PUBLIC IMAGE:

Determining the effects of users' image of public transit on loyalty

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ABSTRACT

In many cities, transit agencies are focusing on increasing passenger satisfaction and loyalty in response to regional policies aimed at decreasing auto-usage and increasing the use of more sustainable modes. Accordingly, in recent years researchers have begun to explore how users' views and opinions about public transit influence user satisfaction and future behavioural intentions. Based on an analysis of survey data collected along a bus route in Montreal, Canada, this paper assesses whether users' image of public transit influences their satisfaction and intention to continue using public transit in the future. Two binary logit models are developed and the results reveal that having a positive image of transit increases users' odds of being satisfied and of intending to continue using transit in the future. Results also suggest that previous transit usage is a good indicator of intended future usage. Furthermore, this paper explores whether users' image of transit should be considered when assessing loyalty. Based on our findings, we suggest that loyalty constructs in public transit research should be composed of users' image of public transit, their overall satisfaction with a particular service, and, passengers' intentions to continue using the service in the future. Overall, this study is useful for researchers and transit agencies aiming to better understand and increase loyalty among current and future public transit users.

Key words: Public transit, bus, satisfaction, loyalty, image

INTRODUCTION

In many cities, transit agencies are focusing on increasing passenger satisfaction and loyalty in response to regional policies aimed at decreasing auto-usage and increasing the use of more sustainable modes. Accordingly, in recent years researchers have begun to explore how users' views and opinions about public transit influence user satisfaction and future behavioural intentions (Abou-Zeid, Witter, Bierlaire, Kaufmann, & Ben-Akiva, 2012; Beirão & Cabral, 2007; Lai & Chen, 2011). Furthermore, researchers have found that passengers who are satisfied with transit services tend to be loyal (Chou, Lu, & Chang, 2014; Minser & Webb, 2010; Shiftan, Barlach, & Shefer, 2015; van Lierop & El-Geneidy, 2016; Zhao, Webb, & Shah, 2014). Many of these satisfaction studies focus specifically on understanding the influence of users' overall satisfaction with transit services based on their opinions of specific service quality attributes. While these studies are useful for determining which components of a transit service agencies should address in order to increase users' overall satisfaction, they rarely account for transit users' attitudes towards transit. More specifically, only few studies have accounted for the relationship between users' image of transit when assessing loyalty and discussing ridership retention. Furthermore, the relationships between having a positive or negative image of public transit, being satisfied with transit overall, and having the intention to use transit in the future remain unclear. With this in mind, the purpose of this paper is to better understand whether users' image of public transit has an influence on users' (1) satisfaction, and (2) their intention to continue using the service in the future. The research aims to understand the relationship between transit users' opinions about the image they have of public transit and their satisfaction with the service, and whether passengers' image of public transit is a determinant of loyalty. This paper also aims to assess whether users' image of transit should be considered when assessing loyalty.

To better understand how to increase overall transit ridership retention, we focus specifically on users' satisfaction and intended future usage as these are two important components of loyalty. For example, according to the Transit Cooperative Research Program's (TCRP) Report 49, satisfaction and the intention to continue using transit in the future are two important elements of loyalty (Transportation Research Board, 1999). Therefore, for transit agencies it is important to increase customers' satisfaction and intended future use as a way to motivate increased user loyalty. However, the concept of loyalty is not simple to define, especially for a public service such as transit where competition often lies across modes, rather than among different service providers. In addition, loyalty is also difficult to define considering that for some users public transit is the only mode that is a viable option. Therefore, as transit agencies and researchers have begun to concentrate on increasing their understanding of passenger loyalty (Shiftan et al., 2015; Tyrinopoulos & Antoniou, 2008; Wen, Lan, & Cheng, 2005), the definition of loyalty has become a point of debate. For example, several authors have suggested that behavioural and emotional loyalty towards transit results from users' overall satisfaction, their intention of continuing to use public transit, and their willingness to recommend the service (Allen & Allen, 2004; Transportation Research Board, 1999). Others have suggested that loyalty should be based on whether users consider the service provided by the transit agency to be their first choice to travel from an origin to a destination (Carreira, Patrício, Natal, & Magee, 2014). Although there are different definitions of loyalty, most authors agree that it should include passengers' intentions to continue using the service which is often considered a proxy for actual future usage (Lai & Chen, 2011).

