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Antecedents of Passenger Satisfaction Towards Mass Rapid Transit (MRT) in Malaysia

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Abstract

The purpose of this study is to examine the relationship between availability, accessibility, information, timeliness, comfort and satisfaction for Mass Rapid Transit (MRT) passengers in Malaysia. Using a quantitative research design, the respondents were selected using convenience sampling in Klang Valley, Malaysia. Data were analysed using Statistical Package of Social Science (SPSS). Based on the result of Pearson correlation analysis, this study found that availability, accessibility, information, timeliness and comfort have a positive and significant influence on passenger satisfaction towards MRT service in Malaysia. The findings of this study are expected to aid the operators of MRT in Malaysian in better understanding the elements of service quality that influence passenger satisfaction towards the service.

Keywords: Availability, Accessibility, Information, Timeliness, Comfort.

Introduction

In any business, customer satisfaction has long been regarded as an important issue. It is because customer satisfaction relates to customer commitment or engagement towards the business in the future. According to the past studies, satisfied customers will loyal to the organization (Harazneh et al., 2020), recommend and communicate positive word-of-mouth about the organization and its offerings to others (Zeng et al., 2009; Yoo et al., 2015). Alternatively, dissatisfied customers tend to complaints, give negative comments or feedbacks, switch to competing firms as well as less purchase from the firm (Zeithaml et al., 1996). Due to this reason, many research have been conducted to identify the antecedents of customer satisfaction or dissatisfaction.

Based on the review of past studies, delivering high quality or superior service quality is one of the important determinants of customer satisfaction (i.e Hilaludin & Cheng, 2014; Widiyanto et al., 2021; Othman & Harun, 2021; Supriyanto et al., 2021). In the context of public transportation, study by Tyrinopoulos and Antoniou (2008) and Oña et al., (2016a) claimed that, passenger perceptions of transit performance are reflected in the quality of service provide by transit operators. In other words, passengers would perceive public service operators have deliver high quality of service when they receive the service in a timely manner, pleasant treatment and proper way of driving from the driver, proper space in or

design of the vehicles as well as timely and sufficient information from the service operators. Perceive high service quality would then lead to their satisfaction and favourable behavioural intentions.

To date, studies on service quality and customer satisfaction have been well established in various settings. However, the outcomes of studies aimed at identifying quality service indicators that can influence passenger satisfaction with public transportation, particularly in the context of MRT service in Malaysia, are still limited. The majority of the studies related to transit service were carried out in other countries, such as Spain (Oña et al., 2016 a,b), Hernandez et al., 2016), Algeria (Machado-Leon et al., 2017) and India (Bose & Pandit, 2020). Based on review of literatures, past studies on the rail-based transport system in Malaysia also has been undertaken beyond the scope of this study. Kwan et al (2017), for example, studied the impact of MRT on the environment and health. Kwan et al (2016) investigate the impact of vehicle trip characteristics on the intention of private motor vehicle drivers to switch to rail transportation. Majid et al (2021) investigate the antecedents of ridership preference for Malaysia's Light Rail Transit (LRT) service. As a result of the discussions and the fact that Malaysia still has a low rate of public transportation usage (Almselati et al., 2011), the general objective of this study is to explore the antecedents of passenger satisfaction towards MRT service in Malaysia. Specifically, the objectives of this study were to;

- determine what factors affect passenger satisfaction with MRT service.
- assess the relationship between availability, accessibility, information, timeliness and comfort; and MRT passenger satisfaction.

Literature Review

Satisfaction

Customer satisfaction is defined as “a person's feelings of pleasure or disappointment that results from comparing a product's perceived performance or outcome with his/her expectations” (Kotler & Keller, 2009, p. 789). Customer satisfaction is one of the primary outcomes of marketing initiatives that have addressed various stages of customer purchasing behaviour. According to Albayrak and Caber (2015), researchers and academicians continue to look into the causes and effects of customer satisfaction in today's business. As mentioned above, satisfied or happy customers were found to boost positive behaviour, unsatisfied or unhappy customers could encourage unfavourable behaviour. In the case of public transportation, Oña and Oña (2014) discovered that satisfied consumers can help transport operators earn trust and respect, nevertheless if satisfaction is poor, transport operators must enhance their services to win customer trust and loyalty.

Antecedents of Customer's Satisfaction

Based on previous studies, service quality is one of the important elements that can influence customer satisfaction. According to Gronross (1984), service quality denotes the outcome of an evaluation process where the consumer compares his/her expectations with the service he/she receives. Service that meets expectation results in his/her satisfaction towards the service or organization.

