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Abstract:
Free bus service is known to serve passengers with the same goals as normal bus does. In fact, the implementation of free bus service act as an alternative solution to those who have limitations in terms of financial. To keep a high satisfaction level of its passengers regardless of various backgrounds, it is important for the free bus providers to maintain the service quality on the free bus service. Therefore, this study aims to investigate the relationship between socio-demographic characteristics and the satisfaction level of passengers on free bus service allocate in Klang Valley and Johor, Malaysia. A survey was conducted among the free bus users to collect data on their socio-demographic characteristics and their experiences towards the service quality offered. The results showed that married passengers were less interested in using the free bus service than young and single ones. Moreover, passengers who had low income, no driving license and no vehicles were more likely to use the service. The overall satisfaction level of passengers was high (mean score > 3.6), indicating that the service quality provided by the free bus service provider met the expectations of passengers. However, no evidence was found from this study to relate socio-demographic factors with satisfaction level.

INTRODUCTION

The implementation of a free bus service is an ambitious effort aimed at increasing accessibility and social mobility. Implementing a free bus service overcomes financial issues, making public transport a feasible alternative for a larger population. By ensuring that transit is not a costly burden for passengers, this technique helps to achieve social equity [1]. Aside from cost, a free bus service promotes a sustainable environment by pushing passengers to switch from private vehicle use to shared, eco-friendly transportation [2]. To increase public awareness and promote greater acceptance, successful outreach about the effort is critical, including clear route information and scheduling. A free bus service not only tackles transportation issues, but it additionally leads to a more welcoming, environmentally friendly and integrated city [3].

Apart from passengers experience alone, the variation backgrounds (socio-demographic characteristics) of passengers can have a large impact on public bus ridership [4]. Income levels as well as employment status, for example, are important socio-demographic factors in influencing the demand upon public transport especially in free bus service. Passengers with lower incomes may be more likely to use buses as an affordable option of transportation [5]. Furthermore, the accessibility of other transportation choices, such as private automobiles or ridesharing services, might have an influence on free bus service ridership. Cultural and demographic variables also play a role; towns with a strong public transit services may have greater rates of bus ridership. Urban planning and infrastructure accessibility, such as the availability of bus stations and routes to specific neighbourhoods, might impact whether people pick buses as a convenient and practical mode of transportation [6]. Acknowledging the different background of passengers becomes essential for public transport companies to successfully personalize services and boost entire ridership.

Free bus services promote more individuals to prefer buses over their own cars by minimizing costs related to public transportation [7]. Such a shift can help to reduce overall traffic congestion and pollutants in the air, fostering more sustainable and environmentally friendly metropolitan surroundings. There is no exception to sustainable development in every aspect of daily life issues especially in shifting to renewable energy and circular economy as well the need to reduce the major contributions to climate change and emission of fossil fuels. It is also believed that by approaching end of the fossil fuel era poses a special challenge since most modes of transportation rely on liquid energy carriers like gasoline or diesel [8]. However, with the application of sustainable transportation practices, environmental issues can be avoided and lessened

The goal of serving passengers with a smooth and joyful travelling experience is by improving the free bus service quality through multiple strategies [9], [10]. The importance of punctuality and the degree of accuracy to schedules guarantees that passengers can rely on the service for quick transportation. Passengers must be informed about routes, schedules and any service updates via clear and effective communication channels; while on-board and on multiple platforms [11]. Investing in well-trained and good staff helps to create a good culture in which passengers feel highly appreciated and welcomed. Comfort is increased by the use of modern technology such as real-time tracking systems and e-payment choices. Furthermore, constant ridership from the locals assists transportation authorities in understanding and meeting the different demands of its according to passengers' preferences. By emphasizing these factors, public transportation systems can not solely satisfy but even surpass customers' expectations, resulting in a rise in ridership and satisfaction [12]

Passengers on free bus service bus seek for a pleasant and joyful travelling experience. The primary focus is on guaranteeing an enjoyable experience for passengers, with ergonomically seating plan, enough space for legs and well-maintained interiors. A relaxing mood for passengers in public bus is created by the calming natural lighting and proper ventilation systems [13]. Smart features like Internet access, USB charging ports and easy-to-read informative displays may help to improve overall experience [14]. The quiet engine system and skilful drivers also contribute to a pleasant and smooth riding experience that can eliminates the effects caused by poor road conditions [13], [15]. Overall, the dedication to passenger experience on free bus goes beyond simply providing transportation; it tries to make the everyday trip a positive and joyful part of passengers' routines.