With this in mind, the following section of this paper briefly reviews the relevant literature on transit users' satisfaction and intended future usage. The review of the literature also elaborates

on the importance of understanding the image that users have of public transit in general. Next, the study context and data used in this study are described. This is followed by a section presenting the summary statistics that are used to explore passengers' satisfaction and intended future usage in the context of this study. Summary statistics are also used to explore users' image of public transit. Next, to further explore two important components of loyalty, we develop two binary logit models in order to understand whether the image that users have of public transit has an influence on satisfaction (model 1), and the intention to continue using the service in the future (model 2). Finally, based on the findings from the statistical models, the paper concludes by proposing an improved approach to assessing customer loyalty.

LITERATURE REVIEW

Satisfaction and future usage

Research on transit users' satisfaction has suggested that as customer satisfaction increases, so does the tendency for users to have the intention of continuing to use the service (Chou et al., 2014; Minser & Webb, 2010; Shiftan et al., 2015; van Lierop & El-Geneidy, 2016; Zhao et al., 2014). Therefore, it is in the best interest of transit agencies to increase satisfaction among customers, as it is a way to retain current users. In addition, increasing overall customer satisfaction is also a way to attract new customers, as satisfied users often promote the service to others (Diab, van Lierop, & El-Geneidy, 2017). For these reasons, an increase in customer satisfaction can be beneficial for transit agencies as satisfied customers often have a positive impact on growth and profitability (Heskett, Jones, Loveman, Sasser, & Schlesinger, 2008; Loveman, 1998; Rigby & Ledingham, 2004). Furthermore, satisfying transit users can be beneficial to cities as an increase in loyal transit users may increase the frequency at which they use transit, thereby decreasing auto-based trips in urban areas.

The majority of customer satisfaction research related to transit is focused on understanding what influences users to be satisfied with transit services in general. The most common way that researchers have addressed this question is by investigating which components of a trip have the greatest impact on overall trip satisfaction. For example, Stuart, Mednick, and Bockman (2000) applied structural equation modelling techniques to demonstrate how different service attributes directly and indirectly influence customers to be satisfied with the subway system in New York. These authors found that, for example, speed, security, and service frequency, are some of the specific trip attributes influencing overall satisfaction. Other researchers have also attempted to identify the specific attributes that influence overall passenger satisfaction, such as Tyrinopoulos and Antoniou (2008) who used factor analysis and ordered logit modelling to analyse data about bus and rail services from two regions in Greece, and found that a well-coordinated transportation system with a service that is accessible, frequent, and clean would lead to increases in passenger satisfaction. In the context of Northern Italy, Eboli and Mazzulla (2014) analyzed the drivers of satisfaction among passengers of regional rail lines and found that making improvements to service factors such as reliability, frequency, and cleanliness would likely increase overall satisfaction. Similarly, in a study based on a large scale survey as well as passengers' statements about their satisfaction with the quality of bus service in Granada, Spain, de Oña, de Oña, Eboli, and Mazzulla (2013), found that service performance was the main factor explaining satisfaction with overall service quality and that comfort while traveling, and the behavior of the staff had less of an influence.

The main benefit of the majority of these transit satisfaction studies is that they identify which service attributes should be the focus of service or even policy changes for specific transit

agencies or regions. However, while most transit satisfaction research focuses on identifying the service attributes that influence overall satisfaction, these studies often do not to reveal how users' personal opinions, involvement, or image of transit influence their reported satisfaction. Additionally, users' image of transit has typically not been used to assess intended future usage. However, in recent years, researchers have become increasingly interested in understanding how to determine transit users' intended future usage in order to be able to determine the factors that lead to increased loyalty. Stemming from the satisfaction literature, research on intended future usage has started to assess whether satisfaction with specific service factors influences loyalty (Carreira et al., 2014; Lai & Chen, 2011; Minser & Webb, 2010; van Lierop & El-Geneidy, 2016; Zhao et al., 2014). Furthermore, several studies have also found that intended future usage is an important element of loyalty, and a recent study by Zhao et al. (2014) suggested that transit loyalty is not only related to a person's continuous behaviour to purchase or use a product or service, but also has to do with a transit user's attitudes and emotions towards the service on an ongoing basis.

Transit Image

In recent years, researchers have begun to explore how users' views and opinions about public transit influence their satisfaction and loyalty. For example, Minser and Webb (2010) revealed that users who have a positive image of public transit tend to be more satisfied. Furthermore, other researchers have found that having a positive image of public transit also strongly influences passenger loyalty (Lai & Chen, 2011; Minser & Webb, 2010; Şimşekoğlu, Nordfjærn, & Rundmo, 2015; Tri-County Metropolitan Transportation District of Portland Oregon, 1995; Zhao et al., 2014). Therefore, passengers' positive attitudes towards public transit can be used as a proxy for passengers' intentions to continue using the service in the future, and also for their loyalty (Lai & Chen, 2011; Şimşekoğlu et al., 2015; Zhao et al., 2014). With this in mind, Lai and Chen (2011) suggested that it is important for public transit agencies to focus on developing strategies that aim to motivate passengers to strongly identify with public transit. Outside the realm of public transit research, the association between customers' positive emotions with products or services has also been observed, and researchers have suggested that loyalty can be positively influenced through the development of schemes that influence potential customers to have an emotional association with a product or service (Mahajan & Wind, 2002; Zaichkowsky, 1994). For example, in the automobile industry, promotional strategies often play into the needs and desires of potential customers (Sheller, 2004). While such strategies are not often used to promote public transit, there exists a potential for transportation agencies to increase ridership through such measures as users who are emotionally connected to the mode are more likely to be loyal (Lai & Chen, 2011).