To date, there are many variables or dimensions that shape service quality. However, in the context of this study, quality of MRT service were assessed based on five main variables namely, availability, accessibility, information, timeliness and comfort. *Availability* denotes the ability of a transportation system to offer services when they are needed (Elms, 1997).

The availability of service in this study is explained by factors such as frequency and operating hours of MRT service. *Accessibility* refers to one's physical ability or ease of access to reach a station or stop (Cervero and Duncan, 2002), to buy a ticket, access to a platform, on train as well as accessibility for aged and disabled people (Oña et al., 2016a). According to Redman et al (2013), accessibility is important in passenger evaluation of public transport quality. Meanwhile, *Information* relates to the provision of information to passengers (Redman et al, 2013). For example, information about routes and interchange, price ticket and operating hours of the service. *Timeliness* on the other hand can be defined as punctuality and speed of the service. Specifically, Widiyanto et al (2021) specifies timeliness as operator's capacity to offer transportation services on time according to a defined schedule. Lastly, *comfort* refers to comfort-related issue such as passenger accessibility to seat in vehicles and on platform, cleanliness of stations and vehicles, noise level, driver handling, lighting and air conditioning in vehicles and on platform (Oña et al., 2016a; Kim & Bachman, 2019).

In a different study's context, the influence of availability, accessibility, information, timeliness and comfort on satisfaction have been empirically verified by previous studies. For example, in Joewono and Kubota (2007) study, they used nine factors with 54 attributes to measure service quality (availability, accessibility, reliability, information, customer service, comfort, safety, fare, and environmental impact) of paratransit system in state of Indonesia, Bandung. The findings showed that service quality has positive direct relationship with satisfaction. Similarly, Widiyanto et al (2021) also found service quality and timeliness has a positive and significant effect on satisfaction. Based on the above discussion, the following hypotheses were proposed:

- H1: Availability has a positive influence on passenger satisfaction towards MRT service in Malaysia.
- H2: Accessibility has a positive influence on passenger satisfaction towards MRT service in Malaysia.
- H3: Information has a positive influence on passenger satisfaction towards MRT service in Malaysia.
- H4: Timeliness has a positive influence on passenger satisfaction towards MRT service in Malaysia.
- H5: Comfort has a positive influence on passenger satisfaction towards MRT service in Malaysia.

Methodology

The target population of this study consists of passengers of MRT in Klang Valley. This study adopted a convenience sampling technique to collect the data via a self-administered questionnaire. This study received 347 useable questionnaires, resulting in an 86.75 percent net response rate.

The items for the measurement used in this study were adapted based on the review of past literature. Specifically, number of items to represent independent variables are as follow; *availability* (4 items), *accessibility* (6 items), *information* (4 items), *timeliness* (3 items), and *comfort* (8 items). These items were measured using 6-point Likert-scale ranging from "strongly dissatisfied" (1) to "strongly satisfied" (6). The dependent variable, satisfaction, was measured with three items borrowed from past studies. These items also were measured using 6-point Likert-scale ranging from "strongly disagree" (1) to "strongly agree" (6). Based

on the result of reliability test, the reported Cronbach's alpha for all variables ranges from .871 to .9752, which indicate that all the items used are reliable and stable (Nunnally, 1978). Data were analyzed using Statistical Package for Social Science (SPSS). The background of the respondents was summarised using descriptive analysis. Meanwhile, to determine the association between independent variables and dependent variable, the Pearson correlation method is applied.

Results and Discussion

Demographic Profile of Respondents

Out of 380 respondents, 333 were usable for further analysis. Another 47 questionnaires were found to be incomplete in responses and outliers, therefore excluded from this survey.

Majority of the respondents were female at 263 (79%) and Malaysian (318, 95.5%). Most of the respondents are single at 177 (53.1%) and more than half of them aged between 18-35 years old (235, 70.6%). Besides, majority of the respondents are working in the private sectors (108, 324%) followed by government sectors (98, 29.4%).

Descriptive Statistics of the Variables

Table 2 presented the descriptive statistics of the variables. Based on the Table, Satisfaction has the highest mean score (5.03) with a standard deviation of 0.927. The second highest was Comfort with an average score 4.91 and standard deviation of 0.969 and followed by Timeliness (4.88) and Accessibility (4.88) with a standard deviation of 1.224 and 0.991 respectively. The second lowest was Availability (4.82) with a standard deviation of 1.199 and the lowest mean score value was Information (4.81) with a standard deviation of 1.145.

