

LITERATURE SURVEY FOR A NEW HINT TO TRANSPORTATION - ANALYSIS OF THE NYC BIKE SHARE SYSTEM

SURVEY I:

This review of the English language bikeshare literature encompasses recent research from North America, Asia, Europe and Australia. The emphasis is on papers published since 2013, as earlier papers of relevance are included in a synthesis of bikeshare literature published by this journal (Fishman, Washington, & Haworth, 2013). Relevant papers were collected via a scan of Scopus and Google Scholar databases, using the search terms ‘Bicycle sharing’, ‘Bikeshare’, ‘Public bicycle’ and ‘Public bike’, conducted between May and October 2014. As the following section shows, bikeshare activity is strongest in China, but there is a relative paucity of bikeshare research in Asia and this review reflects this imbalance. This paper reviews research across a range of bikeshare topics, including its documented history and growth, usage patterns, user preferences and demographics. Research examining barriers to bikeshare are also reviewed, as well as the little research that has taken place assessing the impacts of bikeshare. Fleet rebalancing research is touched upon, followed by a synthesis of future directions for the bikeshare industry and critical gaps in knowledge and priorities for researchers.

The review highlights current limitations in bikeshare knowledge, and these are particularly evident in the areas of rebalancing, sampling of nonbikeshare users and the impacts on bikeshare. These issues are especially important given that a central motive for the development of bikeshare is sustainable transport outcomes, yet no standard methodology has been established to enable operators and researchers to accurately and consistently measure the impact BSPs have on car use, climate change, congestion or public health. Finally, some researchers have taken the opportunity provided by automated bikeshare data collection to analyse temporal and spatial relationships and this is not captured in the current review. Rather, coverage of this work is included in a separate paper in this Special Issue. This review of the English language bikeshare literature encompasses recent research from North America, Asia, Europe and Australia. The emphasis is on papers published since 2013, as earlier papers of relevance are included in a synthesis

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SURVEY II:

Several countries have been enjoying a bicycling boom all around the world. There is a growing volume of research into bike-sharing systems. Studies have found that both Europe and North America are experiencing a major adoption phase with new systems emerging and growth in existing systems, and that private sector operators have been important entrepreneurs in both locations with respect to technology and business models (Parkes et al., 2013).

A number of researches have determined factors affecting bike sharing usage and tried to predict bike sharing flow using different urban factors such as: population, job,

bicycle lanes, proximity to public transport, bike sharing station density, altitude, retail shops, etc.. These studies were conducted using daily, monthly or yearly aggregated data which can hide the variety of daily bike sharing usage. Based on station data, Jappinen et al. (Jappinen et al., 2013) indicated that integration of public bikes with traditional public transportation can promote sustainable daily mobility in Helsinki. Studies on London's bicycle-sharing systems found that two strikes of the London subway led to an increase of the number and duration of public bike trips, and that easier access to the system can promote weekday commuting and weekend use (Fuller et al., 2015).