

---

## **User Satisfaction of Public Transport: An Exploratory Study in Penang, Malaysia**

Halizan Bin Haji Hamzah, Azli @ Meor Azli Ayub, Mohd Faiz Hilmi\*

School of Distance Education, Universiti Sains Malaysia,  
11800, Gelugor, Penang, Malaysia

Email: faiz@usm.my

\*Corresponding author

---

### **Abstract**

Efficient public transport reflects a modern society and becoming a core development agenda of nations all over the world. In this regards, this paper aimed to find the influence of perceived value, quality, and reputation of public bus transport on customer satisfaction. Understanding customer satisfaction will lead to improved services. Data were collected from customer of public bus services in Penang, Malaysia using structured questionnaire. The results revealed that, value positively influences the satisfaction of customer using public bus services in Penang. On the other hand, quality and reputation of public bus transport don't have any relationship with customer satisfaction. Therefore, it is important for the service provider to enhance its value offering.

**Keywords** Public transport, satisfaction, value, quality, reputation.

**Paper type:** Empirical Paper

---

<https://doi.org/10.65194/IJBI-2015-1008>

Received 9 March 2015; Received in revised form 14 June 2015; Accepted 3 August 2015  
2309-0693/© 2015 The Authors. Published by IRC Publishers. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

## 1. Introduction

Efficient public transport is a hallmark of any developed nations. Malaysia, with its aspiration of becoming a high income developed nation is aggressively upgrading its public transport infrastructure and services. Public transport reflect "...greater freedom, access and choice..." to those living in urban areas (Aziz & Mohamad, 2013, p. 1). However, Malaysia has been "...promoting a motorized society by improving the road system..." (Yukawa, Ladin, Ismail, & Rahmat, 2014, p. 69). Consequently, such focus by the Malaysian government has led to a high automobiles and motorbike ownership. Furthermore, the same focus has led to a decline in bus services (Yukawa et al., 2014), increase accidents (Das, Ladin, Ismail, & Rahmat, 2013) and contribute to the rising of congestion and air pollution (Chee & Fernandez, 2013; Jayaraman, Choong, & Soh, 2011; Tripathi, Kumar, & Nema, 2012).

Increasing the use of public transportation services has been a key agenda all over the world (Cats, Abenoza, Liu, & Susilo, 2015). Similarly, Malaysian has been urged to fully utilized public transport (Nambiar, 2012). Efficient public transport is not only important for Malaysian but also vital for the tourism industry (Idris & Kumaran, 2014). An extensive network of light rail transit is currently under construction in Klang Valley. As for other cities in Malaysia, efficient public bus services have started to be implemented. In Penang, for example, Rapid Penang operates and extensive network of bus services.

One common objective of any governments is to develop an efficient public transport services (Wallin Andreassen, 1995). This is because public transportation play an important role in reducing traffic congestion (Kamaruddin, Osman, & Che Pei, 2012). Locally, improving the public transport services has been an important agenda for the Malaysian government. According to Kang, Jayaraman and Soh, (2013, p. 8):

*"The Malaysian government introduced seven National Key Result Areas (NKRAs) for improvement between the duration of 2009 to 2011 in an attempt to transform the country to become a developed nation. One of the NKRAs addresses the need to improve public transport infrastructure and its current low ridership."*

Since the number of Malaysian using public transport is increasing (Bernama, 2014), it is important to improve user satisfaction as well. A major concern in Penang is its supportive infrastructure is not in tandem with the growth in population and dwellings (Tan & Yeoh, 2014). Traffic jammed in Penang has becoming more serious (Phuah, 2012). According to the State Local Government and Traffic Management Committee chairman, Chow Kon Yeow, efficient public transport is the way to overcome the traffic jammed (Phuah, 2012). Otherwise, the inefficiency of public transport will force more to drive and worsening the traffic condition (Kumaran, 2014). Furthermore, efficient public transport is the key to a liveability city (Fernandez, 2014).

User satisfaction is the core concern for any services offered (Mohammad Noor, Arshad, & Mohd Jais, 2013). However, Malaysian user are not happy with transport services (The Star, 2012). This might be due to bus operator who are not able to provide punctual services, appropriate frequency of buses and maintain an efficient route (Minhans, Shahid, & Hassan, 2015). According to Khalid, Bachok, Osman, and Ibrahim, "...it is necessary to improve the quality of public transportation services in Malaysia to encourage more public transport user, thus reducing traffic congestion..." (2014, p. 568).