Although public transit agencies and transportation researchers are often interested in better understanding and increasing transit users' satisfaction and loyalty, questions regarding passengers' perception of, and emotions related to, public transit are rarely included in customer satisfaction questionnaires. Furthermore, customer satisfaction questionnaires seldom ask respondents whether using public transit constitutes a part of their personal identity. In addition, researchers working in this area have not agreed on how to define users' image of public transit, nor have they settled on whether the term "image," "involvement," "attitude," or a different term completely best describes how a passenger views public transit and how engaged he or she is with the service. Nevertheless, even though there is no standardized term, researchers who have assessed passengers' image or involvement with public transit have found that these concepts are important to increase loyalty among public transit users (Lai & Chen, 2011; Minser & Webb, 2010; Şimşekoğlu et al., 2015; Zhao et al., 2014), and have suggested that transit agencies should aim to increase ridership retention by increases passengers' overall image of the mode (Tri-County

Metropolitan Transportation District of Portland Oregon, 1995). Yet, one aspect that remains unclear is whether satisfaction creates a strong image, or vice versa. However, the majority of the research suggests that image, perception, and attitudes influence satisfaction and loyalty (Minser & Webb, 2010; Şimşekoğlu et al., 2015; Zhao et al., 2014), and few studies suggest that satisfaction influences involvement (Lai & Chen, 2011). Therefore, because attitudes have been found to strongly influence future mode use (Şimşekoğlu et al., 2015), and satisfaction and future use are two important components of loyalty, this paper focuses specifically on understanding the effect that a users' image of transit has on these two elements of loyalty.

DATA AND METHODS

Context

To assess whether having a positive image of public transit influences users' overall satisfaction and intended future use, this study analyzes customer satisfaction surveys that were administered along route 121 Sauvé, a major east-west route along Côte-Vertu Boulevard and Sauvé Street, in Montreal, Canada. This bus route is operated by Montreal's primary bus operator, the Société de transport de Montréal (STM). It is a non-express, regular bus service, with stops spaced every few city blocks, and an average one-way trip duration of 50.5 minutes. Furthermore, the route has a high frequency of service, and is one of the busiest in the STM's network, with approximately 34,000 individuals using it on weekdays. The route is approximately 11 kilometers long, and it connects with two metro stations (Côte-Vertu and Sauvé) and two commuter rail stations (Montpellier and Sauvé).

The route was selected for the purposes of this study due to its high usage, connection to the metro network, and the fact that it passes through neighbourhoods with varied ethnic populations. For example, according to the Canadian Census, at the west of the route, visible minorities make up approximately 40% of residents, with the ethnic composition being primarily Arab, Chinese, South Asian, and Black. The census tracts on the eastern side of the route have a slightly lower presence of visual minorities at approximately 35%, with the majority being Black, Arab, and Latin American. The neighbourhood at the east of the route also has a large and active Italian community (Statistics Canada, 2011). Furthermore, the route passes along a busy commercial area in the west, and a calmer, greener, and more residential section to the east. Figure 1 shows the Route 121 Sauvé, and demonstrates where it connects with the orange line of the metro.
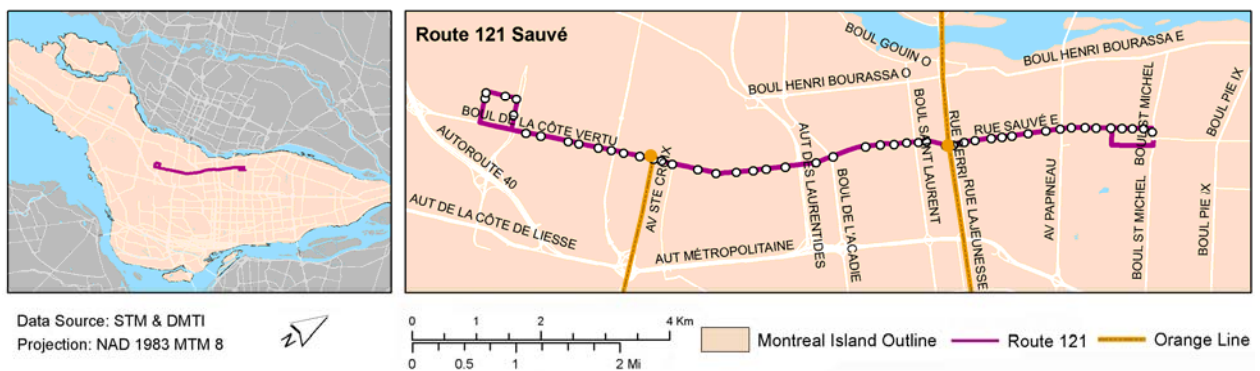

