014).

The economy of Japan has matured since the beginning of the 21st century. However, decreasing population, birth rate and increase of the aging population are proceeding rapidly especially in local cities. As a result, it will become difficult to maintain functions of communities in future, and it is also forecasted that regional gaps between cities and villages will become larger. Being based on regional characteristics, strengthening a wide area in self-sufficiency and exchanges among regions might be called for. The fourth paper "Study on Regional Characteristics and Exchanges Among Regions in Fukuoka Wide Area" aims at clarifying the changes of regional characteristics and exchanges among the regions in the Fukuoka wide area, using statistical data and personal trip survey data over the recent decade, paying attention to a new structure of wide area including cities and villages. As the result, in the Fukuoka wide area, it was made clear that there were six groups which were classified with principal component analysis and cluster analysis, and they have spread concentrically and become complicated in the recent decade. This may have been influenced by the changes of population distribution and household composition. Moreover, the exchanges among the regions have been broadened in the recent decade. In the Fukuoka wide area, strengthening both self-sufficiency and exchanges among the regions will become important subjects in future (Shigeyuki K. and Ichiro M., 2014).

According to a 2006 report by the National Institute of Population and Social Security Research, Japan has been undergoing a long-term decline in population since 2005. The mid- and long-term vision of urban and regional planning regards the consolidation of residential areas and public service facilities, including their withdrawal, as necessary, for improving the quality of life for rural and suburban residents. From the point of view of provider's, such as the administrative and private sectors, consolidation of facilities is inevitable due to their profitability. Because of the decrease in the number of facility users and their lack of successors, brought about by population decline and aging, it is also difficult for the public administration to provide public services. The fifth paper "A Spatial Simulation Model to Explore Agglutination of Residential Areas and Public Service Facilities" is to produce suggestions for sustainable urban and regional spatial structures in Japan. A spatial simulation model was used as a multi-agent-based model to analyse the mid- and long-term changes in the agglutination of residential areas and public service facilities. At first, a multi-agent-based model was developed to quantitatively evaluate the agglutination of residential areas and public service facilities. Next, sensitivity analysis was conducted to

adjust some of the crucial parameters that influenced simulation results. Finally, simulations were carried out based on several policy scenarios related to the sustainability and accessibility of the facilities. The results of the analysis indicated that public service facilities are likely to be concentrated in the city centre, but that financial support by the administration or non-profitable organizations (NPOs) enables facilities located outside of centres to sustain the provision of public services. (Kazuki K., Akira O. and Atsushi M., 2014).

The final paper "Overview: Study of Intercity Travel Characteristics in Chinese Urban Agglomeration" focuses on research of intercity travel characteristics. By investigating the travel characteristics of passengers and the intercity traffic demand forecast, the authors aim to discriminate the geographical spatial characteristics of the departure place and to establish a coupling law of city public transportation hubs and urban space which directly connects with the intercity rail station. The findings of this study can conclude that there are the following characteristics of urban agglomeration in the intercity transportation: 1) Intercity transportation is still primarily for business purposes; the future trend will adjust to meet the mutual demands of both commuter and business travelers. 2) The intercity rail has become the most popular transport mode for business purposes for its quick, convenient and safe characteristics. Because the cost is still the main influencing factor of the intercity rail, the users are still mainly high income groups. Therefore, further reducing the cost is needed to adapt to the travel demand of the majority of passengers. 3) Thanks to the increased speed, many long intercity MRT trips can be had back and forth within a day. The intercity rail shows a definite peak at a certain time in both the morning and evening, it also provides support and assurance for commuter travel (Zhuran L., Yan W. and Shichen Z., 2014).

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REFERENCES

He L. and Shichen Z. (2014). "Urbanization Patterns of China's Cities in 1990-2010", Proceedings of the 9th International Symposium on City Planning and Environmental Management in Asian Countries, 19-24.

Prasanna D. and K. N. H. (2014). "Measuring the Urban Expansion Process of Yogyakarta City in Indonesia", Proceedings of the 9th International Symposium on City Planning and Environmental Management in Asian Countries, 7-12.

Shirou T., Shinji I. and Takeshi K. (2014). "Study on Making Method of Concentration Urban Structure Based on Urban Master Plan", Proceedings of the 9th International Symposium on City Planning and Environmental Management in Asian Countries, 83-88.

Shigeyuki K. and Ichiro M. (2014). "Study on Regional Characteristics and Exchanges Among Regions in Fukuoka Wide Area", Proceedings of the 9th International Symposium on City Planning and Environmental Management in Asian Countries, 177-182.

Kazuki K., Akira O. and Atsushi M., (2014). "A Spatial Simulation Model to Explore Agglutination of Residential Areas and Public Service Facilities", Proceedings of the 9th International Symposium on City Planning and Environmental Management in Asian Countries, 301-308.

Zhuran L., Yan W. and Shichen Z. (2014). "Overview: Study of Intercity Travel Characteristics in Chinese Urban Agglomeration", Proceedings of the 9th International Symposium on City Planning and Environmental Management in Asian Countries, 13-18.