One important topic related to research on transportation is the focus on measuring customer satisfaction (Le-Klähn, Hall, & Gerike, 2014). According to a national survey conducted in Malaysia, public transportation is a major concern, placed at number two after food prices (NST, 2013). Currently Penang lacks a comprehensive public transport system (Tan & Yeoh, 2014). In addition, Malaysian government with similar interest of understanding the effectiveness of public transport has embarked on ridership survey (Ranai, 2012). Findings from two surveys seem inconclusive. A survey reported a relatively low user satisfaction of public transport at 48% citing accessibility, punctuality, waiting time, travel time, bus condition, transfer convenience and driver's attitude as the crucial factors (Choong, 2011). According to the another survey, 71% of the users in Klang Valley satisfied with public transport system (The Star, 2014). User satisfaction reported in that survey might be due to commitment by all land transport systems to improve services.

To supplement these findings, a satisfaction survey on public transport user in Penang is necessary. To be an intelligent state by mean of effective space utilization by the year 2023,

public transport services in Penang need to evolve to be at par with similar services in modern cities (Tan & Yeoh, 2014). One way to overcome the worsening traffic condition is to improve public bus transport system (NST, 2013). Rapid Penang has been providing comprehensive network coverage with high frequency in Penang since 2007 (Phuah, 2012). Rapid Penang provided all public bus services on Penang Island and join five other operators on the mainland (Aziz & Mohamad, 2013).

Since Rapid Penang has been in operation for more than eight years, there must be significant value, quality and reputation experienced by the users. Understanding of the satisfaction of Rapid Penang users will definitely help in improving its services. It is important for public service provider to understand the needs and wants of their customer (Noor & Dola, 2013). Therefore, the objective of this research is to study the influence of value, quality, and reputation of public bus services provided towards customer satisfaction of public transport users in Penang, Malaysia.

## **2. Review of related literature**

Customer satisfaction has been an important topic in the field of marketing (Singh & Kumar, 2014). Satisfaction is the main criteria to measure the success of any public services. Customer satisfaction is considered a proxy for organizational performance of a public service provider (Kamaruddin et al., 2012). Satisfaction as a core variable of marketing (Parahoo, Harvey, & Radi, 2014) strongly influence the impact of any product and services. Furthermore, there is evidence that reputation, quality, and value impact on satisfaction within public transport services (Parahoo et al., 2014). It is important to limit and reduces dissatisfaction (Bachok, Osman, Khalid, & Ibrahim, 2013) by reputation, quality and value. Satisfaction captures the feelings of consumer towards transport services (Parahoo et al., 2014). According to Wallin Andreassen (1995) customer's purchase and consumption experiences will lead to customer satisfaction.

Value is a major factor influencing satisfaction of consumer of public transport (Parahoo et al., 2014). It can be define as consumer's perceptions of what is received and what is given. Value reside in the benefit that the services provide to the customer and has been found to influence behavior of public transport users (Parahoo et al., 2014).

Quality is often included in research on public transport (Borhan et al., 2014; Cascetta & Carteni, 2013; Grujičić, Ivanović, Jović, & Đorić, 2014; Hensher, 2015; Parahoo et al., 2014; Rojo, dell'Olio, Gonzalo-Orden, & Ibeas, 2015; Tripathi et al., 2012). Customers perception of quality is based on what they receive with what they should receive (Tripathi et al., 2012) and customer perceive each quality element differently (Grujičić et al., 2014). Example of quality element highly valued by customers are waiting time, cleanliness and comfort (Grujičić et al., 2014). Recent research reported that there is a wide gap between on what is perceived as quality service between service providers and users (Noor & Dola, 2013). According to Grujičić et al. (2014), service quality for public transport can be divided as passenger comfort, cleanliness and appearance, safety and security, hours of service, reliability, service, coverage, cost and parking spaces.