Determining Satisfaction Level of Passengers on Free Bus Service

It is important to attract passengers to keep on using the free bus service regardless of their demographic background. This is because some passengers might be using the services not because of their financial issues or limitation to use private vehicles, but because of their own desire. This willingness is influenced by the excellent services provided by the bus providers that leads passengers to have high satisfaction level when using the service. In order to determine the satisfaction level of passengers, this paper has highlighted eight service quality factors that are related to the free bus services as shown in Table 1. All factors were then included in this study. Hence, this study is needed in order to know which group of passengers are seen to use the service more often and their satisfaction level towards the eight service quality factors offered by the bus providers

Table 1. Service quality factor to determine satisfaction level of passengers

Service quality	Explanation
Comfort (CF)	Important keys in determining comfort are average riding comfort, estimated riding comfort, comfort disorders that are suddenly arise and constant vehicle vibration and movements [16]. Comfort level can also be assured with information accuracy, good condition of terminals and public transport operates in good condition including staffs' behaviour [15], [17].
Responsiveness (R)	Referred to the willingness of staff to help and deliver excellent service to passengers. The mindset and immediate responses of staffs in whatever passengers' requested and arguments including their professional attitude when handling any possible situations that might occur inside the free bus [12], [18].
Capacity (CP)	Capacity control in public transportation is either done via reservation (express bus) or based on first come, first served basis (shuttle and stage bus). However, the one thing in common is that there are no accurate estimations for how many passengers will be riding the bus at any particular time. This is likely to happen because bus is known to be able to bring large number of people at one time regardless of what type of bus given [19]. The issue has become the spotlight since only small number of users can use the services at one time due to the maximum capacity is relatively low [20].
Facility (FAC)	Must be equipped with modern technology to create connections when transiting. However, the accessibility which features available inside the free bus must be reachable via mobile phones, the duration to meet the service criteria, sufficient service hours provided as well as the overall facility served must be at a reachable area [19], [21].
Safety (SF)	Can be described as the feeling of being safe from environmental problems and human crimes. Based on the research made by Talmizi and Tahir [15], the level of users' safety is important as it involves the life of the users.
Speed (SPD)	Speed prediction is important to determine the passenger information and how well bus providers managing the services. External variables, such as traffic volume and infrastructure have an impact on this factor. One of the initiatives to improve the speed of public transportation in urban centres is by implementing the bus ways in which, normal car users are not allowed to use the ways during rush hours [22], [23].
Ticketing system (TS)	Nowadays, ticketing system has been extremely smooth due to the contactless card that allows passengers to scan through their wallet or bag to make payments. The data is stored and once the card gone missing, all information can be restored. This payment method also allows user to not waste passengers' time without having to que at the ticket counter for top-ups or physical ticket [24], [25].
Information provision (IN)	In public transport, information is defined as to deliver goods or services to customers. A well-information provided at the station as well as while on ride have influence on the service quality offered. Items related to information includes stops schedule, duration of service, price and any service interruption for maintenance purposes informed to the customer [26]. The most effective way to promote the public transportation services is via advertising on social media which covers in the form of visual and audio [27].

METHODOLOGY

The free bus service operated in Johor and Klang Valley were the main focus of this study. This study distributed a series of questionnaire survey to the passenger of free bus service in all districts of the two states. This study also involves quantitative method with a series of questionnaire survey being distributed manually to the passenger. The survey design was arranged with the need of dependent and independent variables that later used in the analysis part of this study. There were three sections available in the questionnaire form namely Section A (Demographic Background), Section B (Passenger Satisfaction Level) and Section C (Passenger Expectation Versus Real Satisfaction Level). Section A required respondents to give details regarding their demographic background with 8 items included. Meanwhile in Section B, respondents were asked to rate the eight service quality factors based on the 5- point Likert-scale question. In Section C, comparisons between respondents' expectation and real satisfaction level were asked.