Fig. 1: Context map of Route 121 Sauvé

Data collection

The in-person customer satisfaction surveys were administered along route 121 between 6:30 AM and 6:30 PM on a Tuesday, Wednesday, and Thursday early in the summer of 2016. Weather conditions were warm and dry and no events impeded ordinary operations of the bus route. Data collection times were chosen in order to collect an equal distribution of data between peak and off-peak hours. The survey was one page long, was available in both English and French, and took three minutes to complete on average. Surveyors worked in groups of two or three and data collection occurred at both east and westbound stops. In order to avoid respondent selection bias, the surveys were administered in the order in which passengers arrived at the bus stop. If passengers agreed to participate, the surveyors would provide participants with a paper version of the survey and a pen, if passengers were not willing, then surveyors moved on to the next person in line.

Although surveys were administered along the entire bus route, bus stops with high passenger activity were prioritized by surveyors in order to obtain a representative sample size. This resulted in an over sampling of passengers boarding at stops that intersected with metro stations. In addition, due to the high frequency nature of the route, many respondents were not able to complete the survey due to the arrival of the bus, as has similarly been reported in several other bus surveys (Diab & El-Geneidy, 2014; Hess, Brown, & Shoup, 2004; Mishalani, McCord, & Wirtz, 2006; Psarros, Kepaptsoglou, & Karlaftis, 2011).

The survey

The survey was composed of thirteen different questions regarding their satisfaction with route 121, characteristics of their trip, and personal characteristics. Table 1 shows a summary of the results of several of these questions.

Because this analysis focuses on better understanding the drivers of satisfaction and loyalty, we were particularly interested in the questions that focused on these issues. More specifically, the question assessing customer satisfaction used a Likert scale from 1 ('very unsatisfied') to 5 ('very satisfied') to assess passengers overall satisfaction with Route 121. In addition, we asked passengers whether in a year from now, they plan to use transit more, less, or at the same frequency, and—on a scale on a scale of 1 ('disagree') to 5 ('agree')—whether they have a positive image of public transit and whether they believe that public transit is an important public service.

In total, 642 surveys were administered of which 192 were incomplete, leaving 450 fully completed surveys. Additional surveys were omitted if the survey respondent indicated they were under the age of 16 or if answers were illogical given the questions asked. In total, 395 surveys are included in the analysis, and this number exceeds the 380 surveys necessary for a representative sample, based on the daily passenger activity aboard the route with a confidence interval of +/-5 at the 95% confidence level.

Table 1: Summary statistics

SUMMARY STATISTICS			
Gender:		**For how long have you been using this route?**	
Female	58%	Less than a year	26%

Male	42%	1-5 years	45%
		More than 5 years	29%
Age categories:		**On a scale from 1-5, indicate how satisfied you currently are with the 121:**	
16-35 years old	56%	Average overall satisfaction	3.93
36-55 years old	33%	Average satisfaction with on-time arrival	3.74
56-76 years old	11%	Average satisfaction with travel time	3.88
Do you have access to a car?		**What is the purpose of this trip?**	
Car access: Yes	44%	Going to work	68%
		Going to school	29%
Direction the passenger was travelling:		Going for shopping	13%
East	48%		
		In one year from now, do you plan to be using public transit:	
		Less than you do now	14%
Language:		The same	76%
English	36%	More than you do now	10%
French	64%		

