Users' Satisfaction of Smart Selangor Bus Services

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Abstract

Efficient public transportation is an important tool of social mobility that contributes greatly towards the connectivity of the general public in prospering economic and social growth. Understanding this, the Selangor State Government through the Smart Selangor Bus (SSB) initiative provides free, subsidized bus service throughout the state of Selangor to enable such social mobility to occur especially amongst the lower income group of the people in Selangor. This study investigates the effectiveness of the free, subsidized public transportation provided and understand the factors that contribute to the users' satisfaction. Coefficient correlation and regression analysis were employed to find out the relevance and significance of the relationship between the selected variables. The results of this study indicate that punctuality and reliability, cleanliness and maintenance, comfort and safety as well as additional facilities of the SSB, significantly related to the effectiveness of the bus service, thus ensuring the satisfaction of the users. The test revealed that 68.5% of the variables emplaced within the study explain the satisfaction of the users. This finding provides insight for enhanced management to the stakeholders of the SSB, particularly the operators and funders of the bus services and the general public.

Keywords: Effectiveness, Punctuality, Public Transportation, Reliability, Satisfaction, Cleanliness

1.0 Introduction

Selangor is Malaysia's golden state that accounts for the highest number of population concentration in Malaysia with 6.3 Million people representing 19.9% of the total population in Malaysia (Department of Statistics, 2017). The Smart Selangor Initiative was launched by the Selangor State Government in November 2016 with the vision for Selangor to be a dynamic, economically vibrant, culturally rich, and caring technology-enabled "Smart State" by the year 2025, in close engagement with its citizens. The development of the state as a "Smart State" is guided by the philosophy of promoting social inclusion and active citizen engagement while addressing urban challenges using technology as a key enabler in spurring a citizen-led ecosystem for sustainable socio-economic growth, stimulation of investments, improvements of connectivity and standard of living (Husin**,** Yulia, Mohd Ghazali, & Zainal Azim, 2019). As part of its efforts to achieve the "Smart State" status, the State Government launched a series of programs for the citizens within the State of Selangor under the '*Inisiatif Peduli Rakyat*' (IPR) (People-Centric Initiatives). The State Government realizes the importance of the citizens to have greater connectivity and mobility within the locations in the state which experience increasing traffic congestions due to the rising number of vehicle ownership, and this led to the launching of the Smart Selangor Bus (SSB) service on 1st July 2015. This marks the first for Selangor as the first state in Malaysia to be offering free bus services to the public which is equipped with free Wi-Fi onboard for internet connectivity for its users, specially

designed to be disabled friendly with lack of barriers within it, cushioned seats with a capacity of 69 users at any time. The SSB services had been extended to cover all nine (9) districts within Selangor under the jurisdiction of twelve (12) local government authorities with 100 busses covering thirty (30) routes with one thousand three hundred (1,300) SSB bus stops, and an estimated ridership of twenty-two million and one hundred thousand (22,100,000) since its services first commenced.

On the hindsight, up to date, there is limited empirical research that had been carried out to determine the effectiveness of the SSB initiative and user satisfaction of the free/subsidized public transportation service that has involved the State Government Ringgit Malaysia forty-three million (RM43,000,000.00) to operate (*Selangorkini, November 3, 2018)* hence, this research aims to determine the satisfaction of users in the SSB services as well as to determine the factors that can improve the bus services.

2.0 Literature Review

Public Transport is catered for land public passenger as well as land public freight transport and it includes land public transport services, terminals, networks, systems, operations, and other services associated with land public transport services (Land Public Transport Act, 2010). Transport includes not only the services offered but also the terminals, networks, and systems among others, thus it becomes relevant for other factors to be gauged not only with regards to the "Punctuality & Reliability" of the services of the busses but also the "Cleanliness & Maintenance" of the busses and the bus stops, the "Comfort & Safety" of users whom utilizes the services and the bus stops and also make use of the "Additional Facilities" provided.

Excellent public bus service is important to support the economic growth, growing population, and expansion of urban as well as rural activities, hence connectivity and mobility become the key components that could spur the transactions between varied entities in the supply chain of products, goods, services, and resources both in the tangible and intangible forms of sustainable public transportation (Bachok, Osman, and Ponrahono, 2014). Meanwhile, Budiono (2009) stated that satisfaction is the customers' fulfillment of their needs, therefore it is paramount to determine whether the SSB services serve its intended purpose by looking at whether it has achieved its predetermined desired effect in fulfilling the satisfaction of the general public to obtain quality subsidized public transportation services.