Since the research main instrument was through questionnaire surveys, it was manually distributed for four months in Johor (June 2022 to September 2022) and three months in Klang Valley (August 2023 to November 2023). Before distributing the surveys, expert review was also being done. Five experts were chosen in accordance to the claims made by Polit et al. [28] stated that a minimum number of three experts are adequate for the process of instrument validation. Each and all experts were asked to evaluate every item available in the questionnaire (draft). Later, some modifications were needed to be done by the researcher based on the comments and recommendations made through the validation process by the experts. Once validation process has completed, reliability analysis was done afterwards.

There was a total of 28 items available in this section. Further details of the instrument are shown in Table 2 alongside with the result of reliability analysis in Table 3. Reliability analysis or also can be known as pilot study is an analysis to determine the consistency of the responses by the respondents. A scale or test, for example, is said to be accurate if repeated measurements taken under the same conditions yield the same result [29]. Gliem et al. [30] stated that

Cronbach's alpha (α) that value more than 0.90 is excellent and highly acceptable. If the Cronbach's alpha (α) value obtained is bellow than the acceptable range, modification and items deletion are required when necessary. The pilot study is once again run until the value lies within the acceptable range. Therefore, 20 respondents are called for to run this analysis and all items in Section B and Section C reached Cronbach's alpha (α) range of $0.852 \leq \alpha \leq 0.968$. This indicates that the survey received such positive feedbacks from the respondents towards the questions asked.

Table 2. Questionnaire details

Section	Item	No. of item	Source
A	Demographic background	9	–
B	Comfort	8	[11], [15], [31]–[37]
	Responsiveness	5	
	Capacity	4	
	Facility	6	
	Safety	5	
	Speed	3	
	Service	3	
	Information provision	4	
C	Passenger expectation	3	[38], [39]
	Passenger satisfaction	4	

Table 3. Reliability analysis result

Section	Item	α
B	Comfort	0.920
	Responsiveness	0.943
	Capacity	0.852
	Facility	0.933
	Safety	0.968
	Speed	0.958
	Ticketing system	0.867
	Information provision	0.967
C	Passenger expectation	0.918
	Passenger satisfaction	0.913

Sample Size and Data Collection Process

In this study, the targeted respondents (population) were the daily user of the free bus service in Johor and Klang Valley. In Johor the number of daily passengers is approximate to 3,105 passengers/day meanwhile in Klang Valley, it was reported that the number of daily passengers is approximate to 54,355 passengers/day. The drastic difference between the number of passengers in Johor and Klang Valley is because in Johor, the free bus service is only opened to the Malaysians meanwhile in Klang Valley, the bus service is only free for the Malaysians while foreigners have to pay upon each trip. Therefore, foreign passengers are only being included in the number of daily passengers in Klang Valley. By referring to Krejcie and Morgan [40], the sample size needed for Johor and Klang Valley are 375 and 382 respectively. Questionnaires were then distributed around 400 sets to the targeted respondents in each state. However, only 375 sets were returned back in Johor meanwhile for Klang Valley, only 183 were returned. This marks that Klang Valley has lower response rate when compared to Johor because the duration on each trip was too short and there were too many foreign passengers on ride.

The process of distributing questionnaire surveys were conducted through physical and online form (scanned through QR code). However, both forms were not allowed to be distributed without permissions as to avoid data obtained out of the targeted population. Respondents were also informed that every information obtained through the survey will remain confidential and used for the research purpose only. Data collection was done with respondents that are willing to contribute well. Respondents were chosen according to the criteria as shown in Figure 1. The criteria must be followed in order to get a higher response rate and accurate information of the respondents can be obtained. Respondents were then briefed about the actual purpose of conducting the survey and they were allowed to ask questions to help them understand the survey well.

