

## Customer Satisfaction on Public Transportation in Penang, Malaysia

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### Abstract

This paper reports the customers' satisfaction about public transportation service in Penang, Malaysia. In this respect, some of the factors namely reliability, accessibility, safety and security are used to measure the customers' satisfaction on bus service Rapid Penang, Malaysia. A survey was conducted where questionnaires were distributed to 500 bus passengers. The results of the study indicates that reliability, accessibility, safety and security of bus service are positively significant to customer satisfaction. The contribution of the study creates better understanding of the service provider the factors that able increase customers' satisfaction and base on the knowledge they able to improve their services and gain the customers' trust.

### Keywords

Customer satisfaction, Reliability, Accessibility, Safety and security, Public transportation, Bus service.

### Introduction

The passenger transportation industry in many countries around the world has been upgraded to bring convince to the customers to commute from one place to another place. The popularity of the public transports among people are still top due to the reasons like afford in terms of fares, easy access. According to The Star. (2016), Malaysia has been ranked 4<sup>th</sup> in emerging market logistics out of the world's 45 leading emerging markets shows the capacities for Malaysia's drive to develop world-class infrastructure and transport network. Malaysia aim to be "The preferred logistics Gateway for Asia" in 2020 by strengthens the transport infrastructure by applying five strategic shifts and 19 action items.

Penang's population is growing, and the need for transportation is growing as well. As the cost of living also increase, people should plan to avoid the traffic congestion by shifting to public transportation during the peak hours. This research suggested some recommendations for solving the traffic congestion problem and increasing travel efficiency by the application of hub concept

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of 'hub and spoke' transport system that requires rearranging and re-planning of the transport modes and links for public transport network at Penang Central. Moreover, by using the public transport, there are no need to wasting time and return cost of transportation. Present study aimed to examine the relationship between reliability, accessibility and safety and security that influence customer satisfaction of Rapid bus in Penang, Malaysia. Penang state was chosen for this study because it was one of the Malaysia's state that have highest population densities, country's most urbanized states and a thriving tourist destination. CNN, (2019) an internationally recognized media company, stated that Penang as one of the top tourist destinations to visit in 2019.

In field of marketing customer satisfaction is one of the important element (Singh and Kumar, 2014). According to Wilson et al., (2012) stated customer satisfaction as client's assessment of a product or service regarding whether that product or services has addressed the client's needs and desires. There are many factors influence customer's satisfaction for example product quality, perception of equity of fairness, price of product and services, individual factors (purchaser's inclination or passionate state), and influence of other customer as well. Customer satisfaction is the reaction of fulfilment from customer, it is judgments that product or service highlight or the product or service itself, gave (or is giving) a pleasurable level of utilization related satisfaction, including levels of under-or over satisfaction", Oliver, (2010). According to Noor et al., (2013) mentioned that for any services offered consumes' satisfaction is the main concern. As proposed by Chen, (2008), customer satisfaction is of paramount importance for customers to purchase products and services repeatedly and positive word of mouth to their friends, relatives, family, also provides a good recommendation for the company to grow good in the future. According to (Manani, et al., 2013), measuring customer satisfaction provides an indication on how an organization is performing or providing products or services. Therefore, customer satisfaction will be the measure of success to all the organizations including the public sectors as well.

### **Reliability**

Creswell, (2003) defines reliability based on the scores as to measure of behavior which resulted in the same outcome even though many times it's measured repeatedly, thus the stability and similarity of the measurement within a given time period. Stenbacka (2001) viewed reliability as purpose of explaining and generate the understanding base on the explanation mainly used for study in a research. Reliability is the extent to which tests are consistent steps whatever measures it and always implies a notion of repetition. The reliability of transportation as a public service to be reviewed from the aspect of social justice that is more convenient, safe and cheap in order to optimize the accessibility of society using the services. (Bates et al., 2001; Redman et al., 2013 and Li et al., 2010).