Service quality has been proven as determinant of customer loyalty (Abdullah & Hilmi, 2014). According to a research by Borhan et al. (2014), service quality of a public transport operator positively influence attitude and behavioral intention of its user. Providing better public transportation services quality has been found to enhances satisfaction (Cats et al., 2015). However, proper methods are required to assess service quality of public transportation (Cascetta & Carteni, 2013). Reputation has been rarely included in research on public transport (Parahoo et al., 2014). Reputation is an important factor used by consumer in making decision (Parahoo et al., 2014). Based on the above discussion, three hypotheses have been developed. The hypotheses are:

**H1:** Service quality delivered by Rapid Penang bus service is positively associated with satisfaction of bus users.

**H2:** Perceived value by users using Rapid Penang bus service is positively associated with their satisfaction.

**H3:** Reputation of Rapid Penang bus service is positively associated with satisfaction of bus users.

Based on the research hypotheses, the research framework are depicted in Figure 1.

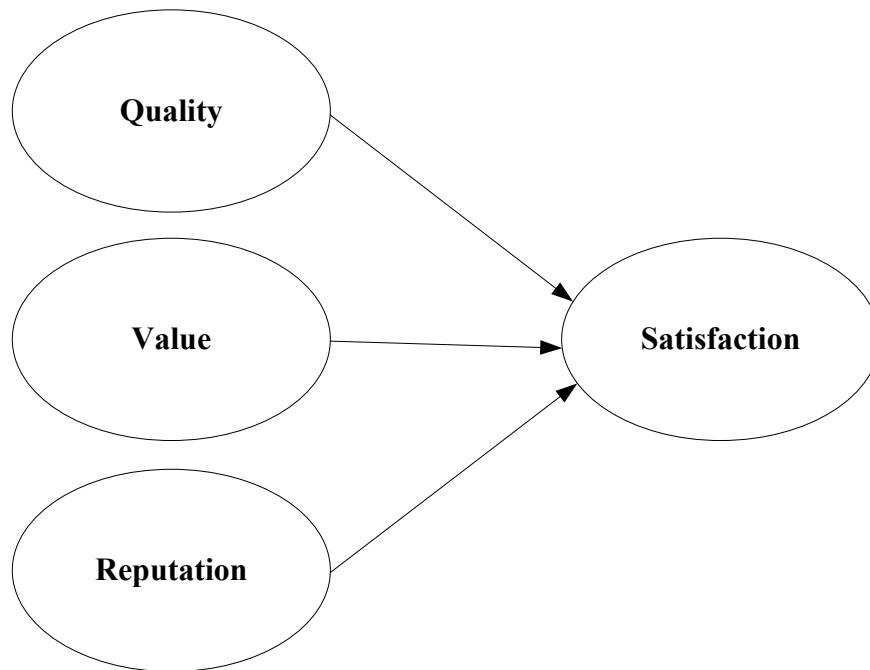


Figure 1 Research framework

### 3. Methodology and finding

Data for the study were collected using survey method. A structured study instrument was used for this purpose. Customers of Rapid bus Penang services were targeted in this study. From a total of 102 questionnaire distributed, 50 were usable for this study. Table 1 shows the demographic profile of respondents. About 18 respondents were males and 35 female. Majority of the respondents were aged between 21 to 40 years (82%). The group with income range of RM 2000 to RM 3000 was the highest number of respondents (42%). And 62% of the respondents are shift workers. The item measurements are adopted from Parahoo, Harvey and Radi (2014) to measure satisfaction, value, quality and reputation of bus users.

Table 1: Background of respondents

	Frequency	Percentage
<b>Gender</b>		
<i>Male</i>	18	36
<i>Female</i>	32	64
<b>Age</b>		
<i>21-30 years</i>	24	48
<i>31-40 years</i>	17	34
<i>41-50 years</i>	6	12
<i>50 years and above</i>	3	6
<b>Academic Qualification</b>		
<i>SPM/SPMV</i>	23	46
<i>STPM</i>	2	4
<i>Certificate</i>	8	16
<i>Diploma</i>	17	34
<b>Income</b>		
<i>RM 1000 and below</i>	12	24
<i>RM 1,000 – RM 2,000</i>	16	32
<i>RM 2,000 – RM 3,000</i>	21	42
<i>RM 3,000 – RM 4,000</i>	1	2
<b>Marital Status</b>		
<i>Single</i>	29	58
<i>Married</i>	21	42
<b>Work Experience</b>		
<i>Less than 1 year</i>	15	30
<i>1 - 5 years</i>	21	42
<i>6 - 10 years</i>	11	22
<i>More than 10 years</i>	3	6
<b>Working Hours</b>		
<i>Shift</i>	31	62
<i>Normal</i>	19	38

Reliability analysis (Table 2) was computed on the study variables to determine reliability of instrument used. It is found that alpha values ranged from 0.694 to 0.792, indicating that reliability is at acceptable level. With little difference in values amongst variables, respondents' evaluation is consistent throughout the study.

