What Influences Satisfaction and Loyalty in Public Transport? A Review of the Literature

Abstract

Public transport ridership retention is a challenge for many cities. To develop comprehensive strategies aimed at retaining riders, it is necessary to understand the aspects of public transport that influence users to become loyal to the system. This paper analyses relevant literature regarding the causes of satisfaction and loyalty in public transport. We find that the service factors most associated with satisfaction are on-board cleanliness and comfort, courteous and helpful behaviour from operators, safety, as well as punctuality and frequency of service. On the other hand, loyalty is associated with users' perceptions of value for money, on-board safety and cleanliness, interactions with personnel and the image and commitment to public transport that users feels. Furthermore, the results elucidate that the concept of loyalty is best defined based on users' intentions to continue using the service, their willingness to recommend it to others, their overall satisfaction, but also and most importantly, their image of and involvement with public transport. Public transport users who have a positive image of the agency and consider public transport an integral component of city life are more likely to demonstrate loyalty and act like ambassadors for public transport agencies.

Word count: 7382

Introduction

Public transport is a service that many cities recognize as being an important aspect in the development of socially, environmentally, and economically sustainable communities. However, current public transport usage is still much lower than automobile usage in many regions around the world, and thus, novel strategies need to be developed to promote the use of this sustainable mode. One way to increase public transport mode share is to face the continuous challenge of retaining current users while at the same time attracting new ones. Although many people go through periods in their lives when they use public transport regularly, common reasons for public transport users to stop using the system include becoming dissatisfied with service, gaining access to a car, or changing the location of their job or home which is sometimes associated with changes in family size (Perk, Flynn, & Volinski, 2008). One example of a study that illustrates the effects that lifecycle changes have on mode shifts away from public transport is a cohort analysis of public transport users in Montreal, Canada, by Grimsrud and El-Geneidy (2014). This study not only found that public transport use decreases with age, but also that cohorts which have higher usage in their youth tend to decrease their public transport mode share less than cohorts that rely more on other modes when they are young. These findings are rather insightful and useful, as they suggest that lasting ridership via sustained loyalty could be stimulated through the implementation of policies that address the changing mobility needs of public transport users as they proceed through lifecycle changes. In addition, new riders will also always make up a proportion of public transport markets (Barlow & Clark, 2006), and efforts should be made to attract and retain this group as well. Therefore, Perk et al. (2008) state that *"because even a small reduction in turnover would add significantly to the growth of the transit market, strategies designed to increase ridership should focus as much on retaining current riders as on attracting new ones."*

In order for practitioners and policy makers to develop comprehensive strategies aimed at retaining riders, it is necessary to understand and identify which aspects of public transport influence satisfaction and loyalty (Fornell, Johnson, Anderson, Cha, & Bryant, 1996; Friman & Fellesson, 2009). In this context, the purpose of this paper is to review studies that provide insight into the causes of satisfaction and loyalty in public transport with the goal of identifying key strategies that can be implemented to increase ridership retention.

First, to clarify the distinction between satisfaction and loyalty we discuss how these concepts have been defined and used in previous literature. Second, we describe the methodology that is used to select the relevant literature that is reviewed. Next, based on the review of the literature, we discuss and analyse which service factors we find to be the most important with regard to both satisfaction and loyalty. We discuss recommendations for increasing satisfaction and loyalty throughout the text, and recognize that strategies influencing satisfaction tend to address trip specific issues, and those motivating loyalty often address larger, agency-wide issues. Finally, we provide suggestions for further research.

Defining Satisfaction and Loyalty

Customer satisfaction in public transport has been studied since the mid-1960s (Transportation Research Board, 1999, 2002), and since the 1990s, the application of marketing techniques has provided transportation researchers with a tool to study satisfaction with respect to travel (Fornell et al., 1996). The concept of satisfaction with travel has therefore been well-established over time, and frequently discussed and used in the literature. More recently, since the beginning of the twenty-first century, a number of studies have focused on aiming to understand what drives satisfaction compared to loyalty, and it has become important to understand the differences between these two commonly-used terms.

In the context of public transport, satisfaction is defined as a customer's overall experience with a service compared to his or her pre-defined expectations (Morfoulaki, Tyrinopoulos, & Aifadopoulou, 2010), and loyalty as a customer's intention to use the service in the future based on previous experiences (Transportation Research Board, 1999). Although it is possible to measure satisfaction without considering loyalty (Stuart, Mednick, & Bockman, 2000; Tyrinopoulos & Antoniou, 2008), the results of recent studies suggest that the reverse would be theoretically illogical as satisfaction tends to influence loyalty (Chou & Kim, 2009; Lai & Chen, 2011; van Lierop & El-Geneidy, 2016). In addition, the concept of satisfaction is well-established in the literature and it may relate to one specific component of the overall transport service, a combination of components, or the overall service as a composite. Loyalty, however, is more complex to define, and debate exists about how this concept should be measured.

The loyalty debate

The concept of loyalty is not well defined in the transport literature, and due to the fact that it is a more recent topic of study, researchers have not yet agreed on how to measure it. While some researchers claim that satisfaction should be included in the definition of loyalty, others claim that it should not. For example, several authors have suggested that public transport users who (1) are satisfied overall, but also (2) have the intention of continuing to use public transport, and (3) are willing to recommend the service to others, will demonstrate behavioural and emotional loyalty towards public transport (Allen & Allen, 2004; Transportation Research Board, 1999; van Lierop & El-Geneidy, 2016). However, although these three aspects are important in generating loyal customers overall, most authors make the claim that overall customer satisfaction strongly influences customer loyalty rather than being a part of the loyalty construct itself, and therefore should not be included in the definition (Bloemer, De Ruyter, & Peeters, 1998; Chou & Kim, 2009; Lai & Chen, 2011; Minser & Webb, 2010; Oliver, 1999; Olsen & Johnson, 2003; Zhao, Webb, & Shah, 2014). More generally, Zhao et al. (2014) suggest that loyalty can be divided into two aspects: the first being related to a person's continuous behaviour to purchase or use a product or service, and the second having to do with the consumer's attitudes and emotions towards a service on an ongoing basis. This means that many authors claim that loyalty should be based only on (1) intended future usage, and (2) willingness to recommend (Lai & Chen, 2011; Minser & Webb, 2010; Zhao et al., 2014). This two-part definition of loyalty is commonly used because intention to use is often considered a proxy for actual future usage (Lai & Chen, 2011), and users who are willing to recommend the service to others are commonly loyal customers (Reichheld, 2003). There is an underlying assumption throughout the literature that users will continue to use public transport and recommend it to others only when they are satisfied with the service performance (van Lierop & El-Geneidy, 2016).

However, researchers who believe that it is not enough to define loyalty with only variables that describe intended future usage and willingness to recommend, often insist that users' overall satisfaction with the public transport agency should be included in the definition of loyalty; this is because it is possible that some public transport users continue to use the system because they do not have an alternative choice, but are not actually satisfied with the system they are dependent on. (Figler, Sriraj, Welch, & Yavuz, 2011; Transportation Research Board, 1999).