RESULTS

Figure 2 demonstrates that many of the surveyed bus users reported that they were satisfied or very satisfied with the service overall. In addition, the figure shows that 14% reported that they plan to use the service less than they currently use it. Furthermore, the lower part of figure 2 demonstrates that satisfaction is not always associated with loyalty; however, among users of all levels of satisfaction, most intend to continue using the service the same amount as they currently do. Additionally, in nearly every category of satisfaction there are users who both want to use transit more and less than they currently do. However, the percentage of users who intend to use transit less than they currently do increases as overall satisfaction decreases.
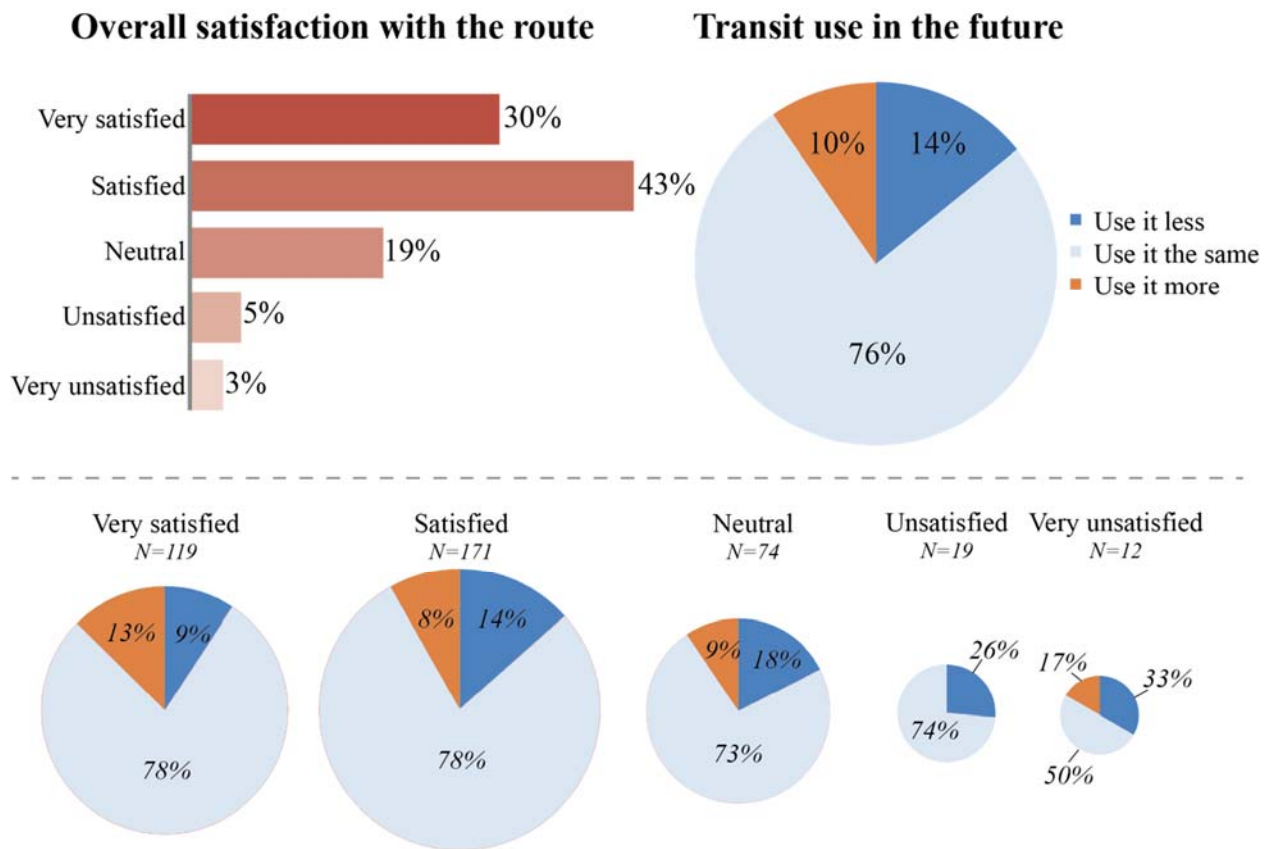

Fig. 2: Satisfaction and future usage

Figure 3 illustrates users' agreement with the statements "I have a positive image of transit", and "public transit is an important public service". While nearly all users "agree" or "agree very much" that transit is an important service, the results relating to having a positive image of transit are more mixed. The figure reveals that there is space for improvement when it comes to promoting users to have a positive image of public transit. On the other hand, the figure also shows that, although variation does exist, the majority of the sample already agrees that transit is an important public service.