Table 2: Reliability Statistics

Variables	No of Items	Cronbach's Alpha
Satisfaction	3	.745
Value	3	.791
Quality	3	.694
Reputation	3	.792

Results described in Table 3 indicate that responses were positively skewed. Mean for all variable are between 4.52 and 4.54. The responses were capture on a five point likert-scale, from 1 (strongly disagree) to 5 (strongly agree).

Table 3: Descriptive Analysis

Variables	Mean	Standard deviation
Satisfaction	4.54	.430
Value	4.54	.465
Quality	4.52	.437
Reputation	4.52	.447

Correlation test will determine if there is significant relationship between all variables in the study. Based on Pearson correlation in Table 4, there is a positive significant correlation between value and satisfaction ( $r = 0.466$ ;  $p < 0.01$ ), between reputation and satisfaction ( $r = 0.283$ ;  $p < 0.05$ ), between quality and value ( $r = 0.324$ ;  $p < 0.05$ ) and between reputation and quality ( $r = 0.565$ ;  $p < 0.01$ ).



Table 4: Correlation

	Satisfaction	Value	Quality	Reputation
Satisfaction				
Value	.466**			
Quality	.188	.324*		
Reputation	.283*	.212	.565**	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\*p<0.05; \*\*p<0.01

Regression analysis is done to test the developed hypothesis as discussed in chapter 3 and to find out if independent variables have significant relationship with a dependent variable. It also indicates relative strength of each independent variable's effects on a dependent variable.

Table 5 indicates that value significantly influenced satisfaction. Thus H2 is accepted. Quality and Reputation, however, didn't not influenced satisfaction in a significant way. Thus H1 and H3 are not accepted. The test revealed that a variance of 25.8% ( $R^2$ ) of satisfaction can be explained by value, quality and reputation.

Table 5: Regression Analysis

Independent Variables	Beta
Value	.444**
Quality	-.576
Reputation	1.561
$R^2$	.258
F Change	5.325**
Durbin-Watson	1.864

\*p<0.05; \*\*p<0.01

## 5. From discussion to implication and limitation

This study found out that independent variable of value significantly influence dependent variable of satisfaction. Hence, Rapid Penang customers would likely be satisfied if they perceived that Rapid Penang is providing a convenient means of transportation, enables them to

reach different parts of the city in a convenient way and accessible to them. Research focusing on user of Dubai Metro public transport also obtained similar findings (Parahoo et al., 2014).

Contrary to initial expectation, quality and reputation did not influence satisfaction of Rapid Penang bus users. Specifically, users might be focusing on the values more than quality aspect included as the questionnaires items such as customer service, visually appealing infrastructure and safety. Furthermore, public transport user in Penang has been used to the quality level that they no longer relate it to satisfaction.

Quality might not influence satisfaction due to the fact that as public transport service provide matured, the quality of their services reduces (Tripathi et al., 2012). In addition, past research on public transport in Klang Valley showed that service quality to be between average to low (Noor & Dola, 2013). Referring to a research on Rapid Penang sister company, Abdullah & Talip (2013) suggest Rapid KL to focus on meeting the needs of customers and providing services free from deficiencies.

As for reputation, Rapid Penang bus users do not linked good reputation, positive image and smart way to travel as items influencing their satisfaction. User might just want to get to their destination using the lowest cost possible.

Evidence from this study revealed that only value significantly influence satisfaction. Therefore, Rapid Penang should be focusing more on improving its values as the strategies to improve customer's satisfaction. As for public transport user, the money paid for the bus ticket is the common proxy for value. The ticket price needs to be control accordingly to ensure satisfaction.