These "captive users," who in contrast to "choice users," tend to use transport out of necessity, (Krizek & El-Geneidy, 2007; van Lierop & El-Geneidy, 2017), may change their mode if given an alternative option that they prefer. Yet, in contrast, Zhao et al. (2014) comment that a reverse effect also can take place when highly satisfied passengers defect from the system simply because a preferred mode becomes available. There may also be people who never have used, or will never use, public transport, but yet are strongly committed to supporting it in their communities. For these reasons, many authors who do not include overall satisfaction as part of the loyalty variable, recognize that overall satisfaction with the public transport agency strongly influences loyalty (Carreira, Patrício, Natal, & Magee, 2014; Kim & Ulfarsson, 2012; Lai & Chen, 2011; Zhao et al., 2014).

In addition to the debate about whether or not overall satisfaction should be included in a loyalty construct, several authors developed loyalty variables that include additional aspects that complement likeliness to use and willingness to recommend. For example, Carreira et al. (2014) developed a loyalty variable that in addition to asking about future usage and positively discussing the agency's service with other people, also assessed whether users considered the service provided by the public transport agency to be their first choice to travel from an origin to a destination. Other researchers asked survey participants to evaluate different travel scenarios and assessed the likeliness to continue using public transport based on the responses (Imaz, Habib, Shalaby, & Idris, 2015). In addition, some studies have used single-question variables to assess public transport users' likeliness to continue using the system (Kim & Ulfarsson, 2012; Şimşekoğlu, Nordfjærn, & Rundmo, 2015). Because of this on-going debate about how loyalty should be measured, and whether satisfaction should be seen as contributing to loyalty, this paper reviews studies that define loyalty in a variety of ways.

Methodology

This study utilizes the realist literature review method to identify and systematically analyse all of the relevant literature regarding the causes of satisfaction and loyalty in public transport. Rather than the solely critical approach of conventional systematic reviews, the realist method incorporates a more explanatory focus (Pawson, Greenhalgh, Harvey, & Walshe, 2005). To define the relevant literature, we conduct a three phase search strategy. The first phase consisted of gathering literature through an extensive search utilizing Scopus, Web of Knowledge, and the

Transportation Research Board archive, TRID. During the second phase, the inclusion and exclusion criteria presented in Table 1 were applied to the search results. The final phase used snowballing techniques to track down and gather other relevant sources from the reference lists of the selected literature. Accordingly, the same inclusion and exclusion criteria were applied to articles found through this method.

Table 1: Inclusion and exclusion criteria for the literature review

Included	Excluded
English language	Non-English language
January 1999 – October 2015	Before January 1999 – after October 2015
Full journal articles	Conference proceedings, lectures, grey literature, presentations, policy documents
Peer-reviewed	Not peer-reviewed
Empirical qualitative and quantitative studies that focus on a case	Studies that focus on simulation techniques, mathematical optimization methods, mode choice models, or quality management frameworks such as SERVQUAL
Focuses on urban public transportation (Bus, Rail, Subway, Metro, Monorail, Streetcar, Light Rail)	Focuses on walking, cycling, automobiles, freight, airlines or other modes
Main focus is on the service factors that measure the quality of service	Main focus is on the users' emotions or characteristics
Local modes, intra-urban travel	High Speed Rail, coach buses, inter-urban travel
Focuses on everyday usage of the mode	Focuses on tourism
Focuses on satisfaction, loyalty, or quality of service	If no mention of satisfaction, loyalty, or quality of service
Empirical model driven analysis or in-depth and systematically analysed interviews	Summary statistics only

The search criteria for studies assessing public transport user satisfaction and loyalty consisted of the following terms within the "title" search field: "(satisfaction OR loyalty) AND (transit OR transport* OR bus OR rail) NOT (Marine OR Air)" In addition the searches were limited to English, being categorized as (Research Area = Transportation), and being published between January 1999 and October 2015. This timeframe was chosen as the Transit Cooperative Research Program (TCRP) report on Customer Satisfaction and Service quality was published in 1999, and this document made a call for increased research in this area (Transportation Research Board, 1999). A total of 116 papers were found in the first phase of the search, of which 100 were excluded after the inclusion and exclusion criteria were applied to the title and key words (Table

1). The second phase of the search yielded an additional five papers, and a final number of 21 were read in full. The final selection of papers that met the inclusion and exclusion criteria has been separated into two tables. Table 2 lists 13 articles that focus on gaining a better understanding of the service attributes influencing overall satisfaction, and Table 3 shows eight articles focusing specifically on the derivers of loyalty.

				SATISFACTION			
Year	Author(s)	Title	Location	Kind of transportation	Sample size	Data Source	Type of analysis
2000	Stuart, K., Mednick, M., & Bockman, J.	Structural Equation Model of customer satisfaction for the New York City subway city	New York City, USA	Subway	1,500	Transportation Panel of the MTA's NYC Transit (Telephone interviews)	Structural Equation Modelling (SEM)
2000	Weinstein, A.	Customer Satisfaction among transit riders: How customers rank the relative importance of various service attributes	San Francisco, USA	Rail	>5000	On-board customer satisfaction survey	Bivariate correlation analysis and factor and regression analysis
2003	Burkhardt, J.	Critical measures of transit service quality in the eyes of older travellers	United States	Bus	88	Focus groups	Qualitative
2007	Krizek, K. & El-Geneidy, A.	Segmenting preferences and habits of transit users and non-users	Minneapolis-St. Paul-Bloomington, Minnesota, USA	Bus users and non-users	4408	Metro Transit users and non-users surveys	Factor analysis & cluster analysis
2008	Tyrinopoulos, Y. & Antoniou, C.	Public transit user satisfaction: Variability and policy implications	Athens & Thessaloniki, Greece	Bus, trolley bus, & rail/metro	1,473 (202, 556, 177, 165, 374)	Passenger questionnaires from five transit agencies	Factor analysis & Ordered logit model
2010	Githui, J., Okamura, T., & Nakamura, F.	The structure of users' satisfaction on urban public transport service in developing country: The case of Nairobi	Nairobi, Kenya	Bus & matatu (mini-bus)	140	Questionnaires (home and office-based interviews)	SEM
2011	dell'Olio, L., Ibeas, A., & Cecín, P.	The quality of service desired by public transport users	Santander, Spain	Bus	305	Focus groups & stated preference surveys	Discrete choice models
2013	Das, A., Ladin, M., Ismail, A., & Rahmat, R.	Consumers satisfaction of public transport monorail user in Kuala Lumpur	Kuala Lumpur, Malaysia	Monorail	400	Questionnaires at rail stations	Importance Performance Analysis
2013	de Oña, J., de Oña, R., Eboli, L., & Mazzulla, G.	Perceived service quality in bus transit service: A structural equation approach	Granada, Spain	Bus	1,200	Transport Consortium of Granada's customer satisfaction survey	SEM
2014	Grujičić, D., Ivanović, I., Jović, J., & Đorić, V.	Customer perception of service quality in public transport	Belgrade, Serbia	Bus	449	Surveys at stops	Importance Performance Analysis
2014	Nwachukwu, A.	Assessment of passenger satisfaction with intra-city public bus transport services in Abuja, Nigeria	Abuja, Nigeria	Bus	300	Questionnaires, field observations, & oral interviews	Principal Component Analysis & regressions

