

The Impact of Public Bus Service Quality on the Users' Satisfaction: Evidence from a Developing Asian City

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Abstract. *In a country where there is a high level of car ownership, public buses are considered another mode of transport that is more sustainable. Despite that, there is a very low level of public bus ridership in Malaysia which questions the users' satisfaction with its service quality. This study investigates the role of public bus service quality (tangibility, reliability, assurance, empathy, and responsiveness) by utilizing the SERVQUAL model for users' satisfaction. A sample of 300 questionnaires was obtained from public bus users in Kota Samarahan, Sarawak, Malaysia as the case study area. Using Partial Least Square-Structural Equation Model, the results show that tangibility, reliability, and responsiveness are significant service quality factors that influence users' satisfaction with public buses in the case study area. Of the factors, tangibility is considered the most critical factor that influences users' satisfaction. This study provides imperative knowledge which will be advantageous for stakeholders specifically policy-makers, transport ministries, town planners, local authorities, and service operators in strategizing policies and plans that could encourage the public buses usage.*

Keywords: Public transport, customer satisfaction, service quality, partial-least squares-structural equation model

JEL Codes: R40

1. Introduction

The rising population along with rapid urbanization and economic development has spurred the need for society to travel. In most developed countries, people tend to depend upon public transport, while the travel patterns in many developing countries tend to rely heavily on private transport, either cars or motorcycles. Currently, Malaysia is among the Asian developing country with a high level of car ownership. Car ownership in Malaysia is 450 cars per 1000 inhabitants while in cities are 393 cars per 1,000 inhabitants for Kuala Lumpur and 292 cars per 1,000 inhabitants in Sarawak in 2018. This is lower than Brunei Darussalam (606 cars per 1,000 inhabitants) and relatively higher than Thailand (238 cars per 1,000 inhabitants) (ASEAN Stats, 2018). According to the Malaysia Automotive Institute (2018), the total number of cars registered in Malaysia has increased by 43% from 2010 to approximately 12 million cars in 2016.

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Automobile reliance imposes negative externalities on the society including air pollution, oil dependency, traffic congestion, and traffic accidents (Parry, Walls & Harrington, 2007). Malaysia transportation sector produces 50 million metric tons (Mt) of CO₂ in 2015 with 85.2% accounted from road transportation sector. As a result of high ownership, automobiles accounted for 59% of the emissions (Ghadimzadeh et al., 2015). Hence, a shift to a more sustainable mode of transport could potentially reduce the emissions in the long run. Commuting via public buses is more sustainable than other transportation due to the spacious space and its effectiveness to accommodate more people using bus transport which leads to lesser fuel consumption and anthropogenic pollution compared to private cars (Fillone, Mantalbo & Tiglaio, 2005). The aim is in line with the United Nation's Sustainable Development Goals (SDG 11) on sustainable cities (access to transport and expanded public transport). Currently, the usage of public buses is only 20% which is relatively low in comparison with the target aimed by Malaysia's National Transport Policy (NTP) 2019-2030 of 40% public transport by the end of 2030. The low ridership in public transport is associated with the convenience gained in private transport such as flexibility, comfort, privacy, and speed (Ibrahim et al., 2021). Thompson and Schofield (2007) mentioned that negative perception leads to unsatisfied users commuting using public buses. Public buses should provide high-quality services to meet specific passenger expectations and preferences (Oliver, 1980). Some research exploring the relationship between service quality and user satisfaction implies that the quality of the service has become a factor that affects user satisfaction. Based on Felleson and Friman (2008), satisfaction is the degree of a person's perception formed by the combination of experience and perceptions toward the goods and services. As it is evident that there is very high ownership of personal cars, the motivation of this study is to encourage more people to use public transportation rather than driving their own cars more often. The output of the study would be useful to improve the service quality of the public transport sector in the context of Asian developing countries with high car ownership. Hence, the study is imperative to assist policy-makers in understanding factors that influence users' satisfaction with public transport. This study aims to identify factors that influence users' satisfaction with public transport service quality in Kota Samarahan, Malaysia. Moreover, factors driven by SERVQUAL model are utilized in constructing the conceptual framework used in the study. The paper is organized as follows. Section 2 discusses the literature review of the study. Section 3 presents the adopted methodology. Section 4 explains the findings of the study and section 5 presents the discussions of the findings. Finally, section 6 concludes the study along with the limitation and future suggestions.