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I have a positive image of public transit   Public transit is an important public service

■ Strongly disagree   ■ Disagree   ■ Neutral   ■ Agree   ■ Strongly agree
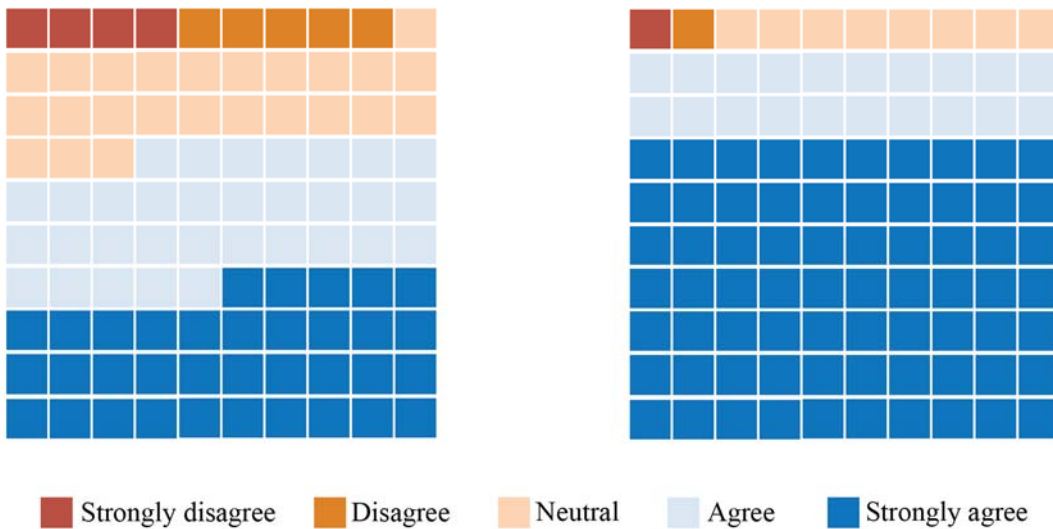
Fig. 3: Image of public transit

While the survey questions illustrated in figure 2 are used as the dependent variables for the logistic models discussed in the following section of the manuscript, those in figure 3 are used as independent, predictor variables. Accordingly, the following section presents statistical models based on two key components of loyalty: overall satisfaction, and the intention to continue using the service in the future. Overall satisfaction and users' intentions to continue using transit in the future are two aspects that previous researchers have linked to loyalty (Transportation Research Board, 1999; van Lierop & El-Geneidy, 2016). Therefore, rather than assessing the direction of influence between variables, this research seeks to assess the effect of users' image of transit on satisfaction and future use, and not the reverse.

Model selection

Table 2 demonstrates the results of the first logistic model used to understand the effect of having a positive image on overall satisfaction while controlling for age. In addition, table 3 shows the results of the logistic model used to better understand the effects of having a positive image on willingness to continue using transit in the future while controlling for previous usage. In model 1 the dependent variable determines whether a user is satisfied with the bus service or not, with 'satisfied' and 'very satisfied' users coded as 1, and 'neutral', 'unsatisfied', and 'very unsatisfied' users having been coded as 0. In model 2 the dependent variable reflects users' intentions to continue using transit. Users who stated that they plan to continue using the service 'the same' or 'more' than they currently do were coded as 1, and those who stated that they plan to use it 'less; were coded as 0. Users' satisfaction and intentions to continue using the service are analysed as they are two important components of user loyalty. The results are presented in tables 2 and 3 with the odds ratios and 95% confidence intervals for both models, and include only significant variables.

We used R statistical program to generate the models and ran exhaustive model selection processes in order to understand which variables should be included in each of the models. Model

selection was based on AIC and BIC scores, and in order to assess the predictive ability of the models we calculated error rates based on maximizing specificity and sensitivity on the receiver operating characteristics (ROC) curves for each model as a Goodness-of-Fit (GoF) statistic. Finally, as an additional GoF statistic we measured the area under the curve (AUC), which in both cases was greater than .5, meaning that the models are useful for assessing overall satisfaction and future usage.

Table 2: Model 1 – Overall satisfaction

OVERALL SATISFACTION: Level of satisfaction with the bus service	MODEL 1		
	OR	2.5 %	97.5 %
(Intercept)	6.689 ***	2.037	23.888
Personal Characteristics			
Age group: 16-35	0.429 *	0.157	1.027
Age group: 36-55	0.374 **	0.134	0.926
Age group: 56-76	NA	NA	NA
I have a positive image of public transit:			
Low agreement (1-2/5)	0.138 ***	0.057	0.325
Medium agreement (3-4/5)	0.461 ***	0.255	0.810
High agreement (5/5)	NA	NA	NA
Public transit is an important public service:			
Agreement (4-5/5)	2.003 *	0.969	4.125
Signif. codes: 0.001 '***' 0.01 '**' 0.05 '*' --- = Not in model, NA = Reference Category †*Thresholds for error rates are based on maximizing sensitivity and specificity as indicated by ROC curves.*	*N=395* AIC: 433 BIC: 457 Error rate: 0.058† AUC: 0.673		

The purpose of model 1 was to assess whether having a positive image of public transit has an effect on users' overall satisfaction. The model reveals that having a positive image increases users' odds of being satisfied. More specifically, when controlling for other variables, the odds of being satisfied are 86% lower for users who do not have a positive image of transportation compared to those with a high agreement. The odds increase for those with a medium agreement, and are 54% lower compared to those with a high agreement. Furthermore, the odds for users who agree that public transit is an important public service is two times higher compared to users who do not agree with this statement. With regard to age, the odds of being satisfied are 63% lower for middle aged users (36-55) and 57% lower for young users (16-35) compared to older users.