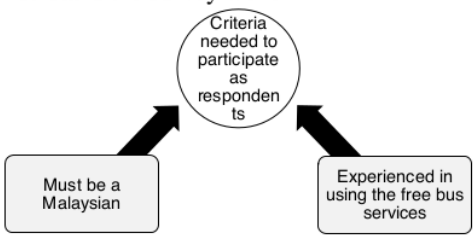

Figure 1. Criteria needed to participate as respondents

Analysis Method

In this study, data processing was involved where converting the survey responses into a format that is able to be edited to generate any statistical analysis. Such processes include data entry, editing, coding, and monitoring the entire data processing process. In recent decades, the ability to improve and enhance the techniques of data processing can be done with the help of advanced technologies [41]. Therefore, data processing was done with the help of Microsoft Excel. Analysis such as frequency, correlation, t-test and regression model were then fulfilled by using SPSS ver-26. Before running the correlation analysis, the Kolmogorov-Smirnov test was applied first in this research in order to validate the normality of the continuous data obtained for sample size more than 50 [42]. As shown in Table 4, the Kolmogorov-Smirnov values obtained are 0.000 in which all data available are not normally distributed with significance level of less than 0.05 making the non-parametric analysis can be applied. Thus, the correlation analysis that was applied in this study is the Spearman. Meanwhile for t-test analysis, the one sample t-test was applied because the test is a useful tool to compare the data gathered in a single variable from one population [43]. The test does not applicable to identify the relationship between two variables. As for regression analysis, the linear regression was also used to investigate the strength of predictors [44], [45]. In this study, predictors act as independent variable (passenger expectation) to predict the dependent variable (passenger satisfaction).

Table 4. Summary value for Kolmogorov-Smirnov coefficient in normality test

Section	Kolmogorov-Smirnov Sig.
A	.000
B	.000
C	.000

RESULTS AND DISCUSSION

Table 5 shows the result of passengers' demographic background in the two states, Johor and Klang Valley. The result shows some similarities in all demographic items where the same groups of passengers dominate the highest amount of frequency. This shows that in both states, female passengers, aged below than 20-year-old, single passengers, SPM holders, students, have no income, owns no motorised vehicle and only used the service sometimes in a week are keen to use the free bus service. However, it is an exception for driving license ownership. This is because in Johor, most of the passengers have no driving license (209) meanwhile in Klang Valley, most passengers have driving license (116).

Table 5. Demographic background of passengers

Demographic item	Variation	Frequency	
		Johor	Klang Valley
Gender	Male	136	72
	Female	239	111
Age	<20	208	112
	21-30	74	53
	31-40	13	6
	41-50	27	6
	51-60	16	1
	>61	37	5
Marital status	Single	272	166
	Married	84	16
	Single father/mother	19	1
Education level	No	22	4
	PT3/PMR/SRP	103	1
	SPM	124	60
	STPM/Certificate/Diploma	87	58
	Degree/Master	39	58
	PhD	0	2
Occupation	Private	76	28
	Government	24	8
	Self-employed	14	4
	Student	234	128
	Others	27	15
Income level (RM)	No income	258	79
	<1000	43	58
	1001-1500	16	5
	1501-2000	28	4
	2001-2500	2	8
	2501-3000	11	8
	3001—3500	6	9
	>3501	11	11
Driving license ownership	No	209	67
	Yes	166	116
Vehicle ownership (motorized)	No	220	109
	1	109	53
	2	35	11
	>3	11	10

Frequency of using	Sometimes	167	147
	1-2 days/week	53	19
	3-4 days/week	51	17
	>4 days/week	104	0

Mean Score Analysis of Satisfaction Level Between Passengers in Johor and Klang Valley

Assessing the mean score analysis in this study allows to differentiate the mean between categories or circumstances. In this study, the mean score analysis of the service quality factors was done in order to compare the mean between the two states, Johor and Klang Valley making it possible to rate the satisfaction level among passengers. Table 6 shows the result Mean score analysis based on the 5-point Likert-scale question. As referred to Hamzah et al. [46], the mean score values or Johor and Klang Valley all can be labelled as high and very high mean scores. For Johor, the mean score values ranged from 3.6613 to 4.2134 with information provision as the lowest and comfort as the highest mean score value. However, the result actually varies for Klang Valley. The lowest mean score value is by 3.6634 for responsiveness factor meanwhile the highest mean score value is by 4.1355 for comfort factor.