2. Research Elaboration

Past literature has shown that many studies are being conducted to assessing the public transport service quality. However, it is noted that most studies have focuses merely on developed countries or developing countries in general. This study specifically concentrates on investigating the role of service quality in public transport in a developing Asian country with a high level of car ownership in the Borneo Island context. Borneo is the third-largest island in the world which is divided into three economic regions; Sarawak and Sabah which belongs to Malaysia, Kalimantan which belongs to Indonesia, and Brunei. Past literature on developing countries that have been conducted in Asian countries include studies by Zakaria et al. (2010) which in Lembah Bujang Area in Kedah state of Malaysia and Ueasangkomsate (2021) in 16 large provinces in six regions in Thailand. Zakaria et al. (2010) denoted that while public transit is updated and located in metropolitan areas, service quality is still low and poorly implemented which eventually affect the ridership. Ueasangkomsate (2021) further adds that output from measuring the public transport service quality based on SERVQUAL will lead to improvement in service quality in accordance with local public road passengers' specifications. The SERVQUAL paradigm is growing in prominence and has been widely developed as a model for explaining user experiences. This model was designed to assess customer satisfaction and to

investigate the elements of service quality. Customers' or users' opinion of the performance of the services offered is heavily influenced by service quality. According to Parasuraman, Zeithaml and Berry (1988), the quality of services provided to customers is determined by their assessment of the product or service's advantages. The gap between user expectations and service perceptions was regarded as service quality in the study. The quality of service is also known as the "disconfirmation" paradigm, which is developed from the user satisfaction model and compares the expected output from the client to the actual performance. According to Grönroos (1996), service quality is split into three output dimensions: service quality, technical quality, and the mental structure of the picture. Measuring consumer satisfaction with public transportation services is a subject of much interest in the transport sector. Past literature has shown that there is a link between service quality and consumer happiness in public transportation (Bielen & Demoulin, 2007; Beirão & Sarsfield Cabral, 2007; Felleson & Friman, 2008; Budiono, 2009). The actual buildings, equipment, and staff required for the service are referred to as tangible. Tangible refers to one's appearance, and physical amenities such as layout, decorating, presentation, and equipment, according to Parasuraman et al., (1988). The research proposed a physical facility for assessing public transportation service quality in which the physical appearances, including those of the state of the interior in public transportation, are one of the indicators of service quality (Zakaria et al., 2010). Customers infer the level of service depending on their comprehension of physical aspects, according to Saadat, Tahbet & Mannan (2018). Although the service is intangible, it requires consumers to participate in the process since the existence of tangible or physical aspects has a substantial impact on the impression of service quality (Bitner, 1992). According to Rushton and Carson (1989), there are two categories of tangibles: tangible surrogate characteristics and tangible benefits. The tangible equivalent refers to the environment in which the intangible service is provided, whereas tangible advantages are the actual benefits that the consumer receives as a result of the service. As a result, tangible is a crucial feature for ensuring that customers are satisfied with the services offered.

Consumers are more content with dependable and accessible transportation, which is one of the most important variables in customer satisfaction (Cavana, Corbett & Lo, 2007). Customers' expectations, wishes, and perceptions of their time are favorably impacted by the regularity and timeliness of public transportation, which comes on time as scheduled and satisfies customer expectations, and desires, and positively affects customers' perceptions of their time. Reliability, as per Parasuraman et al., (1988), relates to the capability to deliver services as promised and accurately. According to McKnight, Pagano & Paaaswell (1986), dependability is defined as the capacity to provide transportation services with consistency and timeliness. Dimensions of service quality such as arriving at a destination, travel length, communication, and route schedules are vital to examine. Furthermore, according to Bielen and Demoulin (2007), the arrival time of transportation to the station is a determinant of consumer satisfaction. Consumers will be delighted if public transportation is dependable and convenient. Long wait times, on the other hand, result in dissatisfied customers. In other words, unreliability in public transportation affects passenger perceptions of delays, limited access, and long wait times, causing existing and future consumers to abandon such services due to their worry and aggravation Bates et al. (2001). As a result of a loss of customer confidence and faith in public transportation, the number of existing passengers will decrease.