Punctuality and reliability are crucial because public transportation service can only be reliable if it is on-time and meet the scheduled times for journeys. Yaakub and Napiah (2011) postulated that measuring the reliability and punctuality of public transit service is significant because both the transit passengers and the transit provider value reliable service. Reliability is the ability to deliver a service as planned and is normally expressed in terms of the proportion of mileage 'lost' due to factors such as traffic congestion or mechanical failures. Smith and Clarke (2000) argued that reliability is the capability of the transportation system to adhere to a schedule or maintain regular headways and a consistent travel time, which is the on-time or punctuality performance and headway evenness.

Besides punctuality and reliability, cleanliness and maintenance are also important with regards to transport satisfaction, and users always concern about matters relating to public utilities or facilities provided. Serving food in a canteen may be quick and affordable but if it is dirty and not well maintained, the experience of a customer would be less than satisfactory. Besides, people wish to be out of harm when they use any services, hence it is crucial to determine the element of "Comfort & Safety" with regards to user experience in using SSB services. Thus, the bus stops and busses as part of the SSB network should be of a certain standard in satisfying the need of commuters to feel comfortable riding SSB.

Some users indicate that they feel safe if there are cameras around the bus premise or if the bus stops are located strategically to deter any acts of crime from happening unto them. Smith and Clarke (2000) emphasized that safety assurance is an important consideration for people to choose public transportation while at the same time the sense of safety is so paramount to some users as they fear they would be harassed, robbed or assaulted and this incidence deters them from using public transportation. Kamarudin, Osman and Che Pei (2012) state that the main factors that influence customer satisfaction towards public transportation in Klang Valley are safety, followed by accessibility, reliability, fares, communication as well as experience.

Another important factor is referred to as "Additional Facilities" which concerns the value-added services that could elevate a user's satisfaction in using the services. Amiril, Nawawi, Takim and Latif (2014) consider that public bus service should provide good accessibility that leads to reliable, safe, intelligent, convenience and effective transportation systems. All of the elements mentioned above are considered as the independent variables in this paper to investigate user satisfaction with regards to the SSB services, and to identify whether the services provided are of a certain quality. Some elements are tangible which can be measured in numbers such as traveling time or delays that determine punctuality while some are intangible and they could not be quantified such as the sense of comfort, safety, perception of cleanliness as well as good maintenance. Nevertheless, all of them play a role in contributing to the quality and effective services that could satisfy the users, and in this case, a comparison between customer expectation and perception of service is worth documented (Parasuraman, Zeithaml, and Berry, 1994).

3.0 Methodology

To gather the relevant data, a set of questionnaires is distributed in 2018 to a targeted number of two hundred (200) bus riders four times in a month in three major urban areas in Selangor namely Shah Alam, Subang Jaya and Klang by using convenience sampling. The questionnaire is adapted from previous studies on effectiveness of transport (Bachok et al., 2014, Yaakub et al., 2011, Kamarudin et al., and Amiril et al., 2014). Out of 200 respondents, only 169 set are useable, producing 84.5% of response rate. The questionnaire is formulated in five sections: Demographics, Effectiveness of SSB, Punctuality and Reliability, Cleanliness & Maintenance, Comfort & Safety, and Additional Facilities. Five (5) Likert scale is used to measure the satisfaction of the respondents in the following order: 1. represents "*strongly disagree*"; 2. "*disagree*", 3. "neutral"; 4. "*agree*"; and 5. "*strongly agree*".

4.0 Results

Table 1 shows the results of Cronbach Alpha which indicate that all variables are above 0.9, conforming that the items employed for this study are reliable.

Table 1: Reliability Test

No	Variable	No. of Item	Cronbach Alpha
1	Effectiveness of SSB	10	0.888
2	Punctuality & Reliability	5	0.787
3	Cleanliness & Maintenance	5	0.898
4	Comfort & Safety	5	0.902
5	Additional Facilities	6	0.841

Table 2 shows information about SSB users' demographic profiles of the respondents. The majority of the users are Malaysian which represents 91.3% and only 8.7% are non-Malaysian. The age of the majority of the respondents is 30 years old and below. The biggest number of respondents who represent more than 49.3% are those that work in the office environment. With regards to the income group, 39.2% of the respondents are categorized in the group income which is less than RM1,000. 31.9% of the respondents use SSB since January 2017 and 50.7% of the users have been using SSB for five (5) times in a month.