As exploratory in nature, this study uses small respondents due to resources constraint. A more comprehensive large scale study should be conducted to further refine the analysis. In addition to quantitative survey, a qualitative interview should also be conducted to obtain detail insights from the user of Rapid Penang bus services.

## 6. Conclusion

Customer satisfaction will continuously be a central focus by Rapid Penang as in keeping pace with improving its services. This paper aimed to find the influence of perceived value, quality, and reputation of public bus transport on customer satisfaction. The findings of this study suggest that value is a crucial criterion in enhancing customer satisfaction. Thus, strategies must be crafted around value related criteria in maximizing customer satisfaction. It has never been easy to attract people to use the public bus service (Santoso, Yajima, Sakamoto, & Kubota, 2012). But effort to increase the patronage of public bus must be continued to create a livable environment. In a nutshell, effort to encourage the use of public transport must continue (Nambiar, 2012).

## References

- Abdullah, A. A., & Talip, R. M. (2013). Rapidkl Bus Service in City Center, Kuala Lumpur, Malaysia: An Epitome of Good Service? *International Journal of Academic Research in Business and Social Sciences*, 3(4), 333-349.
- Abdullah, H. N., & Hilmi, M. F. (2014). Service Quality As Determinant Of Customer Loyalty. *International Journal of Business and Innovation*, 1(4), 1-11.
- Aziz, A., & Mohamad, J. (2013). Urban Public Transport in Penang: Some Policy Considerations. *Proceedings of the Eastern Asia Society for Transportation Studies*, 9.
- Bachok, S., Osman, M. M., Khalid, U. A., & Ibrahim, M. (2013). Commuters' Perceptions on Rail based Public Transport Services: A Case Study of KTM Komuter in Kuala Lumpur City, Malaysia. *Planning Malaysia: Journal of the Malaysian Institute of Planners*, XI, 97-124.
- Bernama. (2014, 2 January 2014). Public Transport Usage In Klang Valley Continues To Rise *New Straits Times*.
- Borhan, M. N., Syamsunur, D., Akhir, N. M., Yazid, M. R., Ismail, A., & Rahmat, R. A. (2014). Predicting the use of public transportation: a case study from Putrajaya, Malaysia. *ScientificWorldJournal*, 2014, 784145.
- Cascetta, E., & Carteni, A. (2013). A Quality-Based Approach to Public Transportation Planning: Theory and a Case Study. *International Journal of Sustainable Transportation*, 8(1), 84-106.

- Cats, O., Abenoza, R. F., Liu, C., & Susilo, Y. O. (2015). *Identifying Priority Areas Based On A Thirteen Years Evolution Of Satisfaction With Public Transport And Its Deteminants*. Paper presented at the 94th Annual Meeting of the Transportation Research Board, Washington D.C.
- Chee, W. L., & Fernandez, J. L. (2013). Factors that Influence the Choice of Mode of Transport in Penang: A Preliminary Analysis. *Procedia - Social and Behavioral Sciences*, 91, 120-127.
- Choong, M. Z. (2011, 28 March 2011). Public Transport User Satisfaction Is Only 48%, *The Star*.
- Das, A. M., Ladin, M. A., Ismail, A., & Rahmat, R. O. K. (2013). Consumers Satisfaction Of Public Transport Monorail User In Kuala Lumpur. *Journal of Engineering Science and Technology*, 8(3), 272-283.
- Fernandez, N. (2014, 26 July 2014). Making Penang More Liveable, *The Star*.
- Grujičić, D., Ivanović, I., Jović, J., & Đorić, V. (2014). Customer perception of service quality in public transport. *Transport*, 29(3), 285-295.
- Hensher, D. A. (2015). Customer Service Quality And Benchmarking In Public Transport Contracts. *International Journal of Quality Innovation*, 1(4).
- Idris, A. A., & Kumaran, L. (2014, 1 January 2014). Public Transport Vital For Tourism, *New Straits Times*.
- Jayaraman, K., Choong, J. S. S., & Soh, K. L. (2011). Robust models for the utilization of public bus transport services in Malaysia. *African Journal of Business Management*, 5(26).
- Kamaruddin, R., Osman, I., & Che Pei, C. A. (2012). Customer Expectations and its Relationship Towards Public Transport in Klang Valley. *Journal of Asian Behavioural Studies*, 2(5), 29-38.
- Kang, S. A. G., Jayaraman, K., & Soh, K. L. (2013). Road Congestion, Vehicles Emissions And The Intention To Use Public Bus Services In Malaysia – A Flexible Bus Utility Model. *World Transport Policy and Practice*, 19(1), 8-24.
- Khalid, U. A., Bachok, S., Osman, M. M., & Ibrahim, M. (2014). User Perceptions of Rail Public Transport Services in Kuala Lumpur, Malaysia: KTM Komuter. *Procedia - Social and Behavioral Sciences*, 153, 566-573.
- Kumaran, L. (2014, 3 March 2014). Improve Public Transport In City, *New Straits Times*.