Kabir and Carlsson (2016) stated that reliability is the ability to provide the services promised to the right and reliable capability. The reliability of public transport is measured as the ability to perform the promised service dependably and accurately based on the indicators of speed of service and accuracy of transactions. In nutshell, Reliable service performance is a customer expectation and means that the service is accomplished on time, in the same manner, and without errors every time. Sudaryanto and Kartikasari (2007) stated that through the improvements of

infrastructure, vehicles and scheduling it can higher quality service by dedicated bus lanes which operate separate from all other traffic modes that allow buses to operate at a high level of reliability and more time efficient. The reliability is a term that can be defined differently, depending on the context or discipline (Cscanada.net, 2016). Li et al. (2010) researched the effect of 40 new 'Superoute' bus lines in the town of Tyne and Wear, UK and concluded that lower fares would make important contributions to improved customer perceptions of public transport quality.

Meyer (2002) in his study stated that the service performance of the transport system, user satisfaction is affecting the reliability of the public transport system, travel time, speed, safety, delay, travel expenses. Cavana et al. (2007) state that satisfaction is an indicator that affects the reliability, travel time, and easy, this indicator is strongly affects customer satisfaction in the course. In particular, transportation is reliable and convenient means of enhancing customer satisfaction. Currie and Wallis (2008) provided a synthesis of the evidence with respect to effective ways to grow urban bus markets including network structure and service level, bus priority measures, vehicles and stop infrastructure, travel time, fare and ticketing systems, passenger information and marketing, personal safety and security, and synergy effects of measures.

### **Accessibility**

Access refers to the extent to which a user or users can obtain goods or services at the time it is needed (BusinessDictionary.com, 2016). Access is defined as a measure of capacity to be achieved by location, or to achieve a different location (Rodrigue, 2016). Besides that, Accessibility also focused towards two options which are based on the location and the capability of human to travel (Litman, 2011). Islam et al. (2014) mention that accessibility is focus on accessing the tickets and bus stops. If the capability of accessibility has reduced, this will increase the traffic jam but can control negative environment such as noises from vehicles. Potential accessibility depends on the specific journey location to be reached by people and also impacted by few factors such as time, costing and money (Gwilliam, 2017).

Furthermore, according to Thompson and Schofield (2007) accessibility to reach consumer destination contribute much to their satisfaction where this shows the relationship within accessibility contribute towards customer satisfaction. In additional, the study also mention that factors such as time and safety will not give much impact to customers, once they capable to reach their destination. Besides that, Accessibility toward public transport is based on public convenience which gains by people around (Bramey and Wuppertal, 2008). Moreover, Accessibility consider as channel used by consumer in bank to access their fund information, bank facilities which offered by banks and to gain feedback. By this, consumer can achieve maximum satisfaction using accessibility as one of the channel (Muluka et al 2015).

According to Islam et al. (2014), have conducted research on measuring customers' satisfaction on bus transportation where this study shows the relationship between access towards customer satisfaction which based on bus transportation. The sample of this study is UUM students and convenience sampling has been used by distributed 300 questionnaires for data collection part. The research was based on HBR busses at Sintok, city since most of students from University Utara Malaysia (UUM) depend on this bus facility. Results of the study show that there is

significant and positive relationship between access and customer satisfaction has been determined.

### **Safety and Security**

According to Mercer and Williams (2014), security can be stated as physical and safety of emotion in a normal human being. Besides that, Security refers to the evaluation of emotion or can be consider as an individual feelings (Redman et al., 2013). This points has been supported by Savage, (2013) book statement where safety of vehicles is based on locks, air bags inside the vehicles and increase of crashworthiness. Generally, the term "security" is used to indicate the possibilities involved in a road accident, while the term "safety" refers to the possibility of becoming a victim of crime stated by Eboli and Mazzulla (2010). According to Lengyel (2012), the researcher have mention that based on Maslow theory the safety and security needs to be consider as one of the important indicator to achieve consumer satisfaction.