TABLE 2: Literature review results for satisfaction

Year	Author(s)	Title	Location	Kind of transportation	Sample size	Data Source	Type of analysis
2014	Susilo, Y. & Cats, O.	Exploring key determinants of travel satisfaction for multi-modal trips by different traveller groups	Eight European cities	Public transport, car, bicycle, and walking (61% use PT as main mode)	554	European-wide survey: in-person, online, and phone	Multi-variate statistical analyses
2015	Mouwen, A.	Drivers of customer satisfaction with public transport services	The Netherlands	Bus, tram, train, & metro	180,000	Nation-wide on-board survey	Linear regression

TABLE 3: Literature review results for loyalty

LOYALTY							
Year	Author(s)	Title	Location	Kind of transportation	Sample size	Data Source	Type of analysis
2010	Minser, J., & Webb, V.	Quantifying the benefits: Application of customer loyalty modeling in public transportation context	Chicago, Illinois, USA	Bus and train	264	Chicago Transit Authority Customer Satisfaction Survey	SEM
2011	Figler, S., Sriraj, P., Welch, E. & Yavuz, N.	Customer loyalty and Chicago, Illinois Transit Authority buses: Results from 2008 customer satisfaction survey	Chicago, USA	Bus	364	Chicago Transit Authority Customer Satisfaction Survey	Quadrant Analysis, Multivariate regression
2011	Lai, W. & Chen, C.	Behavioural intentions of public transit passengers – The roles of service quality, perceived value, satisfaction and involvement	Kaohsiung, Taiwan	Rail	763	Self-administered questionnaire at transit stations	SEM
2012	Kim, S. & Ulfarsson, G.	Commitment to light rail transit patronage	St. Louis, Missouri & Illinois, USA	Light rail	824	On-board customer satisfaction survey	Binary logit model
2014	Carreira, Rui, Patrício, L., Jorge, R., & Magee, C.	Understanding the travel experience and its impact on attitudes, emotions and loyalty towards the transportation provider – A quantitative study with mid-distance bus trips	Portugal	Bus	1,226	On-board questionnaires	SEM
2014	Zhao, J., Webb, V., & Shah, P.	Customer loyalty differences between captive and choice transit riders	Chicago, USA	Bus and rail	264	Chicago Transit Authority Customer Satisfaction Survey	Multiple-Indicator Multiple Cause Analysis and Multiple Group Analysis
2015	Imaz, A., Habib, K., & Shalaby, A., Idris, A.	Investigating the factors affecting transit user loyalty	Toronto, Canada	Subway, streetcar, and bus	270	Revealed and Stated Preference Commuting survey	Binary logistic regression model
2015	Şimşekoğlu, Ö., Nordfjærn, T., & Rundmo, T.	The role of attitudes, transport priorities, and car use habit for travel mode use and intentions to use public transportation in an urban Norwegian public	Six urban regions of Norway	Public transport (bus, train, tram & metro)	546	Self-administered mail questionnaires	SEM & logistic regression

Findings

Summarizing the Literature

The goal of this review of the literature is to identify which service attributes are most commonly associated with satisfaction and loyalty in local public transport. Accordingly, studies about long distance modes and modes such as walking and cycling are not included, and instead the review focuses on intra-urban bus and rail systems, with several papers including analyses of multiple modes. Table 2 shows that the majority of the literature attempts to understand which service factors derive satisfaction among bus users (7), while fewer focus specifically on rail (3), or multiple modes (3). It is unsurprising that more satisfaction papers focus specifically on bus use; bus is often cited as being the least favourable mode, yet, because it is more economical compared to rail, many transport authorities and cities would benefit from increasing passenger satisfaction among bus users. On the other hand, it is also logical that researchers who focus on loyalty would assess multiple modes, as it is more interesting to know which service factors encourage overall passenger loyalty to public transport services as a whole, and not just to a single mode or specific route. While understanding user satisfaction of specific routes or modes can be useful to encourage and plan specific service changes, it is likely more useful for public transport agencies to focus on increasing loyalty among all kinds of users – including both "captive" and "choice" passengers – as it serves as a reflection of how individuals experience public transport overall. However, as previously discussed, satisfaction is often related to loyalty and therefore it is important to understand specifically which factors increase satisfaction among public transport users.

This review of the literature is not geographically constrained, and papers from different continents have been included. For example, with regard to satisfaction, the majority of the papers come from Europe (6), but studies from North America (4), Africa (2), and Asia (1) are also included. With regard to loyalty, however, the large majority are North American cases (5), with only a few coming from Europe (2) and Asia (1). We have included studies from all regions as they represent cases that assess formal public transport services in cities that have a developed central business district. Another notable difference between the studies presented in Tables 2 and 3 is that they have a wide variety of sample sizes, ranging from Burkhardt's (2003)

qualitative research of focus groups that yielded 88 participants, to Mouwen's (2015) nation-wide study with 180,000 participants. The variation in sample sizes stems from the difference in data sources as some researchers used data collected by transport authorities and others collect their own primary data. Data for these studies was collected in a variety of ways including, telephone interviews, on- and off-board surveys, focus groups, and mixed-methods. While different forms of regression analysis are the most common, Structural Equation Modelling (SEM), Importance Performance Analysis, Factor-Cluster Analysis, and focus groups have been used.

Defining service factors

The studies included in Tables 2 and 3 are based on different data sources, and accordingly, each study assesses different variables influencing satisfaction and loyalty. There are overarching themes present throughout the literature, and based on the variables presented in the included studies, we have identified seven overarching categories, which we present in Table 4 with each service variable being defined according to the literature. We use the categories presented in Table 4 as a framework for our discussion about which service attributes, according to the reviewed literature, will have the strongest effect on overall satisfaction and loyalty.