According to Leong, et al., (2015), responsiveness is a critical part of the SERVQUAL dimension that influences the speed with which consumers receive high-quality service. The readiness to assist clients and give prompt service without wasting their time is referred to as responsiveness. Responsiveness is defined as employees' willingness to deliver services in a timely way and workers' willingness to help. For instance, time management has an impact on customer satisfaction when it comes to waiting periods for the bus, whether they are short or lengthy. Shorter waiting time leads to satisfaction, nevertheless, when the waiting time is excessive, the consumer is left unsatisfied. Customers who are dissatisfied with the level of service

offered, according to Grönroos (2007), may have a detrimental impact on service delivery. The responsiveness of excellent services in public transportation reflects the mindset of drivers and employees. The quantity of customer care and the firm's unique attention to the client is measured by empathy. Customer satisfaction has been more closely associated with empathy than other aspects, according to Sabir, et al., (2014). Empathy relates to a company's capacity to be reachable and its focus on consumers, making customers feel more appreciated and unique. Accessibility, improved communication, greater understanding, and special attention to the client are all part of the empathy element (Raspor, 2010). Empathy aspects are alert to communication circumstances, demonstrate nice conduct, and comprehend consumer needs and wants, according to Ennew, Waite & Waite (2013). Empathy's capacity to care for its clients is based on personalized attention, particularly while offering services. According to Parasuraman et al., (1985), understanding how consumers feel is superior to rivals since extra attention given to customers affects customer satisfaction. Empathy incorporates security, safety, approachability, and a desire to satisfy client demands (Kozerska, 2007). Buttle (1996) defines assurance as personnel's expertise and civility, as well as their capacity to give consumers trust and confidence. Similarly, Zainal et al., (2010), define assurance as pleasant and friendly people who are informed and eager to help, as well as access to all information and a well-organized management group. Also, according to Parasuraman, et al., (1988), assurance is the ability of personnel to instill trust and a firm belief in client pleasure via their knowledge. It indicates that the service quality assurance aspects demonstrate personnel efficiency, competence, and kindness, as well as the capacity to develop client confidence. If staff, for example, are unable to give superior service or fail to create trust and confidence, the firm will suffer. As a result, assurance increases client trust and confidence in the firm's capacity to provide service.

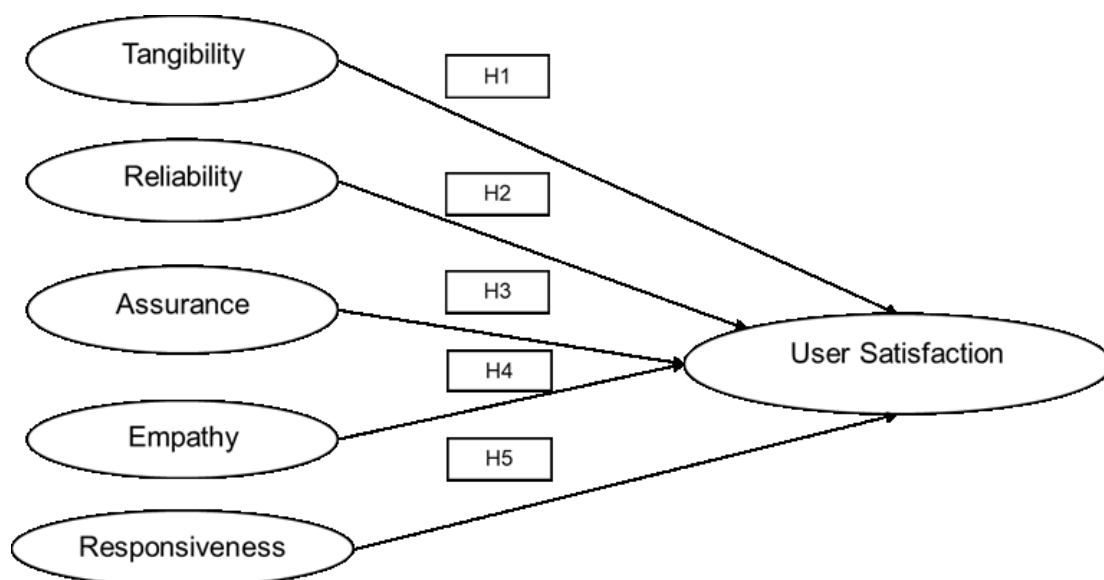


Figure 1: Conceptual Framework

Figure 1 presents the conceptual framework in accordance with the literature review. The dependent variable is user satisfaction and the independent variables dimension of service quality include tangible,