The past researchers study about product safety and customer satisfaction noted that improving the safety of products to enhance customer satisfaction and loyalty as well as much revenue to their business (Chalotra, 2012). The way to improve customer satisfaction is by having a good technique, good pricing and quality security with safety working environment (Smith, 2013). Moreover, National Safety Council (NSC, 2015) mentions that around thirty five thousand two hundred people die at U.S. due to traffic accidents and there are crash injuries also has been mention in 2013.

According to the study by Albonaemi and Hatami (2015) on airline sector, which is Zagros airline to view their customer satisfaction based on safety and security part. Distributed 380 questionnaires to their customers and regression analysis have been conducted in this study. The study shows that, safety and security has positive relationship with customer satisfaction.

### **Methodology**

Questionnaires were given out to investigate the relationship between Reliability, Accessibility, Safety and Security and Customer Satisfaction among Penang bus passengers. Population refers to the entire group of people, events, or things of interest that the researcher wishes to investigate and the sample also is a subset of the population (Sekaran and Bougie, 2009). Based on Krejcie and Morgan (1970) on the sample size determination procedure, at a 95% confidence level based on 5% error in margin, a sample size of 384 would be required for a population of 1.69 million people. However, the convenience sampling technique used because the sample frame does not exist which is non-profitability sampling technique have been implied in conducting this research. Overall, there are 500 questionnaires were distributed among all the bus passengers and gain back result from 405 of the respondents and used in conducting this research. The Likert scaling technique was used in the questionnaire. The questionnaire that has been used in the research is based on the previous researcher. There is some instrument will be used to measure the Reliability, Accessibility, Safety and Security and Customer Satisfaction. A five-point Likert-scale used and anchored by "strongly agree" (1) to "strongly disagree" (5) which was adopted from Geoff (2010). In section A will request

respondents to fill out the demographic information .Section B, C and D request respondents to rate or grading each item based on the 5 point scale. Besides that, section B will collect data which related to the Reliability, Accessibility and Safety and Security. In section C are used to collect information about Customer Satisfaction. The research model is as shown in Figure 1.

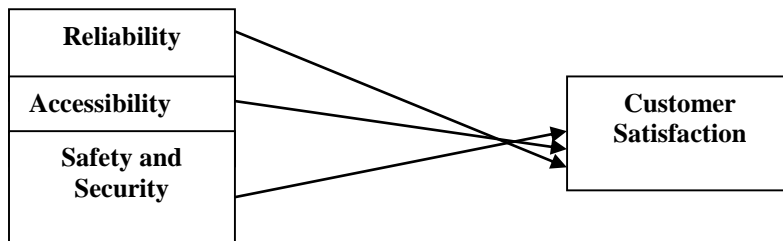


Figure 1: Conceptual Framework

### Results and Discussion

To conduct this study, the questionnaire have distributed around 500 self-administered questionnaire were distributed to bus passengers in Penang. From those questionnaires only 405 of valid questionnaire was gained among the respondents. The other questionnaires were returned as answered only neutral part which makes the researcher unable to calculate. Thus, with 405 returned and valid questionnaires out of 500 questionnaires is considered as the valid response rate around 81%. The descriptive statistic have stated as helpful to the researcher to explain about the frequency of the characteristics such as gender, age, race. Similarly, the demographics profile is including all this characteristics such as the gender, age and so on to be studied as mentioned by Kendrick as shown in table 1.1. From total of 405 respondents, 47.8%were male respondent while the balance respondents around 52.1%bfemale. Besides that, 42.9%bbetween 18-25. Most of the respondents’ income is about 1000-1500. The occupations which represent others are about 56.3%. The highest respondent rates are from Indian which consists of 44.3%.