TABLE 4: Overarching categories and service factor definitions

ONBOARD EXPERIENCE	SERVICE DELIVERY	WAITING CONDITIONS
Cleanliness: *the level of cleanliness and lack of garbage inside the vehicle* **Comfort**: *the comfort of the seats, ceiling height, leg space available on-board* **Seating capacity**: *the number of seats on-board* **Accessibility** (physical): *the ease with which people can board and alight the vehicle* **On-board information**: *the presence of maps and stop announcement on-board* **Crowding**: *passengers' personal space on-board* **Quality of vehicle**: *the physical condition and age of the vehicle* **Safety**: *passengers perception of being safe from crime and traffic while on-board* **Temperature**: *on-board temperature control such as ventilation, air conditioning and heating*	**Reliability**: *the consistency of a vehicle's punctuality and travel time according to scheduled departures and arrivals* **On-time performance / punctuality**: *the punctuality of the service* **Frequency**: *the scheduled frequency of the service* **Travel time**: *how quickly passengers travel from their origin to destination using a specific mode* **Access time**: *the time it takes passengers to get from their origin to the public transport stop or station*	**Waiting conditions**: *the quality of the waiting environment at stops and stations* **Information at stops**: *the information provided at stops and stations including the presence of real-time-information systems* **Safety at stops**: *passengers perception of being safe from crime and traffic while waiting at a stop of station*
	Network coverage: *the extent to which the transport system provides passengers with access to the different locations in the region* **Number of transfers**: *the number of times that a passenger has to change from one vehicle to another in a single trip*	**COSTS**
CUSTOMER SERVICE		**Value**: *passenger perception of value-for-money* **Types of tickets and passes**: *the existence of a variety of ticket types such as student passes or day, week, and month passes* **Ticket selling network**: *the availability of vending locations*
Driver and personnel's attitudes: *the attitude of the driver and personnel as well as the courteousness of the staff and personnel* **Personnel skills**: *the ability of the driver and other staff* **Complaint dealing**: *the way in which the agency deals with passengers' complaints*	**Service provision hours**: *the operating hours of the system* **Convenience**: *the extent to which the agency provides an effective and easy-to-use service* **Stop location**: *whether the location of the stops is convenient for users* **Station parking**: *the availability of park-and-ride facilities at public transport stations* **Waiting time**: *the amount of time a passenger must wait before boarding a vehicle*	**QUALITY OF TRANSFERS**
		Transfer time: *the amount of time it takes a passenger to transfer between vehicles* **Ease of transfer**: *the ease at which a passenger transfers between vehicles*
		IMAGE
		Image: *how a passenger views public transport or their involvement with the service* **Environmentally friendly**: *whether a passenger chooses the mode because it is more ecologically responsible compared to a private car*

The presence of specific service factors

Table 5 demonstrates which service factors are statistically significant or deemed to be important for increasing satisfaction according to the studies included in this review of the literature. Additionally, Table 6 shows the results for loyalty. The outcome is based on our analysis of the statistical outputs, summary charts, and qualitative findings of the papers presented in Tables 2 and 3 taken all together. More specifically, in the tables an "x" represents that the service factor has been found to be statistically significant in the analysis or discussed by the authors as being important. When no "x" is assigned, it means that either the result was not statistically significant, or that it was not accounted for in the analysis. Because negative results are not often published due and contributing to publication bias (Easterbrook, Gopalan, Berlin, & Matthews, 1991), it is not possible to report what has been tested but not been included, and therefore we can only include what the authors have reported in their models and other results. Nevertheless, we analyse and interpret the results of each paper, and thereby go beyond the results published in the abstracts and conclusions of the included literature to avoid bias. The following section uses the results of Tables 5 and 6, to frame our discussion of the service factors influencing satisfaction and loyalty.

TABLE 5: Service factors influencing satisfaction

x= statistically significant in the analysis or discussed by the authors as being important	On-board Experience									Service Delivery												Waiting conditions			Transfers		Customer service			Costs			Image	
	cleanliness	comfort	seating capacity	accessibility (physical)	on-board information	crowding	quality of vehicle	safety	temperature	reliability	on-time performance/ punctuality	frequency	travel time	access time	network coverage	number of transfers	service provision hours	convenience/ effective	stop location	station parking	waiting time	waiting conditions	info at stops	safety at stops	transfer time	ease of transfer/distance	driver and personnel's behaviour and attitudes	personnel skills	complaint dealing	value	types of tickets and passes	ticket selling network	image	environmentally friendly
Stuart et al. (2000)	X	---	---	---	---	X	---	X	---	X	---	X	X	---	---	---	---	---	---	---	---	---	---	---	---	---	X	---	---	X	---	---	---	---
Weinstein (2000)	X	X	X	X	X	---	X	X	X	---	X	X	---	---	---	---	X	---	---	X	---	X	---	X	X	X	X	---	---	---	---	---	---	---
Burkhardt (2003)	---	X	X	X	X	---	X	X	---	X	---	---	---	X	---	---	X	---	---	---	---	X	X	---	---	---	X	---	X	X	---	X	---	---
Krizek and El-Geneidy (2007)	X	X	---	---	X	---	---	X	---	X	X	---	X	---	X	---	X	---	---	X	X	---	---	---	X	X	X	X	---	---	---	---	---	---
Tyrinopoulos and Antoniou (2008)	X	---	---	X	X	---	X	X	---	---	X	X	---	---	X	---	---	---	---	---	X	X	X	---	---	X	X	---	---	X	X	---	---	---
Githui, Okamura, and Nakamura (2010)	---	X	---	---	---	X	---	X	---	---	X	X	---	---	X	---	---	---	X	---	---	X	---	---	---	---	X	---	---	X	X	---	---	---
dell'Olio, Ibeas, and Cecín (2011)	X	X	---	---	---	X	---	---	---	---	---	---	X	---	---	---	---	---	---	---	X	---	---	---	---	---	X	---	---	---	---	---	---	---
Das, Ladin, Ismail, and Rahmat (2013)	X	X	X	X	X	---	---	X	---	---	X	---	---	---	X	---	---	---	---	X	---	X	---	---	---	---	---	---	---	---	---	X	---	X
de Oña, de Oña, Eboli, and Mazzulla (2013)	X	X	---	X	X	X	---	X	X	---	X	X	X	X	---	---	---	---	---	---	X	---	---	---	---	---	X	---	---	X	---	---	---	---
Grujičić, Ivanović, Jović, and Đorić (2014)	X	---	---	---	X	---	---	---	X	---	X	---	---	---	X	---	---	---	---	---	X	---	---	---	---	---	X	---	---	X	---	---	---	---
Nwachukwu (2014)	X	X	X	X	---	---	X	---	---	---	---	X	X	X	X	---	---	---	---	---	---	X	X	---	---	---	---	---	---	---	---	---	---	---
Susilo and Cats (2014)	---	X	X	---	---	---	---	---	---	X	---	X	X	---	---	X	---	---	---	---	---	X	---	X	---	X	---	---	---	---	---	---	---	---
Mouwen (2015)	X	X	X	X	X	---	---	X	---	---	X	X	X	---	---	---	---	---	---	---	---	---	X	X	---	---	X	---	---	X	---	X	---	---
TOTAL	10	10	6	7	7	4	3	9	3	4	8	8	7	3	5	1	3	0	2	3	5	7	3	3	2	4	10	1	1	7	2	3	0	1