reliability, assurance, empathy, and responsiveness. The following hypotheses are presented to answer the objective of this study, which is to examine the user satisfaction with the service quality of public buses in Kota Samarahan, Sarawak.

Hypothesis 1: There is a significant relationship between tangible and user satisfaction.

Hypothesis 2: There is a significant relationship between reliability and user satisfaction.

Hypothesis 3: There is a significant relationship between assurance and user satisfaction.

Hypothesis 4: There is a significant relationship between empathy and user satisfaction.

Hypothesis 5: There is a significant relationship between responsiveness and user satisfaction.

3. Research Methodology

3.1. Respondents and procedure

The questionnaire has been distributed to public transport users in Kota Samarahan. The respondents are users who have experienced commuting via public bus transport in Kota Samarahan. The distributed questionnaire has collected about 300 respondents within three weeks. The date of distribution was from the 15th of March 2020 to the 5th of April 2020.

3.2. Measurements

The study applies SERVQUAL to study user satisfaction toward service quality of public buses in Kota Samarahan. All constructs are measured using a five-point Likert scale ranging from 1-Strongly disagree to 5-Strongly agree. Table 1 shows the constructs and items being used for the study.

Table 1: Constructs and items included in the survey.

Constructs		Items
Tangible	T1	Driver's appearance is neat and smart.
	T2	Bus visually appealing materials with modern facilities.
	T3	Bus conditions are clean, hygienic, and comfortable.
	T4	Physical state of vehicles is well maintained and adequate.
Reliability	R1	Bus punctuality at each destination.
	R2	Availability of timetables and service information.
	R3	Information panels on terminals and bus stops.
	R4	Bus companies maintain error-free records.
Assurance	AS1	Feeling safe and secure throughout the journey.
	AS2	Drivers were always polite and friendly.
	AS3	Bus driver has sufficient driving skills.
	AS4	The staff has in-depth knowledge of their work.
Empathy	EM1	Bus companies understand the user's specific needs and requirements.
	EM2	Operating hours are convenient and efficient.
	EM3	Easy accessibility of bus network and services.
	EM4	The employees deal with users with care.
Responsiveness	RES1	Employees are very responsive and willing to help users.

	RES2	The courtesy and efficiency of employees.
	RES3	The notice of the availability of services and price changes.
	RES4	Drivers communicate clearly and act professionally.
User Satisfaction	US1	I am overall satisfied with the service offered by bus transport in Kota Samarahan.
	US2	I am satisfied with the convenience of the bus transfer.
	US3	The current service of bus transport meets your overall expectation.
	US4	I feel satisfied with the bus fares in Kota Samarahan.
	US5	I am satisfied with the information on the bus service schedule and routes.
	US6	I am satisfied with the bus employee's attitude.

3.3. PLS-SEM

The study applies PLS-SEM to test the proposed model depicted in Figure 1. PLS-SEM is selected as the study involves a non-parametric model and the objectives are prediction-based. For that purpose, the SmartPLS 3.0 developed by Ringle et al. (2015) is utilized. PLS-SEM involves a two-step procedure which is the assessment of the measurement model and the assessment of the structural model. The fit indices for the assessment for indicator reliability, internal consistency, convergent validity, and discriminant validity. The assessment of the structural model involves hypothesis testing which is presented in Figure 1.