Table 6. Mean score analysis result of service quality factors in Johor and Klang Valley

Service quality factor	Johor (N = 375)			Klang Valley (N = 183)		
	Mean	Std. Dev	Rank	Mean	Std. Dev	Rank
CF	4.2134	0.66193	1	4.1355	0.69339	1
R	3.8523	0.83008	6	3.6634	0.82457	8
CP	3.9620	0.90862	4	3.7678	0.82168	5
FAC	3.9141	0.79799	7	3.7898	0.86483	4
SF	4.0699	0.80859	3	3.9257	0.82312	2
SPD	3.9269	0.87391	5	3.7157	0.86574	7
TS	4.1049	0.91460	2	3.9091	0.91600	3
IN	3.6613	0.92660	8	3.7527	0.89948	6

Correlation Between Socio-Demographic Factor Between Satisfaction Level

Spearman correlation was carried out to investigate the relationship between independent and dependent variables. The sign of the correlation coefficient shows the direction of the correlation while the absolute value of it indicates the strength of the association between the two variables. The correlation strength is then referred to Senthilnathan [47]. Table 7 provides the results of the correlations between the independent and dependent variables for Johor and Klang Valley. In Johor, for gender dependant variable, the Spearman coefficient all show that the value obtained are less than 0.1 and mostly approximate to zero coefficient. This inherits that gender and all service quality factors have no correlation at all. However, it can be seen that all correlation coefficient values are positive and achieved coefficient range from 0.153 to 0.311 (very low to low), which implies all the independent variables (except facility and information) are positively related to the dependent variable (age and marital status). For dependent variable such as education level and occupation, only independent variable of comfort and responsible shows the result of coefficient value for more than 0.1. Although the values obtained are considered as very low, however, the correlation still happens between them. For income level, only two independent variables (responsiveness and ticketing system achieved coefficient value of more than 0.1. But, the coefficient value for ticketing system is negatively correlated which drives that the lower income groups are more satisfied with the

ticketing system. This also applies to dependent variable (driving license ownership) and independent variable (ticketing system), and, dependent variable (vehicle ownership) and independent variable (comfort, safety, speed and ticketing system). lastly, for frequency of using the free bus service, only for service quality factor did not achieve coefficient value of more than 0.1 which include responsiveness, capacity, speed and information provision.

However, as shown in Table 7, the result of Spearman correlation for Klang Valley varies from Johor. Overall, result exhibited that, low correlation between dependent and independent variable found in the analysis. the highest coefficient captured was -0.235 between marital status and facility. Although the study makes the assumption that demographic variables like age, gender, income, education, and occupation directly affect satisfaction levels, this hypothesis was disproved when the analysis's results revealed that these variables actually mediate the effects of other variables like characteristics of the quality of the services. Additionally, the study makes the assumption that characteristics of service quality, such as comfort, responsiveness, capacity, facility, safety, speed, ticketing system and information provision have a greater influence on passenger satisfaction than demographic variables. The study also notes that the context and location of the study between Johor and Klang Valley may have impact on satisfaction level (significant difference as presented in Table 8) due to various reasons contributed from norms and culture between states. However, this is not inclusive in this study.

Table 7. Spearman correlation analysis result

Demographic item	**Spearman coefficient**							
	CF	**R**	**CAP**	**FAC**	**SF**	**SPD**	**TS**	**IN**
Johor (N = 375)								
Gender	.042	.013	.038	-.031	.018	-.071	.033	-.145**
Age	.244**	.279**	.311**	-.034	.119*	.237**	.162**	-.092
Marital status	.153**	.216**	.252**	-.074	.116*	.257**	.170**	-.086
Education level	.112*	.100	.051	.067	-.014	.009	-.052	.065
Occupation	-.115*	-.130*	-.050	.022	.012	-.033	-.051	.029
Income level	.047	.112*	.028	.006	-.007	-.001	-.101	.068
Driving license ownership	-.022	.004	.022	-.049	-.056	-.044	-.192**	-.055
Vehicle ownership	-.158**	-.022	-.094	-.065	-.152**	-.110*	-.186**	.031
Frequency of using	.138**	.065	.072	.120*	.161**	.082	.169**	.001
Klang Valley (N = 183)								
Gender	.030	.032	.055	.114	.012	-.016	.001	-.069
Age	-.021	-.103	-.023	-.109	-.027	-.076	-.006	-.053
Marital status	-.121	-.185*	-.136	-.235**	-.033	-.114	-.091	-.151*
Education level	.037	-.029	-.011	-.018	-.003	-.025	.077	.039
Occupation	-.036	.001	-.022	.118	.035	.083	-.026	.089
Income level	.000	.053	.003	-.103	.013	.039	.045	.015