TABLE 6: Service factors influencing loyalty

X= statistically significant in the analysis or discussed by the authors as being important	On-board Experience										Service Delivery											Waiting conditions			Transfers		Customer service			Costs			Image	
	cleanliness	comfort	seating capacity	accessibility (physical)	on-board information	crowding	quality of vehicle	safety	temperature	reliability	on-time performance/ punctuality	frequency	travel time	access time	network coverage	number of transfers	service provision hours	convenience/ effective	stop location	station parking	waiting time	waiting conditions	info at stops	safety at stops	transfer time	ease of transfer/distance	driver and personnel's behaviour and attitudes	personnel skills	complaint dealing	value	types of tickets and passes	ticket selling network	image	environmentally friendly
Minser and Webb (2010)	x	x	---	x	---	---	---	x	---	x	---	---	---	---	x	---	---	---	---	---	---	---	---	---	---	---	x	---	---	x	---	---	x	---
Figler et al. (2011)	x	---	---	---	---	---	---	x	---	x	x	x	x	---	---	---	---	x	---	---	---	x	---	x	x	---	x	x	---	x	---	---	---	---
Lai and Chen (2011)	x	---	---	---	x	---	x	x	---	---	---	x	---	---	x	---	x	---	---	---	---	x	x	x	---	---	x	---	x	x	---	x	x	---
Kim and Ulfarsson (2012)	---	---	---	---	---	---	---	x	---	---	x	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	x	---	---	---	---
Carreira et al. (2014)	x	x	---	---	x	---	x	---	x	---	---	---	---	---	---	---	---	---	---	---	---	x	---	---	---	---	x	x	---	x	---	---	---	---
Zhao et al. (2014)	---	x	---	---	x	---	---	x	---	x	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	x	---	---	x	---
Imaz et al. (2015)	---	---	---	---	---	x	---	---	---	---	x	---	x	---	---	x	---	---	---	---	x	---	---	---	x	---	---	---	---	x	---	---	---	---
Şimşekoğlu et al. (2015)	---	---	---	---	---	---	---	x	---	---	---	x	---	x	---	---	---	x	---	---	---	---	---	---	---	---	---	---	---	---	---	---	x	---
TOTAL	4	3	0	1	3	1	2	6	1	3	3	3	2	1	2	1	1	2	0	0	1	3	1	2	2	0	4	2	1	7	0	1	4	0

Key Variables

The results presented in Table 5 clearly demonstrate that the service attributes most commonly influencing satisfaction are: on-board cleanliness (10/13 papers) and comfort (10/13), the behaviour and attitudes of the personnel (10/13), safety (9/13), as well as the punctuality (8/13) and frequency of the service (8/13). Consequently, these service factors should be the focus of public transport agencies who intend to increase ridership satisfaction in the short-term. However, with regard to long-term planning, it is important that public transport agencies focus on the service attributes which are strongly associated with overall loyalty. Accordingly, the service factors that are important to motivating loyalty in the long-term both overlap and are different from those affecting satisfaction and are: the perception of value for money (7/8), on-board safety (6/8) and cleanliness (4/8), interactions with personnel (4/8) and the image and commitment to public transport that the user feels (4/8).

These service attributes are discussed in detail in the sections below. For example, because cleanliness and comfort are categorized as being on-board service attributes in Table 4, these factors are discussed in the context of other factors that are associated with passengers' on-board experiences. Furthermore, the following subsections present analyses not only of the most frequently assessed and important service factors influencing satisfaction and loyalty, but also include a discussion of other less-researched, and sometimes also less influential, service attributes that have been presented in the literature.

On-board experience

On-board experience is based on the level of overall comfort that passengers experience while on-board a public transport vehicle. Whereas at its most basic, on-board comfort can be determined by the comfort of the seats inside the vehicles (Lee, Jin, & Ji, 2009), it generally will encompass the quality of the overall on-board experience. On-board experience is therefore often a reflection of on-board comfort and ranges from the physical aspects such as vehicle quality (Carreira et al., 2014; Lai & Chen, 2011; Tyrinopoulos & Antoniou, 2008; Weinstein, 2000), to interpersonal interactions such as those with drivers and other personnel (Burkhardt, 2003; Figler et al., 2011; Krizek & El-Geneidy, 2007; Lai & Chen, 2011).

In-vehicle cleanliness and comfort are, according to the review of the literature, the most important factors influencing users' on-board experiences and are significant factors influencing perceived satisfaction and loyalty overall (Carreira et al., 2014; Das et al., 2013; de Oña et al., 2013; Mouwen, 2015). Weinstein (2000) groups cleanliness along with comfort as it influences how individuals perceive the inside of the vehicle, and both cleanliness and comfort may also vary depending on seasonality (Jacques, Manaugh, & El-Geneidy, 2013).

Users' perceptions of safety are also associated with overall satisfaction and loyalty (Githui et al., 2010; Krizek & El-Geneidy, 2007; Şimşekoğlu et al., 2015), and it can relate to safety from traffic (Peden et al., 2004), or safety from crime (Smith & Clarke, 2000). Overall, safety appears to be a stronger indicator of satisfaction outside of Europe (Das et al., 2013; Githui et al., 2010; Krizek & El-Geneidy, 2007), even though this factor is commonly included in surveys in European studies (Carreira et al., 2014; dell'Olio et al., 2011; Eboli & Mazzulla, 2012; Mouwen, 2015). However, further research is needed to understand why safety performs strongly in non-European studies.

In-vehicle crowding is also an important factor influencing passengers' experiences in public transport and is related to overall comfort and safety (Carreira et al., 2014; dell'Olio et al., 2011; Imaz et al., 2015), as crowded vehicles can be perceived as an encroachment on personal space, and a personal safety concern (Cox, Houdmont, & Griffiths, 2006). A similar measure to crowding is the seating capacity of the vehicle, and while seating capacity influences satisfaction (Mouwen & Rietveld, 2013; Nwachukwu, 2014), on-board crowding has a stronger effect on loyalty (Carreira et al., 2014; Imaz et al., 2015). The most common way to decrease crowding is to increase service frequency, a topic that will be discussed later in this paper.

Other factors that are related to passengers' on-board experiences include in vehicle temperature (Chou & Kim, 2009; de Oña et al., 2013), and the quality and physical accessibility of the vehicle (Carreira et al., 2014; dell'Olio et al., 2011; Hussein & Hapsari, 2015; Lai & Chen, 2011). These factors will likely influence the satisfaction of riders in different ways, with seniors, for example, being more strongly influenced by the physical accessibility of the service (Rosenbloom, 2004).

Accessible and accurate on-board information is also essential to increase satisfaction among users. For example, Weinstein (2000) found service information to be the most critical aspect needed to motivate satisfaction. One way that on-board information could be improved is

by increasing the availability of scheduling information and maps; furthermore, several researchers have suggested that on-board information that is either displayed or announced can be an effective way to increase overall satisfaction (Burkhardt, 2003; Krizek & El-Geneidy, 2007). Good communication and effective wayfinding can also serve as helpful tools to assist passengers in optimizing their experience with the overall public transport network.

