



Factors influencing perceived access to urban parks: A comparative study of Brisbane (Australia) and Zhongshan (China)



Dong Wang^{a,*}, Gregory Brown^a, Guoping Zhong^b, Yan Liu^a, Iderlina Mateo-Babiano^a

^a School of Geography, Planning and Environmental Management, University of Queensland, St Lucia 4072, QLD, Australia

^b School of Geography and Planning, Sun Yat-Sen University, Guangzhou, PR China

ARTICLE INFO

Article history:

Received 11 February 2015

Received in revised form

3 August 2015

Accepted 26 August 2015

Available online 24 September 2015

Keywords:

Park planning

Accessibility

Cross-cultural analysis

Community survey

Australia

China

ABSTRACT

Previous research indicates that perceived access to urban parks is influenced by both physical and non-physical variables. However, research to date on park access has involved case studies conducted in Western countries that are not directly comparable to non-Western cases. The extent to which park access may be influenced by the larger social and cultural context of the urban setting is unknown. This study uses a comparative research design by applying the same multidimensional model of urban park access to community-level survey data collected in the cities of Brisbane (Australia) and Zhongshan (China). Our results indicate that lower income groups perceive significantly lower access to urban parks than higher income groups in both cities with Brisbane residents reporting greater overall park access compared to Zhongshan residents. The respondents from both cities reported preferences for sustainable transport modes (e.g., walking and cycling) to visit parks. The more frequently people visit a park by walking, the greater the self-reported park access. The results from both cities confirm that physical and locational features of parks (e.g., proximity and travel time) are the most important factors influencing perceived access. Our results indicate that both physical and socio-personal factors significantly contribute to self-reported park access in both urban contexts, supporting the hypothesis that the accessibility concept is a complex multi-dimensional construct that can be applied cross-culturally. We discuss the implications of our findings for park planning in urban areas.

© 2015 Elsevier Ltd. All rights reserved.

1. Introduction

Public parks and green spaces are an important environmental component of urban landscapes, providing the most common community features for leisure-time activities (Bedimo-Rung, Mowen, & Cohen, 2005). Urban parks provide a variety of benefits by offering natural environments that reduce stress, facilitate recovery from mental and physical health issues, and encourage physical activity to combat increasingly sedentary lifestyles (Bedimo-Rung et al., 2005; Byrne & Wolch, 2009; Cohen et al., 2007; Ulrich & Addoms, 1981). Urban parks also offer places for social interactions to foster closer community ties, economic benefits from tourism, reduced health care expenses, and sustainable daily transport options (Bedimo-Rung et al., 2005; Bolitzer &

Netusil, 2000; Byrne & Sipe, 2010; Correll, Lillydahl, & Singell, 1978; Geoghegan, 2002). These benefits contribute to overall community well-being thus making park access and use a focus of study across multiple disciplines (Chiesura, 2004; Wolch et al., 2010).

Previous research has confirmed that park accessibility is one of the most important variables to explain park utilisation, thus providing a key indicator to measure the quality of urban life (Byrne, Wolch, & Zhang, 2009; Wang, Brown and Liu, 2015) and a key criterion to guide green space allocations in urban communities. However, conventional planning models rely heavily on objective quantitative standards (e.g., area and number of parks per capita, travel distance) to measure access to parks and green spaces (Maruani & Amit-Cohen, 2007; Wang, Brown and Liu, 2015). These models do not adequately account for the complexity of the human decision-making process and the accessibility concept as a multi-dimensional construct. If planners are to respond to the diversified needs of urban parks, it is important to develop an adequate understanding of the accessibility concept, its dimensions, and its role in influencing the park use decision-making process.

* Corresponding author. Level 4, Chamberlain Building (35), The School of Geography, Planning and Environmental Management, University of Queensland, Brisbane, QLD 4072, Australia.

E-mail address: d.wang7@uq.edu.au (D. Wang).

The concept of accessibility is currently described as a multidimensional construct associated with both physical and non-physical factors (Brown, 2008; Gregory, Johnston, Pratt, Watts, & Whatmore, 2009; Wang, Brown and Liu, 2015). Distance and travel time are two conventional variables that measure accessibility as a function of geometric origin based on Location Theory and Central Place Theory (Hass, 2009; Marten & Gillespie, 1978), but the conceptualisation of accessibility has evolved beyond a spatial-physical dimension to include other important socio-personal factors such as information barriers, gender ideologies, and financial and cultural barriers (Aday & Andersen, 1974; Bisht, Mishra, & Fuloria, 2010; Ferreira & Batey, 2007; Gregory et al., 2009; Marten & Gillespie, 1978; Pirie, 1981). For example, Aday and Andersen (1974) posited the socio-organisational aspect of accessibility be distinguished from the geographic aspect of accessibility. They used the term 'socio-organisational accessibility' to represent the non-physical factors that constrain or enable the ability to obtain services. Similarly, other researchers proposed that social barriers and personal preferences be integrated with geographic factors to develop a more complete understanding of the accessibility concept (Bisht et al., 2010; Marten & Gillespie, 1978; Murray, O'Kelly, Kwan, & Tiefelsdorf, 2003; Pirie, 1981). In particular, Pirie (1981) argued that accessibility is a synonym for reachability and convenience, suggesting that the accessibility concept be viewed as an ability to access services rather than merely as a physical measure of distance between origin and destination. Thus, accessibility was defined by Gregory et al. (2009) as *the ease with which people can reach desired activity sites* to account for the potential influence of socio-personal factors on the ability to access services.