Driving license ownership	-.062	-.117	-.144	-.121	-.099	-.074	-.004	-.039
Vehicle ownership	-.099	-.109	-.107	-.175*	-.065	-.058	-.004	-.033
Frequency of using	.010	.065	.086	.095	.025	.008	.033	.091

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 8. Comparison test of passenger satisfaction level between Johor and Klang Valley

State	Service Quality	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
				Lower	Upper
Johor (N = 375)	CF	.000	4.21341	4.1462	4.2806
	R	.000	3.85227	3.7680	3.9366
	CP	.000	3.96200	3.8697	4.0543
	FAC	.000	3.91408	3.8331	3.9951
	SF	.000	4.06987	3.9878	4.1520
	SPD	.000	3.92685	3.8381	4.0156
	TS	.000	4.10493	4.0121	4.1978
	IN	.000	3.66133	3.5672	3.7554
Klang Valley (N = 183)	CF	.000	4.13546	4.0343	4.2366
	R	.000	3.66339	3.5431	3.7837
	CP	.000	3.76776	3.6479	3.8876
	FAC	.000	3.78978	3.6636	3.9159
	SF	.000	3.92568	3.8056	4.0457
	SPD	.000	3.71574	3.5895	3.8420
	TS	.000	3.90913	3.7755	4.0427
	IN	.000	3.75273	3.6215	3.8839

Gap Analysis on Passenger Expectation Versus Real Satisfaction Level Between Johor and Klang Valley

Measuring the expected and real levels of satisfaction with regard to service quality among free bus passengers is the primary goal of the analysis of expectation versus satisfaction level in this study. Real satisfaction is the level of satisfaction a passenger actually feels after using the free bus service, whereas expectation is the quality of service the passenger actually wants or anticipates before using the service. The degree of customer satisfaction or dissatisfaction with the quality of the services is indicated by the difference between expectation and real satisfaction.

Two methods were used to analyse the survey results; gap analysis and descriptive statistics. The higher mean scores of the service quality dimensions in Table 6 indicate that the free bus service in both states had a high degree of customer satisfaction, according to the earlier methodology. However, as shown in Table 9, the latter method demonstrated that, in most cases, the service quality did not live up to the customers' expectations because there was a negative difference in both states between the real and expected levels of satisfaction. With a mean score difference of 1.4%, the passengers in Johor had a smaller gap than those in Klang Valley, where the difference was 3.92%.

Table 9. T-test analysis result to compare passenger expectation and real satisfaction level

Item	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Johor (N = 375)				
STF	0.000	4.24267	4.1739	4.3115
EXP	0.000	4.30299	4.2321	4.3739
Klang Valley (N = 183)				
STF	0.000	3.87295	3.7580	3.9879
EXP	0.000	4.03093	3.9081	4.1538

The graphs in Figure 2 and Figure 3 compare the passenger satisfaction score and the expectation score of the free bus service in Lembah Klang and Johor. A linear regression model was used to analyse the relationship between the two scores. The R-squared values of the model were 0.9862 for Johor and 0.9722 for Klang Valley, indicating an excellent fit of the model to the data. This means that there were some discrepancies between the actual and the predicted scores. The model explained about 98.62% of the variation in the satisfaction score for Johor, while the rest was attributed to other factors or random error. Similarly, the model explained about 97.22% of the variation in the satisfaction score for Klang Valley, while the rest was attributed to other factors or random error.