Service delivery

While on-board experience is an essential determinant influencing satisfaction and loyalty among public transport users, improvements to on-board comfort will only be beneficial if passengers are satisfied with the reliability of the service. The review of the literature shows that, passengers who are satisfied with the frequency of service and the on-time performance or punctuality are very likely to be satisfied with the service overall (de Oña et al., 2013; Githui et al., 2010; Mouwen, 2015; Tyrinopoulos & Antoniou, 2008; Weinstein, 2000). The fact that compared to frequency and on-time performance, reliability tends to be a weaker indicator of satisfaction, may stem from the fact that assessing whether a bus or train is generally on-time, or whether it runs frequently tends to be an easier task for a passenger to comment on compared to assessing the vaguer concept of reliability. Assessing reliability is a comparatively more complex issue as it involves knowledge of the full public transport schedule over time. With this in mind, Chakrabarti and Giuliano (2015) define a reliable service *"as one which consistently operates according to its schedule or plan."* To clarify this further, a frequently operating service that is punctual at the beginning of the route may not be considered reliable if there often is variation in on-time performance farther along the route. Therefore, a user may have reported that a service was punctual and frequent, but may be unreliable due to inconsistencies in journey times from day to day. While waiting time is related to overall satisfaction (dell'Olio et al., 2011; Nwachukwu, 2014; Tyrinopoulos & Antoniou, 2008), waiting time due to unreliability can have especially negative consequences and be burdensome to passengers with several transfers (Rietveld, Bruinsma, & van Vuuren, 2001). Passengers are likely to be especially vulnerable to unexpected waiting times associated with unreliable services, compared to expected waiting times that are clearly communicated to passengers. However, the studies included in the review did not include information about passengers experience with and without the use of real-time arrival tracking on personal mobile phones, which may be changing transport users' waiting experiences and opinions about transport reliability. Overall, while on-time performance and

frequency have been found to be associated with overall satisfaction, to ensure loyalty to transport in the long-term, agencies should also focus on increasing users' perceptions of reliability.

Several other service factors also influence service delivery, and according to Stuart et al. (2000), travel time, or speed, is at least as important as the frequency of service. Other authors also agree that total travel time is an important factor influencing passenger satisfaction (dell'Olio et al., 2011; Mouwen, 2015; Susilo & Cats, 2014), and speed is often a determinant in choosing public transport over another mode (Şimşekoğlu et al., 2015). Therefore, Figler et al. (2011) suggest that it is good news for a public transport agency when there are *"riders who use the bus because of its convenience and not because it is the lesser evil of transportation modes."* Convenience will, however, only be viewed positively if the network coverage allows passengers to travel from their origin to destination at a time of their preference with minimized access time (Burkhardt, 2003; de Oña et al., 2013), waiting time (dell'Olio et al., 2011; Tyrinopoulos & Antoniou, 2008), travel time (Mouwen, 2015; Stuart et al., 2000), and number of transfers (Imaz et al., 2015; Susilo & Cats, 2014). In addition, convenience could also be increased by developing station amenities such as park-and-ride facilities (Das et al., 2013; Krizek & El-Geneidy, 2007). Accordingly, service delivery improvements should include developing waiting areas that are well thought-out, as they are an integrated aspect of the public transport network.

Waiting conditions

Many researchers have surveyed passengers about how they experience waiting conditions, and although several studies found that the quality of waiting conditions influenced both overall satisfaction and loyalty (Lai & Chen, 2011; Nwachukwu, 2014; Tyrinopoulos & Antoniou, 2008), in many studies it did not. More specifically, the quality of the information, including real-time information on personal mobile phones, and at stops and stations does not have a strong track record of influencing overall satisfaction and loyalty. Therefore, further research is needed to assess how satisfaction and loyalty are influenced by passengers' access to different mediums of information and as well as the variation in the quality of information. This is in contrast to on-board information which is reported as influencing satisfaction in a greater number of studies (Burkhardt, 2003; de Oña et al., 2013; Lai & Chen, 2011; Tyrinopoulos & Antoniou, 2008; Weinstein, 2000). These results demonstrate that waiting conditions may not be as important as researchers previously anticipated, or that the wrong questions about waiting conditions are

being asked in researchers' surveys. Moreover, mode type does not appear to be a factor and waiting conditions seem to be more important outside of Europe, which may be due to harsher temperatures in the non-European examples included in this study (Burkhardt, 2003; Das et al., 2013; Githui et al., 2010; Nwachukwu, 2014; Weinstein, 2000). In addition, none of the studies included information about passengers accessing information through their own mobile phones while at the stops. Perhaps these findings demonstrate that the way that passengers' access information about public transport at stops and stations is changing; rather than using the information available at stops and stations passengers may be relying more on personal public transport apps on their mobile phones. However, to better understand how information at stops and stations influences overall satisfaction and loyalty further studies are needed.

Quality of transfers

Transferring between vehicles is often considered undesirable and a burden to public transport users (Iseki & Taylor, 2009). Nevertheless, few studies survey passengers about their satisfaction with transfer times or the ease of transferring between vehicles. However, when researchers have asked about passengers' transferring experiences, they usually highlight the importance of planning for a smooth and seamless transfer between vehicles. For example, Tyrinopoulos and Antoniou (2008) found that both transfer distance and waiting time influence overall satisfaction, and several other European and American studies revealed that the ease of transferring relates to overall satisfaction (Krizek & El-Geneidy, 2007; Susilo & Cats, 2014; Weinstein, 2000). In the future, transport agencies and public transport researchers could incorporate detailed questions about passengers' transfer experiences in order to better understand which aspects of a transfer are most strongly associated with overall satisfaction.

Customer service

Customer service is an important aspect deriving customers' overall satisfaction with public transport. How a public transport user perceives his or her interaction with a public transport agency's bus drivers and personnel is an important indicator of overall satisfaction (Burkhardt, 2003; de Oña et al., 2013; Githui et al., 2010; Grujičić et al., 2014; Krizek & El-Geneidy, 2007; Mouwen, 2015; Stuart et al., 2000; Tyrinopoulos & Antoniou, 2008; Weinstein, 2000). For example, de Oña et al. (2013) found that the behaviour of the staff responsible for Granada, Spain's bus services was one of the main factors explaining passengers' perceptions of overall

service quality. In addition, Carreira et al. (2014) found passengers' perceptions of staff skills influenced overall loyalty. Interestingly, passengers' perceptions of the behaviours and attitudes of drivers and personnel appear to be more strongly related to satisfaction than loyalty. This might be because in many cases users do not interact with personnel on a regular basis, and instead judge customer service based on an experience they had with a particular bus driver or staff member. When a user perceives poor customer service, they are likely to become unsatisfied, but might not become disloyal. However, the finding that users' perceptions of staff skills influence loyalty may be related to the fact that skills are often representative of road safety, and if safety conditions are found to be poor, users might switch modes.