Table 3: Model 2: - Future usage

FUTURE USAGE: Intention to continue to use	MODEL 2		
	OR	2.5 %	97.5 %
(Intercept)	11.409***	2.620	56.752
Personal Characteristics			
Have used transit for less than a year	0.432 *	0.181	0.991
Have used transit for 1-5 years	0.443 **	0.196	0.937
Have used transit for more than 5 years	NA	NA	NA
I have a positive image of public transit:			
Low agreement (1-2/5)	0.152 ***	0.048	0.464
Medium agreement (3-4/5)	0.266 ***	0.105	0.584
High agreement (5/5)	NA	NA	NA
Satisfaction			
Overall level of satisfaction with public transit (1-5)	1.325 *	0.976	1.789
Signif. codes: 0.001 '***' 0.01 '**' 0.05 '*' --- = Not in model, NA = Reference Category †*Thresholds for error rates are based on maximizing sensitivity and specificity as indicated by ROC curves.*	*N=395* AIC: 308 BIC: 332 Error rate: 0.035† AUC: 0.843		

Model 2 assesses whether having a positive image of public transit has an effect on users' intention to continue using transit in the future. Similar to model 1, the results of model 2 reveal that having a positive image of transit increases users' odds of continuing to use transit in the future. When controlling for other variables, the odds of intending to use transit in the future are 85% lower for users who do not have a positive image of transportation compared to those with a high agreement. The odds increase for those with a medium agreement, and are 73% lower compared to those with a high agreement. Furthermore, for every increase in satisfaction on a scale from 1-5 the odds of intending to use transit in the future increase by 33%. Satisfaction is included in the model to control for the findings of previous studies that have demonstrated that satisfaction influences behavioural intentions (Lai & Chen, 2011; van Lierop & El-Geneidy, 2016). Correlation between the satisfaction and image variables were tested (0.35), and collinearity was not present. On the other hand, the variable measuring users' agreement with public transit being an important public service is not included as we had no theoretical basis for including it. Furthermore, as a control variable, model 2 includes the amount of time that a transit user has been taking transit and found that the longer that a user has been taking transit, the greater their odds of continuing to use transit in the future. Compared to users who have been taking transit for more than five years, the odds of intending to use transit in the future are 57% lower for users who have been using transit for less than a year and 56% lower for users who have been using it for 1-5 years. We used the amount of time that an individual had been taking transit rather than a user's age, as these two variables are strongly related, and previous research has found that individuals' previous behaviours can be used to predict future behaviour (Aarts, Verplanken, & Knippenberg, 1998). The results of model 2 confirm that individuals who have been using transit for more than five years have a higher odds of intending to continue using the service.

DISCUSSION

Defining loyalty

Overall, models 1 and 2 have confirmed that as individuals' image of public transit improves, the odds of being satisfied and of intending to use transit in the future increase. This means that having a positive image of transit influences two important components of loyalty: satisfaction and intended future usage.

In the introduction of this manuscript we discussed that researchers have adopted different definitions of loyalty, explained that in transportation research the relationship between customer satisfaction and loyalty can be complex (Merkert & Pearson, 2015), and that therefore defining the characteristics of a loyal transit user is not a straightforward task. However, many researchers agree that two of the most commonly used components of loyalty are satisfaction and future usage (Allen & Allen, 2004; Transportation Research Board, 1999; van Lierop & El-Geneidy, 2016) – the dependent variables used in models 1 and 2. Furthermore, while several authors include users' intention to continue taking public transit as one of the elements in their loyalty construct (Lai & Chen, 2011; Minser & Webb, 2010; Zhao et al., 2014), it remains rare to define loyalty by including users' attitudes and image of transit in the conceptualization of loyalty.

However, the results of this study have revealed that users' image of public transit strongly impacts their intentions to continue using transit. These results are consistent with previous research (Lai & Chen, 2011; Minser & Webb, 2010; Zhao et al., 2014), and accordingly, based on the review of the literature and results of the analysis presented in this study, we suggest that loyalty constructs in transportation research should be composed of three essential elements: (1) users' image of public transit, (2) their overall satisfaction with a particular service, and (3), passengers' intentions to continue using the service in the future. Figure 4 demonstrates the relationships between these components of satisfaction.