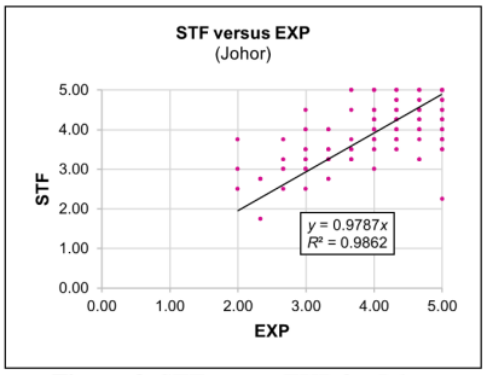

Figure 2. STF versus EXP for Johor

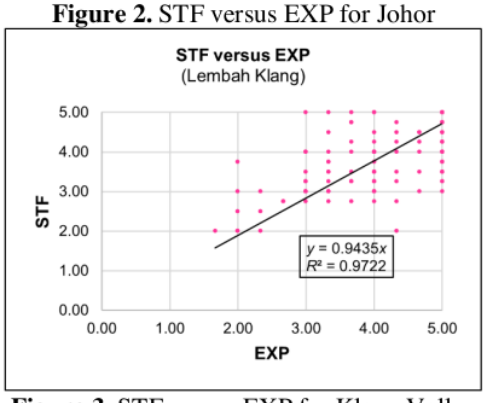

Figure 3. STF versus EXP for Klang Valley

Conclusion

The purpose of this study was to determine how sociodemographic factors affected the degree of passenger satisfaction with free bus service in Malaysia's Klang Valley and Johor. First, this study examined the sociodemographic background of the passengers. Female passengers are more likely to use public transport than male passengers, who typically drive to work and have the privilege of using household vehicles. These findings are consistent with earlier research. In addition, since the free bus service is the only simpler and less expensive way for younger passengers (mainly students) to get from one place to another, they are more eager to use it than older passengers. This study has demonstrated that married individuals are overwhelmingly disinterested in using the free bus service. The finding is also consistent with Sultana's research [50], which found that most married couples choose to use their own cars since having more household members makes utilising a private vehicle more convenient. In addition, it was observed that low-income passengers used the free bus service. Vehicle ownership and driving privileges are closely related to one another. It follows that respondents without a driver's licence do not inherently possess a car. It makes sense that someone without a driver's licence cannot possibly own any motorised vehicles. This is because it is prohibited for someone to drive without a licence, which discourages people from using private automobiles for active transportation like cycling or walking in addition to use free bus service. For instance, those without cars typically use non-motorized vehicles and public transportation.

In addition to the sociodemographic background of the passengers, the findings of the Spearman correlation analysis demonstrate that the passengers' level of satisfaction is not impacted by their sociodemographic features, as indicated by the poor strength of the correlation coefficient. According to Ponrahono et al. [48], the degree of passenger satisfaction is impacted by the economy, environmental impact, timeliness, and quality of service. The results of this study's modest correlation strength also support this finding. This demonstrated once more that people use the free bus service voluntarily, regardless of the diversity in their backgrounds. Despite the fact that the service is free of charge, most travellers in this study are happy with the services they receive. The gap analysis finding does, however, show that for both states—Johor and Klang Valley—the mean difference in genuine satisfaction level is marginally less than expected. Passengers who experience more issues—such as delayed arrivals or heavy traffic—tend to score poorly on satisfaction surveys. Conversely, a higher expectations score suggests that the person is receptive to future modifications and advancements. More complaints will generally translate into lower overall satisfaction. Raising expectations is associated with higher satisfaction levels. Conversely, a higher expectations score suggests that the person is adaptable and willing to make last-minute modifications.

Furthermore, this study illuminates the degree of satisfaction that passengers have with the quality of service provided by free-fare bus operators. High mean ratings across all service quality categories indicated in this study suggest that passengers are satisfied with the quality of the services provided. These encouraging testimonies show how the free-fare bus service satisfies the needs and expectations of its users. In fact, advertising the free bus service can draw in more daily commuters even while the government offers fantastic possibilities for bus operators to keep up their high standards of service. This will help to enhance Malaysia's environmentally friendly travel practices. Because it can be used on already-existing roads, a dependable bus route and timetable system is significantly less expensive to develop. As opposed to rail transit, which is initially more costly in areas without existing lines. The transport sector's role in both rising air pollution and climate change is a cause for grave concern [46]. Nonetheless, environmental issues can be avoided or minimised by putting into practice sustainable transportation strategies (free-fare bus services, in this case).

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