Table 2: Demographic Profile

Characteristics	Frequency	Percentage
Nationality		
Malaysia	154	(91.30)
Non-Malaysian	15	(8.70)
Age		
20 years old and below	42	(24.6)
21 – 30 years old	42	(24.6)
31 – 39 years old	32	(18.8)
40 – 49 years old	21	(13.2)
50 years old and above	32	(18.8)
Working Place		
Office	83	(49.3)
Supermarket/ Shop	23	(1.5)
Factory	5	(2.9)
Own Business	10	(5.8)
Student	51	(30.4)
Not Working	17	(10.1)
Individual Income		
Less than RM 1,000	65	(39.2)
RM 1001 – RM 2000	17	(10.1)
RM 2001 – RM 3000	25	(14.5)
RM 3001 – RM 4000	20	(11.6)
RM 4001 – RM 5000	20	(11.6)
Above RM 5001	22	(13.0)
Usage of SSB since?		
Since Jan 2018	54	(31.9)
Since Jul 2017	30	(17.4)
Since Jan 2017	27	(16.0)
Since Jul 2016	9	(5.7)
Since Jan 2016	49	(29.0)
How frequent do you use SSB?		
Less than 5 time a month	86	(50.7)
Between 5 to 10 a month	15	(8.7)
Between 11 to 15 a month	7	(4.4)
Between 16 to 20 a month	7	(4.4)
More than 20 times a month	54	(31.8)

Regression analysis is employed to identify which independent variables that have associations with the dependent variable and to determine which factors that the researchers are looking for to answer the research objectives of the factors that influence the users' satisfaction of BSS.

Table 3: Regression Results

Variable	Standardized Coefficient Beta	Sig.	Vif	R^2
Cleanliness	.070	.006*	2.217	
Comfortable	.425	.000*	2.021	0.685
Additional Facilities	.383	.001*	2.418	

Table 3 shows the full result of the model. We found that there is a significant relationship between the effectiveness of SSB with the factor of cleanliness and maintenance (*p=0.070*), comfortable and safety (*p= 0.4250)* and additional facilities (*p= 0.383)*. We observed that the factor of punctuality and reliability has been excluded by SPSS from the analysis of the coefficient. This is surprising because as observed, the inflation factor variance (VIF) is a score of 2.2 thus, a reason why this would occur is that there is collinearity or multicollinearity between predictors particularly when there is the real situation that is being looked at in the research. To evaluate the model a diagnostic checking was conducted and it is found that there is no multicollinearity (relationship among the predictors) that occurs in the data as the variation inflation rate (VIF) is less than five. This means that the efficiency of SSB is best explained by the four significant predictors. The VIF measures how much the variance of the estimated regression coefficient is inflated as compared to when the predictor variables are not linearly related. The range for VIF is VIF = 1 (Not correlated), 1 < VIF < 5 (Moderately correlated) and VIF > 5 to 10 (Highly correlated). The result shows that each variable has a moderate correlation between those variables. Hence, the suggested model is shown below:

Efficiency BSS = 0.070 cleanliness & maintenance + 0.4250 comfortable & safety + 0.383 additional facilities.

Based on the regression summary, from Table 3, R^2 (R *squared*) value is 0.685. This means that 0.685 variation in *Y* is explained by *X*. Hence contributing, to 68.5 of the overall value of *Y*. This model indicates that the 68.50 % of the efficiency of SSB is affected by cleanliness & maintenance, comfortable and safety and additional facilities.

5.0 Discussion

Public transport is very important for the social mobility of people especially in the most densely populated state in Malaysia such as Selangor. Consequentially, Selangor continues to grow economically and socially, resulting in more demands for improvements of convenient mobility and not burdensome to the general public. This study proves that the efficiency of SSB is mainly affected by cleanliness and maintenance, comfort and safety, and additional facilities while another 31.5% of the efficiency of SSB is affected by other factors that are not within the scope of this study.

6.0 Conclusion

This research is significant since as far as SSB is concerned, from its inception in 2015, the objective of the initiative has to be determined whether it has been achieved or otherwise, and it is hoped that the findings of this research could assist in improving SSB services. The users' satisfaction of utilizing the services is shown to have a strong relationship with the cleanliness and maintenance, comfort and safety as well as additional facilities provided. The result shows that the main objective of this research

which is to gauge the users' satisfaction of SSB services has been achieved, and this will be applied to determine the efficiency of the free and subsidized SSB services. Therefore, we recommend the State government to take particular action on cleanliness and maintenance of SSB. The bus riders are concerned about riding in a hygienic and nice-looking bus. Additionally, for safety reason especially on the part of the commuters, SSB bus stops should install close-circuit television CCTV cameras at the bus stops to link it to a command center or the nearest police station together with a "panic button". The sense of security that the bus stops provided would ensure that SSB services would be a preferred choice compared to normal bus services and complement any crime fighting initiative espoused by the State Government and police. SSB may emulate the *Keretapi Tanah Melayu Komuter* services by having special "women-only" busses to provide a sense of security for women from cases of sexual harassments, molestations, physical harm, among others. It is hoped that these recommendations will further improve and enhance SSB services.

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