4. Results and Discussion

4.1. Descriptive Analysis

Of the total of 300 respondents, the majority of the respondents represent about 52 percent of females and the rest are male respondents merely about 48 percent in comparison with total. Besides that, the result shows that 75 percent of the respondents are between the age range of 21 – 30 years old, while 14.3 percent are 18 – 20 years old, 4.2 percent represent respondents in the age range of 31 – 40 years old, followed by 4.1 percent of respondents for the age range of 41 – 50 years old and the remaining 2.2 percent represent by respondents with age above 51 years old. Furthermore, ethnicity distribution shows that 63.7 percent of respondents are Malay, followed by Iban which is 15.7 percent, Chinese with 10 percent, 7.3 percent from other ethnic, and the remaining 3.3 percent of respondents are Indian. In marital status, most of the respondents are single 73.7 percent, and the remaining of 26.3 percent respondents are married. Next, the majority of the respondents possess a Bachelor's Degree with 53.7 percent as their highest education background. There is only 19.7 percent of the respondents are diploma holders, while STPM/A Level holders are 12.3 percent and it followed by SPM holders with 6.3 percent of respondents. The rest of the respondents are Master's Degree levels with 5.3 percent and Ph.D. levels with 2.7 percent. For the current profession, most of the respondents are students with 58.3 percent and is followed by 23.3 percent of employees. Meanwhile, 17.3 percent of respondents are from other professions that represent professions like housewives, unemployed, and business person. The remaining respondents are retirees with only 1 percent. As for the household average monthly income segment, the majority of the respondents 35.3 percent have an income between RM2001 to RM2000. Those with income below RM2000 are represented by 30 percent, followed by 27 percent are having an income of RM3001 to RM4000, 6.3 percent with income between RM4001 to RM5000 and 1.3 percent have a high income between RM5000 and above.

Table 2: Respondent's Profile

Demographic Variable	Categories	Frequency (N: 300)	Percentage (%)
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Gender	Male	144	48.0
	Female	156	52.0
Age	18 – 20 year old	43	14.3
	21 – 30 year old	225	75.0
	31 – 40 years old	13	4.2
	41 – 50 years old	12	4.1
	51 and above	7	2.2
Ethnicity	Malay	191	63.7
	Chinese	30	10.0
	Indian	10	3.3
	Iban	47	15.7
	Other	22	7.3
Marital Status	Single	221	73.7
	Married	79	26.3
Educational Level	SPM	19	6.3
	STPM	37	12.3
	Diploma	59	19.7
	Bachelor Degree	161	53.7
	Master's Degree	16	5.3
	PHD	8	2.7
Current Profession	Student	175	58.3
	Employee	70	23.3
	Retired	3	1.0
	Other	52	17.3
Household average monthly income (RM)	<RM2,000	90	30.0
	RM2,001 – RM3,000	106	35.3
	RM3,001 – RM4,000	81	27.0
	RM4,001 – RM5,000	19	6.3
	>RM5,001	4	1.3

4.2. Respondents General Travel Information

The respondents were asked about their willingness to ride public bus transportation on daily basis. Out of all 300 respondents, 81.7 percent of the respondents are those who are willing to ride public bus transport on daily basis, meanwhile 18.3 percent of the respondents would not willing. In terms of the use of public bus transportation in a week, 29 percent of respondents used bus transport by 2 times. In contrast, 28.7 percent of respondents indicated less than 2 times usage of public transport in a week. Also, 24 percent of respondents use public bus transport 3 – 4 times, 16 percent are within 5 – 7 times, and followed by 2 percent of respondents that use bus transport 8 – 10 times a week. The remainder with only 0.3 percent using the bus transport more than 10 times. About the distance from the city center, 87.1 percent of the respondents stated a distance between 0 – 10 km, 10 percent are 11 – 20 km, 1.6 percent are 21 – 30 km and the rest 0.9 percent of respondents indicated their distance is more than 40 km. As for the distance to the nearest public transit, the result shows that the majority of respondents 98 percent stated a distance between 0 – 10 km. This is

followed by 1.3 percent between 11 – 20 km and only 0.6 percent of respondents with a distance between 21 – 30 km. In addition, when the respondents were asked about the main reason for their journey using the bus, most of the respondents selected education (49.7 percent) as their main reason. Then, followed by work with 17.0 percent, personal businesses are 13.7 percent, and 10 percent of respondents selected shopping/entertainment as the main reason. While the remaining respondents selected leisure/recreation are 9.3 percent and other reasons with 0.3 percent. Last but not least, the respondents also being asked about the major problem with bus transportation and it indicated that bus schedule was the most chosen problem with 37 percent of respondents. This is followed by traffic jams with 25.7 percent, safety with 19.3 percent, and cost with 18 percent.

