

Valuing public transport customer amenities: A survey of practice across Australasian and international transit agencies

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Abstract

Public transport customer amenities cover a range of ancillary improvements which are not directly related to operations or service quantity but can enhance the quality of the passenger experience. Examples include information provision, passenger facilities, station/stop quality and personal security measures. While much research has determined the value that public transport users place on different types of amenities, there is little understanding of current practice in the use of customer amenity valuations. The aim of this research was to understand current practice across public transport agencies in estimating and applying public transport customer amenity valuations. A survey of public transport agencies in 11 cities (Melbourne, Sydney, Brisbane, Perth, Auckland, London, Paris, Toronto, Vienna, Oslo and Singapore) was undertaken showing that Australasian cities, albeit Melbourne, generally have widespread inclusion of customer amenities as part of public transport project appraisals. Australasian practice tends to include customer amenities more frequently in project appraisal than London, Singapore and Oslo. Paris, Toronto and Vienna, although they adopt advanced appraisals for some projects, rarely (if at all) include customer amenities in these appraisals. While agencies generally use published sources of customer amenity values specific to their country, Toronto and Singapore tend to use customer amenity values from London.

1. Introduction

A diverse range of factors can affect the quality of public transport from the user perspective. Typically, these elements are classified into ‘hard’ factors (e.g. mode, service frequency, right of way, operating hours, fares) and ‘soft’ factors (Fearnley et al. 2015). Soft factors are commonly referred to as ‘customer amenities’ and cover a range of ancillary improvements which are not directly related to operations or service quantity but can enhance the quality of the passenger experience (Currie et al. 2013). Examples of customer amenities include information provision, passenger facilities, station/stop quality and personal security measures.

Various studies have been undertaken to determine the value that public transport passengers place on different types of customer amenities (Douglas 2016; Outwater et al. 2014; Robson 2009; Steer Davies Gleave 2000), with selected values available in published guidelines (Transport and Infrastructure Council 2017; Transport for London 2014). However, there is a very limited understanding of current practice across public transport agencies in the use of customer amenity valuations. This paper aims to address this gap through a survey of selected Australasian and international public transport agencies.

2. Literature Review

A review of the literature indicates that stated preference has been the dominant method used to estimate the value of public transport customer amenities, although customer ratings have also been relatively common (De Gruyter et al. 2018). Other techniques include the priority evaluator method, revealed preference, and maximum difference (or best-worst) scaling.

A range of issues have been identified with the valuation of public transport customer amenities. A key issue relates to high levels of variability inherent in the values themselves which can make it difficult to transfer values from one service or city to another (Booz Allen & Hamilton 2000). Differences in values can arise through changes in socioeconomic characteristics such as age, gender and income, but can also be affected by trip purpose, frequency, length and time of day (Fearnley et al. 2015; Phanikumar & Maitra 2007). Other key issues include changes in customer expectations and the relevance of amenities over time which may affect the value ascribed to customer amenities as minimum standards increase and technology replaces some traditional forms of customer information (Outwater et al. 2014).

A high-level summary of public transport customer amenity values is provided in Table 1¹. The highly variable nature of valuations is evident in the relatively large range of values presented. All median values are equivalent to less than one minute of in-vehicle time. The implication is that while customer amenities are of clear value to passengers, their value is generally small compared to overall travel time (typically 30-60 minutes).

Table 1: High-level summary of public transport customer amenity values, by type and mode

Amenity type	Median value (range in brackets): in-vehicle minutes		
	Train/metro	Tram/light rail	Bus
Access	0.22 (0.01 – 4.39)	0.24*	0.64 (0.05 – 5.59)
Facilities	0.30 (0.00 – 9.40)	0.50 (0.32 – 0.55)	0.49 (0.02 – 13.78)
Information	0.70 (0.03 – 12.01)	0.30 (0.09 – 0.65)	0.61 (0.02 – 11.35)
Security	0.50 (0.02 – 13.99)	0.22 (0.09 – 1.21)	0.55 (0.02 – 9.81)
Environment	0.73 (0.03 – 6.79)	0.45 (0.22 – 0.50)	0.62 (0.00 – 13.43)
Condition	0.40 (0.00 – 13.99)	0.48 (0.32 – 0.55)	0.53 (0.02 – 13.78)

Source: adapted from De Gruyter et al. (2018)

* Only one value was available so no range can be presented.

3. Research Method

In order to meet the aim of this research, a survey of selected public transport agencies was undertaken during January – February 2018. The aim of the survey was to understand current practice across agencies in estimating and applying public transport customer amenity valuations. A total of 12 cities were targeted for the survey: Melbourne, Sydney, Brisbane, Perth, Auckland, London, Paris, Toronto, San Francisco, Vienna, Oslo and Singapore.