Table 1: Descriptive Statistics (N=333)

Variable	Mean Score	Standard Deviation
Availability	4.82	1.199
Accessibility	4.88	0.991
Information	4.81	1.145
Timeliness	4.88	1.224
Comfort	4.91	0.969
Satisfaction	5.03	0.927

Note: Availability (AVA), Accessibility (ACC), Information (INF), Timeliness (TIM), Comfort (COM), Satisfaction (S)

Relationship between Variables

The results of the correlation analysis were summarized in Table 2. Based on the table, the correlation value of ($r=0.824$; $p=0.000$) shows that there is a strong positive relationship between availability with the passenger satisfaction towards MRT. Hence, H1 is accepted. Similarly, the finding also show a significant and positive relationship between accessibility and passenger satisfaction towards MRT ($r=0.836$; $p=0.000$). This result suggests that the greater the accessibility of MRT's services, the higher the level of passenger satisfaction. Thus, H2 is also accepted. The table also showed that there was a positive and significant relationship between information and passenger satisfaction towards MRT ($r=0.733$; $p=0.000$). The positive sign of the correlation results disclosed that the more the information provided by the service provider, the higher the level of passenger satisfaction towards MRT service. Therefore, the third hypothesis, H3 was accepted. In addition, the findings also found

the relationship between timeliness, comfort and satisfaction were positive and significant at ($r=0.712$; $p=0.000$) and (0.857 ; $p=0.000$) respectively. Consequently, the remaining hypotheses, H4 and H5 were also accepted.

Table 2: Correlation Analysis's Results

Hypothesis	Statement of Hypothesis	Pearson correlation (r-value)	Significant (p-value)	Decision
H1: AVA → S	Availability has a positive relationship with passenger satisfaction	0.824	0.000	Supported
H2: ACC → S	Accessibility has a positive relationship with passenger satisfaction	0.836	0.000	Supported
H3: INF → S	Information has a positive relationship with passenger satisfaction	0.733	0.000	Supported
H4: TIM → S	Timeliness has a positive relationship with passenger satisfaction	0.712	0.000	Supported
H5: COM → S	Comfort has a positive relationship with passenger satisfaction	0.857	0.000	Supported

Discussion and Conclusion

The goal of this study was to look at the factors that determine passenger satisfaction with MRT service quality in Malaysia. Specifically, this study examined the influence of availability, accessibility, information, timeliness and comfort on passenger satisfaction towards MRT service in Malaysia. Based on the Pearson correlation analysis, the results showed that passenger satisfaction toward MRT service are significantly influenced by comfort followed by accessibility, availability, information and timeliness of the service. This finding was supported by the prior study which specified that service quality characterized by comfort, accessibility, timeliness and availability has an effect on satisfaction (Oña et al., 2016). Furthermore, this finding also similar to previous studies. For example, Firmansyah (2020) and Widiyanto et al (2021) found that timeliness is an antecedent of customer satisfaction. The relationship between information quality and satisfaction in line with (Delarosa and Susilo, 2013; Hilaludin and Cheng, 2014). Kim and Bachman (2019) on the other hand found clean and comfortable environment has a significant influence on customer satisfaction.

Research Implications

Theoretically, the current study adds to our knowledge of the main factors that influence passenger satisfaction with MRT service in Malaysia. Service availability, accessibility, information, punctuality, and comfort are all essential indicators of quality service that influence MRT passenger satisfaction or happiness. In other words, this study demonstrates that these factors have a positive and significant link with customer satisfaction. As a result of the findings, this current study may add to and reinforce the findings of previous studies that show that availability, accessibility, information, timeliness, and comfort are all antecedents of consumer satisfaction.

From a managerial standpoint, this outcome is particularly relevant for MRT service operators in developing effective methods to improve passenger satisfaction. To increase passenger satisfaction, for example, it is necessary to provide a large number of trains per day, easy access to stations and platforms from the road or for people with limited mobility, updated and reliable information about ticket prices and operating hours, adequate waiting time on the platform, and comfortable lighting and cleanliness of the trains and stations. Customers who are satisfied not only assist the MRT operator generate positive passenger behaviour like as loyalty, positive word-of-mouth, and repeat usage, but they also help the government lessen people's reliance on private transportation. As a result, it has the potential to alleviate traffic congestion and pollution in the city.

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