The way in which agencies deal with customer complaints is also associated with both satisfaction and loyalty (Burkhardt, 2003; Lai & Chen, 2011). Some authors recognize the importance of agencies' abilities and willingness to deal with customer complaints in a responsive and efficient matter as a contributor to overall satisfaction and loyalty. While customer complaints are often perceived as a negative reflection of an agency's services, it is important to recognize that customer complaints can be used as a tool to improve overall customer satisfaction. For example, in the context of South Korea and Taiwan, Chou and Kim (2009), measured the impact of customer complaints on loyalty, and found that as passenger complaints increased in Korea, loyalty decreased and that in Taiwan, passengers' complaints increased loyalty. Although Chou and Kim's (2009) research was not included in either Table 2 or 3 because of its focus on high-speed rail, these findings are likely to be helpful for agencies operating different modes as they suggest that in the Taiwanese context, complaints are handled well, turning them into an asset for passenger loyalty. Other public transport agencies can learn from the Taiwanese example by developing strategies that aim at using customer complaints as a tool for improving customer satisfaction and loyalty.

Costs

For many users the cost of using public transport is a major determinant of their likeliness to be satisfied with the system. For example, Tyrinopoulos and Antoniou (2008) demonstrate that it is important for public transport agencies to offer a variety of tickets and passes with different price structures to reflect the needs of the users. Furthermore, these authors also discuss the importance of having a ticket selling network that is efficient and easy to use and is available at various vending locations. In addition, Lai and Chen (2011) discussed the importance of

distinguishing between actual and perceived travel costs, and their results demonstrated that it is important for public transport agencies to distinguish between actual costs, users' perceptions of service value, and users' understanding of public transport agency spending.

Customer satisfaction and loyalty are related to users' perceptions of the costs associated with public transport services (de Oña et al., 2013; Githui et al., 2010; Grujičić et al., 2014; Mouwen, 2015; Stuart et al., 2000; Tyrinopoulos & Antoniou, 2008). For example, the variety of tickets and passes (Githui et al., 2010; Tyrinopoulos & Antoniou, 2008) and the ticket selling network of a transport agency is associated with how satisfied users are overall (Das et al., 2013; Weinstein, 2000). Yet, while these factors are related to overall satisfaction, they do not clearly influence user loyalty which is more strongly associated with users' opinions about whether they are receiving the service they believe they should be, given the amount of money they are spending. For example, out of the eight loyalty papers included in Table 3, all – except for one (Şimşekoğlu et al., 2015) – revealed the importance that users' perceptions of value have on loyalty. This likely has to do with the fact that for public transport users who also have access to a car, and who are spending on the upkeep of a personal vehicle, public transport costs are often viewed as an addition to their monthly transport costs.

Image

The concept of image is based on how passengers view public transport as contributing not only to their own welfare, but to society at large. Having a positive image of public transport influences customer satisfaction (Minser & Webb, 2010), but more importantly, it is strongly associated with loyalty (Lai & Chen, 2011; Minser & Webb, 2010; Şimşekoğlu et al., 2015; Zhao et al., 2014). The review of the literature has revealed that recent research has found that passengers' positive attitudes towards using public transport are a significant predictor of their intention to use the mode and therefore also of their overall loyalty (Şimşekoğlu et al., 2015; Zhao et al., 2014). In addition, positive attitudes towards using public transport also increase passenger involvement and significantly affect behavioural intentions towards continuing to use public transport in the future (Lai & Chen, 2011). Therefore, Lai and Chen (2011) suggested that public transport agencies should focus on developing strategies that aim to motivate passengers to strongly identify with public transport. Using strategies to motivate customers to develop a positive connection with a product or service is a commonly discussed marketing strategy that involves the development of schemes that influence potential customers to have an emotional

association with a product or service (Mahajan & Wind, 2002; Zaichkowsky, 1994). While these types of strategies are common within the automobile industry (Sheller, 2004), they are not frequently used to promote public transport, even though they are likely to increase loyalty to the mode (Lai & Chen, 2011), and should be a focus of future studies.

Furthermore, when public transport agencies and transportation researchers survey users about their satisfaction and loyalty, questions regarding passengers' perceptions of the public transport agency are rarely included. Similarly, customer satisfaction questionnaires seldom ask respondents whether using public transport constitutes a part of their personal identity. However, when customer satisfaction surveys do include questions about passengers' image or involvement with public transport, the results demonstrate that these concepts are exceptionally important for increasing loyalty among public transport users. Moreover, other researchers have suggested that passengers' emotional feelings towards a mode are associated with their mode choice (Shiftan, Barlach, & Shefer, 2015). Therefore, due to the finding that image or involvement with public transport is associated with loyalty, public transport agencies should focus on developing communication strategies that influence users' emotional attachment to public transport.

Conclusions

This review of the literature has revealed which service factors are frequently cited as increasing satisfaction and loyalty among public transport bus and rail users. While there is evidence that there is a large variety of service attributes influencing public transport users' reported satisfaction, the discussion above has highlighted which ones are most commonly discussed in the literature. Accordingly, figure 1 illustrates which service factors are most associated with satisfaction and loyalty by pictorially representing the relative importance of service attributes that, according to the selected literature, contribute the most to increased overall satisfaction and loyalty among public transport users. The figure includes only the service factors which were deemed to be important in at least half of the papers assessed in this review of the literature (present in ≥ 50% of the papers in Tables 2 and 3). Also, the larger the font size of a word, the more frequently it occurs in the literature, meaning that the larger words appear in a higher number of papers. The following section discusses how transport agencies can use these findings to improve (1) passengers' experiences, and (2) passengers' perceptions of public transport.
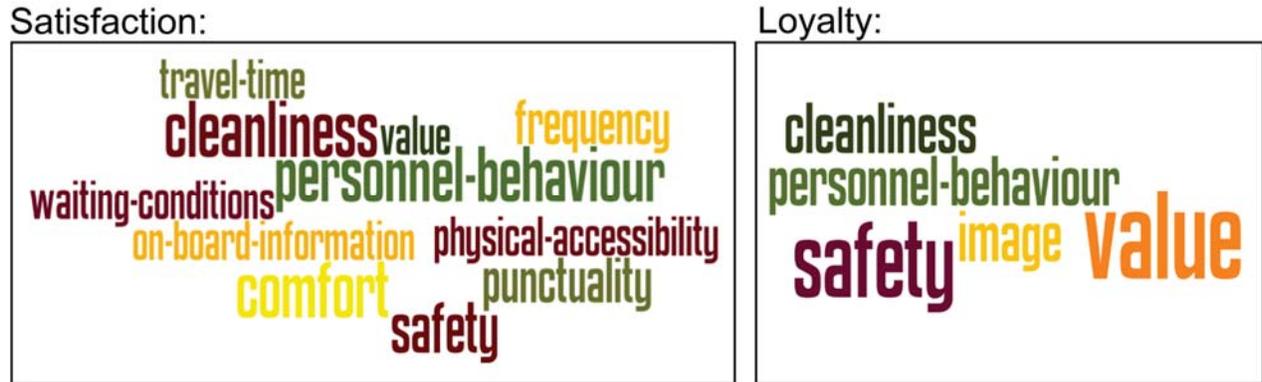
Fig. 1: Service factors to focus on for improving satisfaction (left), and loyalty (right)