- Le-Klähn, D.-T., Hall, C. M., & Gerike, R. (2014). Analysis of Visitor Satisfaction with Public Transport in Munich. *Journal of Public Transportation*, 17(3), 68-85.
- Minhans, A., Shahid, S., & Hassan, S. A. (2015). Assessment of Bus Service-Quality using Passengers' Perceptions. *Jurnal Teknologi*, 73(4), 61-67.
- Mohammad Noor, N., Arshad, A. K., & Mohd Jais, I. B. (2013). *An Analysis Of User Satisfaction On Public Transport Terminal Based On Users Survey*. Paper presented at the International Postgraduate Seminar 2013, Shah Alam, Selangor.
- Nambiar, P. (2012, 20 January 2012). Use Public Transport, Visitors Urged, *New Straits Times*.
- Noor, K. B. M., & Dola, K. (2013). Towards Low Carbon Society: Exploring Users' Perceptions On The Service Quality Level Performance Of Public Transport Staff In The Klang Valley. *International Journal of Management and Sustainability*, 2(8), 138-149.
- NST. (2013, 1 March 2013). Crying Need For Better Public Transport, *New Straits Times*.
- Parahoo, S. K., Harvey, H. L., & Radi, G. Y. A. (2014). Satisfaction of Tourists with Public Transport: An Empirical Investigation in Dubai. *Journal of Travel & Tourism Marketing*, 31(8), 1004-1017.
- Phuah, K. L. (2012, 3 March 2012). Let's Free Penang Of Traffic Jams, *New Straits Times*.
- Ranai, M. (2012, 11 January 2012). Survey On Number Of Public Transport Users, *New Straits Times*.
- Rojo, M., dell'Olio, L., Gonzalo-Orden, H., & Ibeas, Á. (2015). Inclusion of quality criteria in public bus service contracts in metropolitan areas. *Transport Policy*, 42, 52-63.
- Santoso, D. S., Yajima, M., Sakamoto, K., & Kubota, H. (2012). Opportunities and strategies for increasing bus ridership in rural Japan: A case study of Hidaka City. *Transport Policy*, 24, 320-329.
- Sekaran, U. (2005). *Research Method For Business: A Skill Building Approach* (4th ed.). New York: John Wiley & Sons.
- Singh, B., & Kumar, D. (2014). Customer Satisfaction Analysis On Services Of Delhi Metro. *Asian Journal of Multidisciplinary Studies*, 2(1), 124-130.
- Tan, D., & Yeoh, W. (2014, 22 August 2014). Penang's Growing Pains, *The Star*.
- The Star. (2012, 6 September 2012). Public Not Too Happy With Transport Services, *The Star*.
- The Star. (2014, 18 November 2014). SPAD: 71% of City Folk Satisfied With Public Transportation System, *The Star*.

- Tripathi, V., Kumar, A., & Nema, G. (2012). Measuring Service Quality in Indian Public Transport System: A Comprehensive Review. *Asia-Pacific Marketing Review*, 1(1), 113-119.
- Wallin Andreassen, T. (1995). (Dis)satisfaction with public services: the case of public transportation. *Journal of Services Marketing*, 9(5), 30-41.
- Yukawa, S., Ladin, M. A., Ismail, A., & Rahmat, R. A. A. O. K. (2014). Public Transport System in Local City and Rural Area: Comparative Study Between Malaysia and Japan. *Jurnal Teknologi*, 69(6), 69-72.