**Table 1: Response Rate (%) for each Variables according to Scale**

Variables	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
<b>Tourism</b>	25.1	42.4	13.1	13.6	5.6
<b>Reliability</b>	16.9	39.6	19.4	16.1	7.7
<b>Accessibility</b>	22.7	42.2	17.2	13.5	4.2
<b>Safety and Security</b>	20	42.1	13	17.7	7

From the overall data collection, passengers’ satisfaction is 25.1% while 42.4% strongly agree and felt that the bus service performance strongly satisfied. Only 13.1% of the passengers were felt moderate with the bus service system but 13.6% passengers were dissatisfied of the system, followed by 5.6% who was strongly dissatisfied. Based on the Table 1, 16.9 % of the respondents do strongly agree on the statement on reliability, 39.6% of them agreed. There are 19.4 % of respondents are choose neutral for the statement. The respondents that disagree is about 16.1% and 7.7 % of them are strongly disagree with reliability factor influence service quality of Rapid Bus. For accessibility, there are 22.7 % of the respondents does strongly agree on the statement on and 42.2% of them agreed with it. There are 17.2 % of respondents are choose neutral for the statement.

Respondents that disagree is around 13.5% and 4.2 % of them are strongly disagree with accessibility factor influence service quality of Rapid Bus.

For safety and security, there are 20 % of the respondents do strongly agree on the statement, 42.1% of them agreed with it. There are 13 % of respondents are choose neutral for the statement. Respondents that disagree is around 17.7% and 7 % of them are strongly disagree with safety and security factor influence service quality of Rapid Bus. Overall hypothesis that been tested in this study shows positive and significant relationship between reliability, accessibility and safety and security on customer satisfaction.

## **Discussion**

The finding of this study is to show that although passengers are satisfied with the service, which is related to accessibility and safety and security of bus service, but lower responds rate on reliability of the service. It is also found that those from the low income category use this service the most and the rejection in the usage of public transport will lead to the socially degraded mode of transport. From first hypothesis, results show that reliability and positive and significantly affect customer satisfaction. The ability of the management in providing convenient, safe and cheap services tends to show the important effects on customer satisfaction. This is consistent with past study conducted by Li et al. (2010) on lower fares and public transport quality.

Besides that, accessibility shows positive and significant relationship with customer satisfaction. Customer satisfaction on transportation services are based on their ability to obtain the services in convenient ways. This is consistent with previous finding by Chowdhury, Islam et al (2014). Finally, third hypothesis shows positive and significant effects of Safety and Security on customer satisfaction. Safety and security deal with human emotions which are considered as important factor in affecting customer satisfaction. Hence, this results consistent with past study conducted by Albonaemi and Hatami (2015) on airlines services and customer satisfaction.

The overall result shows that reliability, accessibility and safety and security affect customer satisfaction on Rapid Penang. However, more concern needs to be given on reliability of the services to increase the customer satisfaction on Rapid Penang. High quality public bus transport not only keep customer to continue using public bus transport to fulfill their travel demand but also attract potential customer. Thus, the overall general effects of this investigation can be utilized as a ground for building up a superior comprehension on open transportation in Malaysia by shading the lights to transport benefits by state.

There are several limitation have been identified in this research. Firstly, the study has been done by conducting the cross sectional design which represents the data collection made at one point of time. Besides that, researchers faced time limitation to distribute the entire 500 questionnaire towards the bus passenger during festive season. In future, researchers are recommended to add more variables that relate to socio-demographic, transportation structure and quality. Furthermore, in macro level, more research is needed to determine the appropriate policy and plans in order to increase the customer satisfaction on public transport in Malaysia.

## Conclusions and Recommendations

The overall result shows that reliability, accessibility and safety and security affect customer satisfaction on Rapid Penang. However, more concern needs to be given on reliability of the services to increase the customer satisfaction on Rapid Penang. High quality public bus transport not only keep customer to continue using public bus transport to fulfill their travel demand but also attract potential customer. Thus, the overall general effects of this investigation can be utilized as a ground for building up a superior comprehension on open transportation in Malaysia by shading the lights to transport benefits by state.

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