Recent accessibility studies of urban parks have described the multidimensional nature of the accessibility concept. For example, Byrne and Wolch (2009) posited that perceptions of park accessibility are closely associated with both park user characteristics and park features while Wang, Brown and Liu (2015) empirically tested an integrated park accessibility model using survey data collected from two suburbs with comparable park features, but contrasting socioeconomic status (SES). A combination of spatial analysis and regression analysis was used to examine the effects of a variety of physical and non-physical variables on self-reported access to urban parks. The results confirmed the multidimensional nature of park accessibility, with both physical and non-physical dimensions significantly contributing to the construct.

Furthermore, people of colour and of lower income are vulnerable to inferior park access and substandard facilities, calling for research that targets specific group needs and preferences (Byrne et al., 2009; Estabrooks, Lee, & Gyurcsik, 2003; Sister, Wolch, & Wilson, 2010; Wolch, Wilson, & Fehrenbach, 2005). Wang, Brown and Liu (2015) found that income and language spoken at home (as an alternative measure of racial/ethnic group) were socioeconomic variables significantly associated with perceived park access, consistent with other research indicating that population groups from different cultural backgrounds and/or economic conditions perceive and use parks differently (Byrne & Wolch, 2009; Gobster, 1998; Hutchinson, 1987). These studies suggest that people of different socioeconomic background may respond differently to perceived park access. However, most of these studies were conducted in the context of western cities, with few validated in cities comprising alternative socio-cultural backgrounds. This indicates a need for research into the associations between socioeconomic variables and park accessibility in different urban settings.

Public parks also contribute to our understanding of the economics of urban structure, because park access contributes to the liveability of the urban environment (Longley, Batty, Shepherd, & Sadler, 1992; Mccann & Ewing, 2003). A variety of strategies have

been implemented (e.g., reuse of remnant urban land and obsolete transport infrastructure) to increase the supply of parks in cities throughout the world, especially in park-poor areas such as inner-cities (Byrne & Sipe, 2010; Wolch, Byrne, & Newell, 2014). Despite being a relatively new concept introduced from the West and Japan, public parks and green space are seen as a vital part of urban development in modern China (Shi, 1998). China is currently undergoing unprecedented internal rural-urban migration with explosive rates of urban growth. However, park planning has lagged behind the development of other urban infrastructure such as real estate and transport infrastructure (Wolch et al., 2014). In 2014, China had an average community green space ratio of 12 m² per capita, compared to an average of 154 m² per capita in South East Queensland (SEQ), Australia, and a national median of 50.2 m² per capita in the U.S. (BNFA, 2014; Queensland Government, 2011; Wang, 2009; Wolch et al., 2014). In this paper, we extend research on urban parks to include an empirical, cross-cultural validation of a multi-dimensional model of park accessibility. The different level of park development in Australian and Chinese cities, in addition to the well-documented cultural differences between the West and East, offers an important contrast in urban settings to examine the formation and cross-cultural validity of the park accessibility construct.

1.1. Model and research questions

This study aims to empirically examine the cross-cultural validity of a park accessibility model (Fig. 1) using neighbourhood-level survey data collected in two cities, Brisbane (Australia) and Zhongshan (China). The park accessibility model consists of five hypothetical dimensions and their associated variables: physical, transport, knowledge, social, and personal. The identification of multiple accessibility variables in the model provides an opportunity to empirically investigate their contributions to the overall accessibility construct.

We seek answers to the following research questions by comparing results between the two study cities: 1) Does perceived accessibility to parks differ between high and low income groups within each city? 2) Is perceived accessibility associated with commonly used transport modes to visit parks? 3) Which dimensions of accessibility (physical or socio-personal) most significantly influence perceived access to urban parks? 4) Which accessibility variable(s) contributes most strongly to perceived urban park access?

2. Methods

2.1. Background of study cities

We collected primary neighbourhood-level survey data in the two cities of Brisbane, Australia, and Zhongshan, China (Fig. 2). The two cities were purposively selected for their contrasting socio-cultural context, but similarity in size, climate, and topography.

Brisbane is the capital and largest city in the State of Queensland, Australia. It is located in South East Queensland (SEQ) and accounts for approximately two-thirds of the total population in the state. The SEQ region has been the fastest growing metropolitan area in Australia since 1990 (DSDIP, 2009). As of 2013, the region had a population of 3.3 million with a projected population of 5.5 million in 2041 (OESR, 2012). Brisbane is the most densely populated area in the SEQ region with a population density of 777 people per square kilometre, compared to the state average of less than 3 people (ABS, 2011). Geographically, Brisbane sits on a hilly floodplain along the reaches of the Brisbane River. It has a humid, subtropical climate with an average annual temperature around 25 °C.

Download English Version:

<https://daneshyari.com/en/article/7455991>

Download Persian Version:

<https://daneshyari.com/article/7455991>

[Daneshyari.com](https://daneshyari.com)