While past research has demonstrated that satisfaction influences future usage (Carreira et al., 2014; Lai & Chen, 2011; van Lierop & El-Geneidy, 2016), and the present study has revealed relationships between image and satisfaction as well as image and future usage, these relationships may not be linear. Future research should therefore assess the linearity and cyclicality of the relationships presented in figure 4.
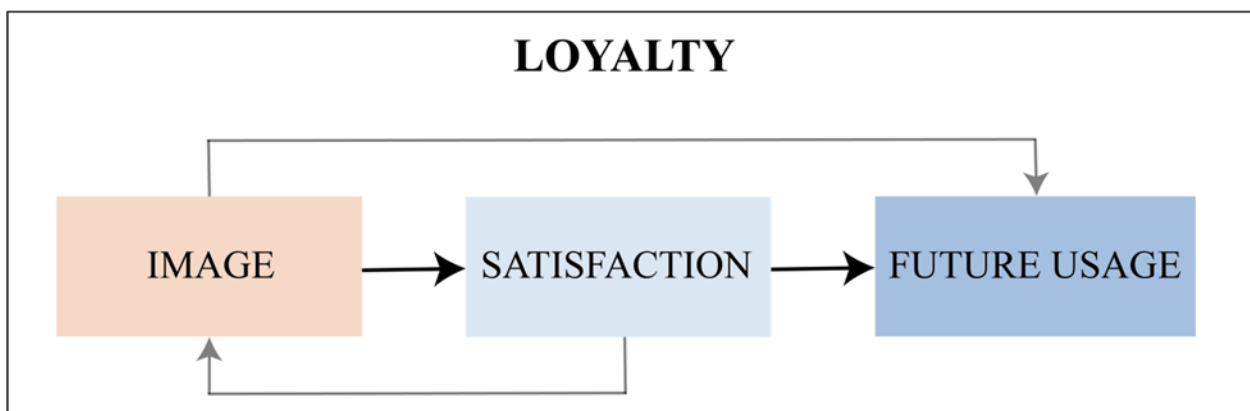

Fig. 4: The key to loyal customers

Improving the image of public transit

Improving the image of public transit is an essential and difficult task that many cities and public transit agencies face today. There is often a negative connotation associated with the use of public transit that is not present with other modes. For example, in a qualitative study of attitudes towards private cars and public transportation, Beirão and Cabral (2007) found that several barriers towards taking public transit included "*[n]egative feeling towards public transport*" and that users "*[d]o not know what to expect*." These negative sentiments towards the mode demonstrate that it is important for cities and transit agencies to work together to promote public transit and educate users about what should be expected when using a transit service. Changing the opinions of both transit users and non-users towards transit is essential for the de-stigmatization of transit use that is present in many regions. In a study focusing on public transit and stigma, Schweitzer (2014) found that on social media, there are often more negative comments being made compared to other public services. Accordingly, as a strategy to overcome the negative stigmas associated with public transit usage, Schweitzer (2014) suggests that transit agencies take an active part in changing these negative perceptions by using social media to respond directly to the questions, comments, and concerns of social media users. Interestingly, the study found that transit agencies who did engage in such practices received "*more positive statements about all aspects of services and fewer slurs directed at patrons, independent of actual service quality*." The results of Schweitzer's (2014) study reveal that it is possible for transit agencies to actively participate in changing the dialogue associated with users' (preconceived) perceptions of public transit. This is important for both transit agencies and cities to consider, given that the findings of the present study demonstrate that there is a strong relationship between users' image of transportation and their satisfaction and intention to continue to use it in the future.

LIMITATIONS AND FUTURE RESEARCH

While the present study included only responses from transit users, future research should focus on non-users, especially car drivers. Furthermore, future studies should be conducted in regions that are more auto-centric than Montreal, Canada, such as the in the United States of America where there is often a stigma associated with transit usage (Schweitzer, 2014). Furthermore, it is also essential for future research to understand what are the factors influencing users to have a positive image of public transit and the relationships between transit users image, satisfaction, and future usage should be further explored as they may not be linear. In addition, the data used in this study is a result of collecting primary data specifically for the purpose of this study. However, questions about transit users' image of public transit are usually not included in public agencies' customer satisfaction surveys. In the future, transit agencies would benefit from including image questions in their large-scale customer satisfaction surveys – especially if individuals' image about transit can be compared to their image of other modes. The results of this study add to the existing literature on transit user loyalty by investigating the influence of the image that users have of public transit. The findings are also useful for researchers and transit agencies aiming to better understand and increase loyalty among current and future public transit users.

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