

Editorial Introduction

Special Issue on “Infrastructure and Transportation Planning”

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Transportation and infrastructure are the most crucial components which affect the development and renewal of cities and regions. The results of infrastructure and transportation planning not only take effect on the accessibility of an urban area, but also, it determines the livability of the whole city ([Krizek & Levinson, 2005](#)). Recently, new technologies, concepts and practical means have largely emerged in infrastructure and transportation planning, such as: “Big Data,” “Large scale model” and “old-community planning (Cunliang Guihua in Chinese)”. These concepts and tools almost reversed the traditional knowledge system and operating mode of urban planning, which has prompted us to carry out the necessary research and work to adapt to these changes ([Vlahogianni, Park, & van Lint, 2015](#)). On the other hand, we should still attach importance to the traditional knowledge and practical means by applying them to the new problems arising in the urban planning process today. Consequently, in this special issue, we study new concepts such as the “Big data” in the life-circle community determination, policy instruments on the new energy vehicle industry, and others. Moreover, we also pay attention to the change of urban planning law and survey technology on urban transportation hubs.

There are six papers in this issue. Using the space-time path technique, the first paper ([Tsai, Chen, & Ning, 2016](#)) studies elderly people's social support and walking space in Xin-Yi district, Taiwan. As the world's population goes up, aging problems are becoming important issues of concern. However, relatively little research has been carried out on transportation planning for aged people. [Wang and Tong \(2009\)](#) proposed design principles for the pedestrian space of the elderly, which included: (a) safety and accessibility, (b) comfortable and walkable space, and (c) communication and participation. But the walkability indicator was rarely formulated based on the space-time condition. This paper investigates 22 seniors in Xin-Yi district, China by recording of Global Positioning Systems, activity items, space equipment and the walking environment of elders to propose the requirements of walking spaces and the suggestions for improvement in Xin-Yi district.

The second paper ([Xiao, Xu, & Liu, 2016](#)) studies how to determine and split the life-circle community unit by using the positioning data of taxi trips. The taxi trip data have largely been used in assisting urban structure

recognition (Liu et al., 2015). The life-circle identification is important for making a reasonable land use plan. Due to date, very little research has been imposed on life-circle determination using big traffic data. In this paper, the taxi trip data of Xiamen City are used to detect the community within the extent of citizens' spatial scale mobility – that is, the life-circle of the citizens. Moreover, the detected life-circle is compared to the urban planning community unit to give the necessary adjustment suggestions for land-use planning of the city.

The following paper (Lin, Dai, & Song, 2016) pays close attention to the travel behavior within comprehensive passenger transportation hubs. It is well known that there will be more and more mega transportation infrastructure emerging in our cities due to the rocketing increase of transportation demand. For instance, with the development of a high speed rail system across China in this century, almost every large city now owns at least one comprehensive passenger transportation hub. In this circumstance, how to investigate the mobility pattern of passengers has become an emerging problem. For determining travel behavior in comprehensive passenger transportation hubs, Román and Martín (2014) employed a discrete choice experiment to better understand the passengers' preferences and found a range of willingness-to-pay values for service quality attributes, such as in-vehicle travel time and connecting time between all transportation modes. From the view of passenger behavior, the related paper in this issue presents a detailed review on how to set up the directional signs for multimodal passengers moving through comprehensive transport hubs, in addition, paying attention to evacuation behavior.

As we know, efficiency assessment for transportation infrastructure is necessary for advancing the decision-making process for infrastructure planning. At the same time, the topic of transportation network efficiency has been a hot research topic since 60 years ago (Transportation Research Board, 2010). The fourth paper in this issue (Li, Z., Zhao, & Yuan, 2016) focuses on an efficiency evaluation of the Beijing-Tianjing-Hebei region. The conclusion is that the highway transportation efficiency of the Beijing-Tianjin-Hebei region is less than that of the Yangtze River Delta and Pearl River Delta urban agglomeration.

Differing to the infrastructure efficiency evaluation, which is always a posteriori, the evaluation of policy or of the Government Procurement Act would be carried out in advance before the construction of an infrastructure. As a result, we present two papers relating to the evaluation of the transportation development policy and Government Procurement Act. The first mentioned paper (Li, D. et al., 2016) evaluates the efficiency of policies on the new energy vehicle industry. The other paper (Huang, 2016) compares the 1998 Government Procurement Act and the 2000 Act for Promotion of Private Participation in Infrastructure Projects.

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