

Public transport promotion policy on campus: evidence from Suranaree University in Thailand

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Abstract This study aims to determine factors affecting quality of public transport service and public transport demand for students. The findings will be a tool to develop a policy promoting public and sustainable transportation. Applying second order confirmatory factor analysis, the study found that the most important factor on bus service quality was convenience, followed by service planning and bus network. The most important factors affecting the intention to increase bus usage were attitude, personal norm, and a lack of private vehicle. All three factors presented a

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positive effect on the intention to increase bus usage. A Factor with a negative impact was perceived behavior control of increasing bus usage. Socioeconomic factors, namely hometown, sex, and academic year did not have a direct influence on the intention to increase bus usage, but have an indirect effect through vehicle ownership. The study results could be used to establish an efficient policy to increase bus ridership.

Keywords Public transport · Promotion policy · Confirmatory factor analysis · Structural equation model

1 Introduction

Thailand has observed a rapid increase of motorcycles and automobiles each year. There were 18,018,066 registered motorcycles in 2011, an 18.26 % increase from 10 years before. The statistics also showed 10,139,006 registered automobiles in the same year which accounted for an 80.34 % increase from the same 10-year period (Department of Land Transport 2012). The increase of automobiles and motorcycles caused ensuing problems including traffic congestion, mental health, air and noise pollution, and energy shortage. Transportation management concepts were initiated to develop sustainable transportation (Qureshi and Lu 2007; Richardson 2005) and improve quality of life (Steg and Gifford 2005). Sustainable transportation involves a transportation system that promotes economic and social growth sustainably without causing environmental problems now and in the future. It focuses on efficient and low emission modes such as train and other public transport and promotes environmental-friendly car usage such as car sharing, economic driving, and clean energy (Ratanavaraha and Jomnonkwao 2015).

Motorcycles have become the most popular travel mode for students in the provincial area. As the number of motorcycles increases, higher congestion level and accident risk in the university area become evident. A successful public transportation program is expected to reduce the number of motorcycles on the university road network. To move trip makers from private to public modes is not an easy task. Each individual has one's own preference. Improving the frequency and other types of quality should create a positive image of the public transport mode (dell'Olio et al. 2010; Eboli and Mazzulla 2007; González-Díaz and Montoro-Sánchez 2011; Stradling et al. 2007; Wen et al. 2005). Public transport management for a 2600-acre university with a large student population is a challenging assignment. The university has to identify a suitable form of transport that may consider mini bus, personal rapid transit, and tram or light rail. Service characteristics should also be determined.

Managing public transportation for university is different from that for general public. It intends to serve students presumably with financial limitations (Dorsey 2005). The past researches have dealt with public transportation in academic institutes. For example, Balsas (2003) introduced the concept of sustainable transportation and the greening of the campus movement. This concept greatly