

The Effects of Access and Accessibility on Public Transport Users' Attitudes

Dr Subeh Chowdhury, *University of Auckland*, Kasey Zhai,
Dr Asif Khan, *University of Auckland*

Introduction

Heavy reliance on private road transport is linked with greenhouse gas emissions, air pollution, noise pollution, and congestion (and associated economic losses to businesses). With trip-making behaviour growing in complexity in terms of purpose and spatial destinations, challenges arise in providing an attractive public transport (PT) system. Private vehicle use has been preferred to public transport because of instrumental functions (freedom, comfort and convenience); symbolic functions (social status); and affective functions (driving perceived as pleasurable). Although improvement in service quality is likely to increase ridership, the level of increase can be limited if travellers hold prejudices towards the image of PT. Residential density and quality of the built environment, particularly safety, have an effect on the number of pedestrians who access a PT terminal. Accessibility to various destinations, "reaching work/education," and "reaching other suburbs" are statistically significant for existing users' satisfaction with the current system. The negative experiences of others also have an adverse effect on existing users' intentions to continue ridership. To retain existing patronage, the ease of access to terminals and connectivity to various destinations need to be of a high standard.



Research Objectives

This study investigated existing users' attitudes towards PT from two perspectives:

1. The effects of accessibility to destinations and ease of access to terminals on existing users' attitudes. A terminal is defined as a hub, station, or transfer point.
2. The contribution of social norm, as an information source, in the formation of users' attitudes towards PT.

Selected elements of the built environment surrounding terminals and network connectivity were used to measure access and accessibility, and a user-preference survey was conducted in Auckland, New Zealand.

Accessibility

One of the key measures of accessibility is providing access to different activities/opportunities. The other measure is time-based (walking time to stop and journey time). Accessibility can be determined by the network coverage of a PT system and access by active modes (walking and cycling) to different land uses. Integration of land use planning and transport is a critical component in achieving sustainable development.

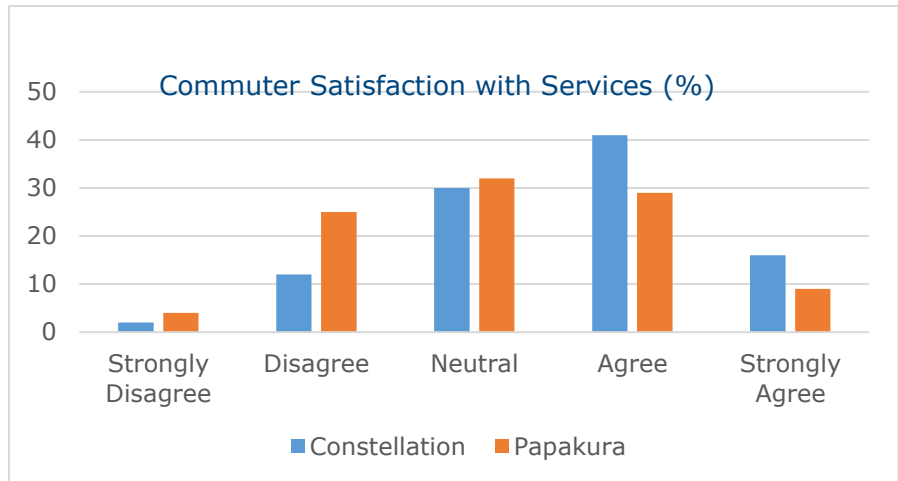
Access to Public-Transport Terminals

A critical factor in PT use is the access time or distance of a terminal/stop. Ease of access is influenced by factors such as the aesthetic quality and attractiveness of the environment, safety, infrastructure provision, and street connectivity.) Environments must first provide the appropriate conditions to encourage walking and PT use: ensure personal safety and be comfortable, interesting, and stimulating. Features such as footpaths with clear sight distance and public spaces contribute to pedestrians feeling secure.

A travel survey conducted by the Ministry of Transport (2014) indicated that PT has a 2.8% modal share in New Zealand. The findings of this study are expected to assist planners and operators in attracting and retaining patronage

Results

Results indicated that ease of access, specifically walking and driving times to terminals, are important for users' satisfaction. Reaching work/education and reaching other suburbs were significant factors, but doing errands and reaching leisure activities were not. Findings indicate that ease of access, specifically walking and driving times to terminals, are important for users' satisfaction. They are more likely to be satisfied when terminals can be accessed within five minutes by driving.



Overall, attitudes towards PT were positive at Location 1 (Constellation Station), which is well-connected and has higher frequency services, and neutral at Location 2 (Papakura Transport Centre), which is less well connected (or accessible). This could also be affected by demographic factors (L2 users more likely to be older and female which has implications for the purpose of their trips).

		L1 Data Set	L2 Data Set
Gender	Male	49%	42%
	Female	48%	56%
Age	18-30	62%	43%
	31-50	30%	41%
	51-65	6%	14%
	65+	2%	1%
Frequent PT users		84%	87%
N (sample size)		160	140

Table 1. Demographic Profile

The findings in both locations demonstrate that the action of using PT in Auckland is more likely to be influenced by self-interest than pro-social motives. Future research will be done around factors within the information received from others that are most likely to affect attitude, for example weather, safety and security, time-related attributes, crowding, and information.



Policy Implications:

- Land use and transport planning need to focus on infrastructure, the surrounding environment and connectivity in order to maximise ease of access
- Overall attitudes towards public transport are positive, but could be improved by through greater accessibility
- The emphasis on using PT to reach work/education means that frequency and timeliness are critical

To find out more about this research, please visit: <http://doi.org/10.5038/2375-0901.19.1.7>

Contact: s.chowdhury@auckland.ac.nz

Adapted with assistance from Suzanne Woodward, PPI