Editorial introduction

Sustainable Transport System

Guest Editors

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Many factors can contribute to sustainable transport, for instance green/greener transport modes, spatial design and connectivity among transport infrastructure, land use or urban form, travel behaviour, etc. In the first paper of this issue, [Chen and Felkner \(2020\)](#) conduct an extensive review on the relationship between sustainable transport and urban form, and point out that many researchers have only discussed relationships between sustainable transport with individual elements of urban forms, without considering the interrelationships among the elements of urban forms such as population density, concentration within the urban-rural context, and land use mix. To fill this gap, the authors perform robust regressions on sustainable transport indicators and urban form elements using the case of the U.S. State of Florida. They found that the interaction effects among urban form elements show in a “threshold, negative-to-positive” synergy, which implies that certain expected effects from urban form elements on sustainable transport outcomes are conditional depending on levels of other urban form elements. Although the paper was not able to discuss interaction effects among all the elements, the argument is justified, the analysis is acceptable and the paper raised a research question that needs wider attention.

The second paper by [Pan, Zheng, and Wang \(2020\)](#) takes a disaggregated approach. The authors conduct a survey of 1245 people living in 27 residential compounds in Shanghai. The attributes included individual socioeconomic characteristics such as age, gender, living space, and car ownership; accessibility to public transit such as metro and bus stations; and built environment of the residential compounds as well as that of their working places such as parking space, schools, supermarkets, and hospitals. The transport modes of each person's commute were also surveyed and the CO₂ emissions of each mode were added up to compute the total emissions of the trip. Many insightful findings are reported through an analysis of the relationships between commuting CO₂ emissions and the aforementioned attributes, which support or revise the results of previous literature. One new finding deserves more policy-maker attention, which is that the top 20% of commuters in Shanghai were responsible for 80% of the total commuting CO₂ emissions, and many rich people do not use low-carbon urban rail despite living in locations near rail stations.

The third paper, by [Zheng and Li \(2020\)](#), focuses on the bicycle sharing system, which is regarded as an emerging green transport mode, and many cities in the world have adopted and developed this system. The authors review the types and development stages of the system and summarize research results from previous research, including the characteristics of users, the factors motivating usage, and purposes of employing the system. In terms of the impact of the bicycle sharing systems, detailed results from the literature review are presented from four perspectives, i.e. model substitution, congestion, health/safety, and environment. While all the first three perspectives have been proven to have positive effects overall, the authors point out that future studies should focus more on the environmental impact of the bicycle sharing system, because the fundamental goal when the system was created was related to this and there has been limited research on it. They suggest a life cycle assessment (LCA) approach for evaluating the overall environmental impact of the system.

The other two papers are related to Thailand, which both deserve reading. Among the transportation research journal articles, the transportation policy-making process is often a minor topic, despite its vital importance for transportation administration. [Jittrapirom and Jaensirisak \(2020\)](#) fill this gap by introducing and analysing the transport master plan practices in three medium-sized cities in non-capital regions of Thailand, namely Si Sa Ket, Chiang Mai and Lampang. The master plan making process, administrative organizations and budgeting practices in Thailand can be a good reference for other countries for comparison. Some suggestions for further improvement illustrate the current gaps between research and practice. [Metta \(2020\)](#) addresses the issue of transport poverty and more directly focuses on achieving Sustainable Development Goals. As stated in Target 11.2, “by 2030, (we shall) provide access to safe, affordable, accessible and sustainable transport systems for all, (with) improved road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons”. The author points out that transport poverty is a very important issue but currently lacks attention, especially in developing countries such as Thailand where transport problems are prominent and sometimes out of control due to rapid urbanization and economic growth. This paper firstly reviews previous works which provide definitions and measurements of transport poverty, and then the data used in those research works is examined. By checking data availability in Thailand, the author calls for wider attention to be given to Thailand, and suggests surveys to be implemented for further study. The review of the definition, measurement and data involved is extensive and summarized state-of-the-art research, and the analysis on Thailand can serve as a direction for the Thai government or administration of other developing countries to use in data collection and policy-making. This will establish a better understanding of the situation of transport poverty.

Four of the papers included here were presented at the biannual International Conference on Spatial Planning and Sustainable Development held at Chiba University, Japan, during August 30 - September 1, 2019. We would like to express our sincere gratitude to the researchers who joined the conference and submitted their works to our journal. We also give special thanks to the reviewers who granted us their most generous support with their time and valuable comments. We hope all our efforts will enhance the knowledge and practices of sustainable transportation around the world.

REFERENCES

- Chen, L., & Felkner, J. (2020). "The Interaction Effects in the Relationship between Urban Form and Sustainable Transportation". *International Review for Spatial Planning and Sustainable Development*, 8(2), 4-17. doi: http://dx.doi.org/10.14246/irspsd.8.2_4.
- Jittrapirom, P., & Jaensirisak, S. (2020). "A Review of Thailand's Transport Master Plan for Regional Cities". *International Review for Spatial Planning and Sustainable Development*, 8(2), 53-69. doi: http://dx.doi.org/10.14246/irspsd.8.2_53.
- Metta, P. (2020). "Transport Poverty in Thailand: Concept, Measurement and Data Availability". *International Review for Spatial Planning and Sustainable Development*, 8(2), 70-85. doi: http://dx.doi.org/10.14246/irspsd.8.2_70.
- Pan, H., Zheng, Y., & Wang, Z. (2020). "Metro Proximity and Built Environment on Commuting Co2 Emissions in Shanghai". *International Review for Spatial Planning and Sustainable Development*, 8(2), 18-36. doi: http://dx.doi.org/10.14246/irspsd.8.2_18.
- Zheng, L., & Li, Y. (2020). "The Development, Characteristics and Impact of Bike-Sharing Systems: A Literature Review". *International Review for Spatial Planning and Sustainable Development*, 8(2), 37-52. doi: http://dx.doi.org/10.14246/irspsd.8.2_37.