Following identification of the appropriate representative/team in each agency, a link to an online version of the survey was sent via email. Survey questions asked agency representatives

¹ Some 556 separate customer amenity values were identified relating to 97 separate amenity types. All values are collated into a database available to assist practitioners in this field. The database and research reports are available for free download at: <http://publictransportresearchgroup.info/portfolio-item/best-practice-approaches-to-public-transport-customer-amenity-valuation/> (last accessed 23 October 2018).

about the extent to which customer amenities are included in public transport project appraisals, details of any valuation studies, and the use of published customer amenity valuations.

A response to the survey was received from all 12 cities, except San Francisco. While a number of agency representatives had been identified for San Francisco, a response could not be achieved for this city within the timeframe available for the survey.

4. Results

For the types of public transport projects that agencies had been involved with in the last 10 years, representatives were asked about the extent to which customer amenities are typically included in project appraisal. Table 2 details the results which reveal considerable variation in the extent to which customer amenities are included in project appraisals.

Sydney, Brisbane and Auckland reported that they almost always (generally 80-100% of the time) include customer amenities in the appraisal of public transport projects. Melbourne, and to an extent Perth, stands out in contrast to these Australasian cities since they only do this 60-80% of the time for train/tram projects and 40-60% of the time for bus projects. London and Singapore include amenities in appraisals of new bus and train/metro stations and to an extent for bus/rail rolling stock. For London, this is done at lower levels for other public transport projects and is generally not considered in Singapore for other project types. Paris and Toronto do not typically include amenities in project appraisals; Paris never, and Toronto very rarely for train/metro station upgrades and new/refurbished rolling stock only.

Table 2: Extent to which customer amenities have been included in project appraisal

Mode	Project type	City										
		MEL	SYD	BNE	PER	AKL	LON	PAR	TOR	VIE	OSL	SIN
Train/metro	New or upgraded station/stop	80-100%	80-100%	80-100%	80-100%	80-100%	80-100%	40-60%	20-40%	20-40%	80-100%	80-100%
	New or extended line/route	80-100%	80-100%	80-100%	80-100%	80-100%	80-100%	40-60%	20-40%	20-40%	80-100%	80-100%
	New or refurbished rolling stock/vehicle	80-100%	80-100%	80-100%	80-100%	80-100%	80-100%	40-60%	20-40%	20-40%	80-100%	80-100%
	Short range planning*	80-100%	80-100%	80-100%	80-100%	80-100%	80-100%	40-60%	20-40%	20-40%	80-100%	80-100%
	Other	Project not considered / no response										
Tram/light rail	New or upgraded station/stop	80-100%	80-100%	80-100%	80-100%	80-100%	80-100%	40-60%	20-40%	20-40%	80-100%	80-100%
	New or extended line/route	80-100%	80-100%	80-100%	80-100%	80-100%	80-100%	40-60%	20-40%	20-40%	80-100%	80-100%
	New or refurbished rolling stock/vehicle	80-100%	80-100%	80-100%	80-100%	80-100%	80-100%	40-60%	20-40%	20-40%	80-100%	80-100%
	Short range planning*	80-100%	80-100%	80-100%	80-100%	80-100%	80-100%	40-60%	20-40%	20-40%	80-100%	80-100%
	Other	Project not considered / no response										
Bus	New or upgraded station/stop	80-100%	80-100%	80-100%	80-100%	80-100%	80-100%	40-60%	20-40%	20-40%	80-100%	80-100%
	New or extended line/route	80-100%	80-100%	80-100%	80-100%	80-100%	80-100%	40-60%	20-40%	20-40%	80-100%	80-100%
	New or refurbished rolling stock/vehicle	80-100%	80-100%	80-100%	80-100%	80-100%	80-100%	40-60%	20-40%	20-40%	80-100%	80-100%
	Short range planning*	80-100%	80-100%	80-100%	80-100%	80-100%	80-100%	40-60%	20-40%	20-40%	80-100%	80-100%
	Other	Project not considered / no response										
Ferry	New or upgraded station/stop	Project not considered / no response	80-100%	Project not considered / no response	80-100%	80-100%	80-100%	Project not considered / no response	Project not considered / no response	Project not considered / no response	80-100%	80-100%
	New or extended line/route	Project not considered / no response	80-100%	Project not considered / no response	80-100%	80-100%	80-100%	Project not considered / no response	Project not considered / no response	Project not considered / no response	80-100%	80-100%
	New or refurbished rolling stock/vehicle	Project not considered / no response	80-100%	Project not considered / no response	80-100%	80-100%	80-100%	Project not considered / no response	Project not considered / no response	Project not considered / no response	80-100%	80-100%
	Short range planning*	Project not considered / no response	80-100%	Project not considered / no response	80-100%	80-100%	80-100%	Project not considered / no response	Project not considered / no response	Project not considered / no response	80-100%	80-100%
	Other	Project not considered / no response										

80-100% of the time

60-80% of the time

40-60% of the time

20-40% of the time

Up to 20% of the time

Never

Project not considered / no response

MEL = Melbourne AKL = Auckland VIE = Vienna

SYD = Sydney LON = London OSL = Oslo

BNE = Brisbane PAR = Paris SIN = Singapore

PER = Perth TOR = Toronto

* Changes in frequency, operating hours and/or fares

Representatives were asked if their agency had ever been involved in making its own estimates of the value of public transport customer amenities in their city. As shown in Table 3, a total of 17 studies were reported across 7 out of the 11 cities, with Sydney and London reporting the largest number of studies (5 each). Most studies considered customer amenities for train/metro (15 studies) and to a lesser extent bus (13 studies) and tram/light rail (11 studies). Stated preference was the most common survey method (used in 11 out of 17 studies), with consultants/contractors undertaking the majority of valuations (12 out of 17 studies).