Passenger Experience

Experiencing a high level of comfort has been found to increase overall satisfaction with public transport. However, the context in which researchers assess this service attribute varies greatly across studies; for example, while several authors highlight the importance of decreasing crowding (Carreira et al., 2014; dell'Olio et al., 2011; Imaz et al., 2015), others focus on developing comfortable seats (Das et al., 2013; Nwachukwu, 2014) desirable temperature and airflow (dell'Olio et al., 2011; Grujičić et al., 2014), or good waiting conditions (Susilo & Cats, 2014; Tyrinopoulos & Antoniou, 2008). Yet, regardless of context, transport agencies must strive to develop services that are clean, safe, and physically accessible to those who wish to use them. Another aspect of comfort can be related to the customer experience that a public transport user has with the driver and staff. For example, dell'Olio et al. (2011) suggests that to increase passenger comfort, drivers are given a course on calm driving, and Burkhardt (2003) emphasized the need for polite and courteous drivers who would exhibit good customer service by, for example, calling out stops. Users who have a positive perception of personnel behaviour are more likely to be satisfied overall (Grujičić et al., 2014). The results of these studies demonstrate the need for public transport agencies to improve trip comfort in a multifaceted manner.

On time performance, frequency, and travel time have also been found to be associated with overall satisfaction (de Oña et al., 2013; Figler et al., 2011; Tyrinopoulos & Antoniou, 2008). Krizek and El-Geneidy (2007) discuss specific interventions such as the use of swipe cards in order to decrease travel times by speeding-up the boarding process. These authors also suggest the use of next arrival systems in order to improve passengers' perceptions about

punctuality. dell'Olio et al. (2011) similarly develop suggestions to improve passengers' perceptions with regard to service quality by providing better information about schedules and routes. Most interestingly, several authors have argued that the key to overall satisfaction is to offer a personalized service where transport is closely geared to the individual user so that each traveller can have his or her needs met for every specific trip (Burkhardt, 2003; Susilo & Cats, 2014). Personalizing users' travel experiences with regard to mode, fare, and schedule will be important for the future of public transport as it would present options for travellers to choose which service features they prefer to maximize for a specific trip. With this in mind, agencies should work to ensure that personalized travel does not motivate competition between public transport modes, but instead maximizes the use of each mode based on the specific temporal and utilitarian needs of each user.

Although factors that are related to the service delivery and on-board comfort appear to be conceptually unrelated, operationally they are rather connected. For example, increasing service frequency would likely lead to increased comfort as crowding would decrease. In addition, passenger comfort would likely also be increased with shorter journey times and improvements to driver and personnel behaviour. In addition, drivers might be able to provide better customer service if their schedule increased their chances of being consistently punctual. Users' perceptions of the drivers might also improve if the names of stops were to be announced electronically and payment did not involve interactions with the driver.

Passenger Perception

The above discussion has demonstrated that strategies which aim to improve overall satisfaction directly target user experience. However, those implemented to increase loyalty aim to involve users by improving their overall perceptions of different aspects of public transport services. For example, rather than providing a discussion about actual value-for-money, Lai and Chen (2011) claim that customers' perceptions of value is important, and that it is the role of the public transport agency to effectively communicate cost savings (compared to other modes) to their users. In addition, to increase passenger loyalty, public transport agencies should communicate the societal benefits of public transport as a public good to both users and potential users. Minser and Webb (2010) further demonstrate this point by revealing that users who have a positive

perception of service quality will also have a better public image of the system. These authors make clear that a customer's loyalty is not based on a singular positive trip experience, but rather that loyalty, like trust, takes time. Minser and Webb (2010) also claim that loyalty is also not only a result of consistent service delivery, but that loyalty is *"the development and maintenance of trust in the agency's customer base."* This reveals that while satisfaction can be instant, loyalty is developed over time. Accordingly, it is in the best interest of public transport agencies to manage customer expectations by providing customers with the services that they expect to receive.

For example, with regard to reliability, Tyrinopoulos and Antoniou (2008) comment that the goal of public transport agencies should be to develop a service in which public transport users perceive service frequency and trip time as being implicitly guaranteed. These authors place a greater emphasis on increasing passenger perception of reliability rather than developing goals based on frequency and travel time that do not involve the perception of the passenger. Such a strategy is one way for an agency to communicate to its users that it can fulfil specific travel needs. Furthermore, Lai and Chen (2011) recognize that it is important to develop strategies that influence users to identify with using public transport. These authors suggest that public transport agencies use advertisements and even celebrity endorsements as a way to motivate passenger involvement with public transport. Similarly, Zhao et al. (2014) reminds agencies of the importance of developing market-specific strategies for different populations of public transport users. And finally, Şimşekoğlu et al. (2015) highlight the importance of promoting the benefits of using public transport in general.

Recommendations for Future Research

This review of the literature discussed the service factors that are most associated with overall satisfaction and loyalty in urban public transport. Furthermore, the analysis has revealed that whereas overall satisfaction is primarily related to travel experience, loyalty is a result of a longer-term and trusting relationship between the user and the agency. While the majority of studies focusing on understanding loyalty in public transport develop variables based on a user's intention to continue using public transport in the future as well as on his or her likeliness to recommend it to others, future research may benefit from incorporating agency trust and an

assessment of the image and commitment to public transport that a user experiences. In addition, future studies should aim to improve the understanding of what is not being measured, as researchers are always limited to analysing only the questions that were included in the customer satisfaction questionnaires. Although a debate exists about how loyalty should be defined, we have attempted to highlight common threads and have elucidated that the concept of loyalty is best defined based on a user's intention to continue using the service, willingness to recommend it to others, overall satisfaction, and most importantly, the user's image of or involvement with public transport. However, further research is needed to resolve the debate on how loyalty should be defined in the context of public transport research. Future studies should also attempt to quantify which service factors most influence satisfaction and loyalty in specific geographic and cultural contexts in order to clarify to practitioners how to prioritize service improvements, and similar research could be applied to intercity, long-distance, travel. Finally, because the results of this review suggest that public transport users who have a positive image of the agency and consider public transport an integral component of a city dweller's daily life are more likely to demonstrate loyalty, more research is needed to explore how user's image of public transport influences loyalty across modes, populations, and geographic regions.

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