Table 3: Studies undertaken to estimate the value of public transport customer amenities

City	Survey year/s	Public transport mode/s				Survey method/s						Who primarily undertook the valuation?		
		Train/metro	Tram/light rail	Bus	Ferry	Stated preference	Revealed preference	Customer ratings	Priority evaluator	Max-diff scaling	Other	Undertaken in-house	Consultant/contractor	University/research institute
Melbourne	2014	✓	✓	✓		✓		✓			✓		✓	
Sydney	2015	✓	✓	✓	✓	✓							✓	
	2012	✓									✓		✓	
	Annual	✓	✓	✓	✓		✓				✓		✓	
	2016	✓									✓		✓	
Brisbane	Ongoing	✓		✓	✓						✓		✓	
	Annual	✓	✓	✓	✓						✓		✓	
London	2016	✓	✓	✓		✓	✓			✓			✓	
	2014	✓	✓	✓		✓							✓	
	2013					✓							✓	
	2011	✓	✓	✓		✓							✓	
	2007	✓	✓	✓		✓							✓	
Paris	2005	✓				✓							✓	
	2013	✓	✓	✓		✓	✓			✓			✓	
Oslo	2015	✓	✓	✓	✓		✓				✓		✓	
Singapore	2015	✓	✓	✓		✓	✓	✓					✓	
Total		15	11	13	5	11	4	3	0	2	7	4	12	1

Note: no valuation studies were reported for Perth, Auckland, Toronto or Vienna

Representatives were also asked if their agency uses any published sources of public transport customer amenity values. The results revealed that published sources are used in 7 of the 11 cities (Melbourne, Sydney, Perth, Auckland, London, Toronto and Singapore), including:

- *Australian Transport Assessment and Planning Guidelines* (Transport and Infrastructure Council 2017): used in Melbourne, Sydney and Perth
- *Business Case Development Manual* (London Transport 1997; Transport for London 2014): used in London, Toronto and Singapore
- *Economic Evaluation Manual* (NZ Transport Agency 2016): used in Auckland
- Guide to Project Evaluation (Austroads): used in Sydney
- *National Guidelines for Transport System Management in Australia* (Australian Transport Council 2006): used in Melbourne, Sydney and Perth
- *Passenger Demand Forecasting Handbook* (British Railways Board 1994): used in London
- *The demand for public transport: A practical guide* (Balcombe et al. 2004): used in Sydney
- *WebTAG Transport Analysis Guidance* (Department for Transport 2017): used in Sydney.

While agencies generally reported using published sources specific to their country, it is noted that agencies located in Toronto and Singapore use customer amenity values from London (Transport for London 2014) with Sydney adopting values from both the United Kingdom (Balcombe et al. 2004; Department for Transport 2017) and Australia (Australian Transport Council 2006; Austroads ; Transport and Infrastructure Council 2017).

5. Conclusion

This paper has provided an overview of current practice across selected public transport agencies in estimating and applying public transport customer amenity valuations.

For train/metro and tram/light rail projects, Sydney, Brisbane, Auckland and to an extent Perth, generally all have widespread inclusion of customer amenities as part of project appraisals. Melbourne stands out relative to other Australasian cities as having customer amenities included less frequently in appraisals of train/tram projects. Australasian practice tends to include customer amenities more frequently in project appraisal than London, who tend to incorporate amenities in a smaller share of their appraisals. Paris, Toronto and Vienna, although they adopt advanced appraisals for some projects, rarely include amenities in these appraisals.

Information relating to 17 valuation studies was provided by agency representatives across 7 cities. Consultants/contractors undertook most of the valuation studies which may highlight the need to ensure that agencies have sufficient in-house skills and resources available for correctly interpreting and applying the outputs of such studies.

Published sources of amenity values are used by agencies in 7 out of the 11 cities. While agencies generally use sources specific to their country, Toronto and Singapore (and to some extent Sydney) use values from London. This finding may suggest a lack of customer amenity values available in these cities and that local valuation studies are needed to fill this gap.

While this research has provided an understanding of current practice across public transport agencies in estimating and applying public transport customer amenity valuations, it is limited to practice in 11 cities only. Nevertheless, this paper sheds important light on current practice in the field of public transport customer amenity valuation and helps to establish the current state of play in this area. Future research is needed to understand best practice in the field of public transport customer amenity valuation.

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