Table 3: Respondents' General Information

Descriptions	Categories	Frequency (N: 300)	Percentage (%)
Are you willing to ride a public bus on daily basis?	Yes	245	81.7
	No	55	18.3
How often do you use public bus transport in a week?	2 times	87	29.0
	3 - 4 times	72	24.0
	5 - 7 times	48	16.0
	8 – 10 times	6	2.0
	More than 10 times	1	0.3
	Less than 2 times	86	28.7
Distance from the city center. (KM)	0 – 10 km	262	87.1
	11 – 20 km	30	10.0
	21 – 30 km	5	1.6
	31 – 40 km	0	0
	41 and above	3	0.9
Distance to the nearest public transit. (KM)	0 – 10 km	294	98.0
	11 – 20 km	4	1.3
	21 – 30 km	2	0.6
	31 – 40 km	0	0
	41 and above	0	0
What is the main reason for your journey by using the bus?	Education	149	49.7
	Work	51	17.0
	Shopping/Entertainment	30	10.0
	Leisure/Recreation	28	9.3
	Personal Business	41	13.7
	Other	1	0.3
What is the major problem with bus transportation today?	Traffic Jam	77	25.7
	Bus Schedule	111	37.0
	Safety	58	19.3
	Cost	54	18.0
	Other	0	0

4.3. Assessment of Measurement Model

Table 4 presents the measurement model outcome for the study. The initial items for the model are presented in table 1. Firstly, the indicator reliability was tested to identify the relationship between the reflective latent variables and their respective constructs. The outer loadings for each item with respect to each construct range between 0.713 to 0.947 which are acceptable. Some items were removed from table 1 to improve the adequacy of the model. The study includes Cronbach alpha and composite reliability to measure the internal consistency reliability. All constructs indicate a value greater than 0.7 which is satisfactory. Convergent validity measures the “*extent to which a construct converges in its indicators by explaining the items’ variance*” (Sarstedt, et al., 2014) using Average Variance Extracted (AVE). Table 4 shows that all constructs are above the 0.50 threshold value indicating the condition of sufficient convergent validity whereby at least 50% of the variance of each item is explained by its constructs. Discriminant validity measures the extent different constructs differ from one another. Table 5 shows that the square root of AVE for a construct is greater than correlations between the construct and other constructs in the model.

Table 4: Measurement model

Construct	Items	Loadings	Cronbach Alpha	CR	AVE
Tangible	TA1	0.747	0.819	0.825	0.542
	TA2	0.737			
	TA3	0.746			
	TA4	0.713			
Reliability	RE1	0.840	0.794	0.763	0.618
	RE3	0.728			
Assurance	AS1	0.833	0.693	0.843	0.729
	AS2	0.873			
Empathy	EM3	0.807	0.729	0.865	0.763
	EM4	0.935			
Responsiveness	RES1	0.883	0.805	0.912	0.838
	RES2	0.947			
User satisfaction	US2	0.772	0.858	0.843	0.642
	US3	0.857			
	US4	0.772			

Table 5: Discriminant Validity

	Assurance	User Satisfaction	Empathy	Reliability	Responsiveness	Tangible
Assurance	0.854					
User Satisfaction	0.112	0.801				
Empathy	0.076	0.21	0.873			
Reliability	0.189	0.256	0.114	0.786		
Responsiveness	0.133	0.262	0.444	0.037	0.916	
Tangible	0.200	0.342	0.138	0.561	0.132	0.736

4.4. Assessment of Structural Model

The results for the structural model are presented in Figure 2. The PLS algorithm was run using several 5,000 bootstrapping to examine the path coefficient significance. This is to establish the determinants of user satisfaction towards public bus service quality. The model has an R value of 0.178 which indicates that there is a moderate relationship between the dependent variables towards the dependent variable. Out of the five hypotheses, two of the hypotheses are not supported (assurance and empathy). Tangible shows the highest standardized coefficient ($\beta = 0.249$, $p < 0.10$). This is followed by responsiveness ($\beta = 0.189$, $p < 0.10$) and reliability ($\beta = 0.098$, $p < 0.10$).

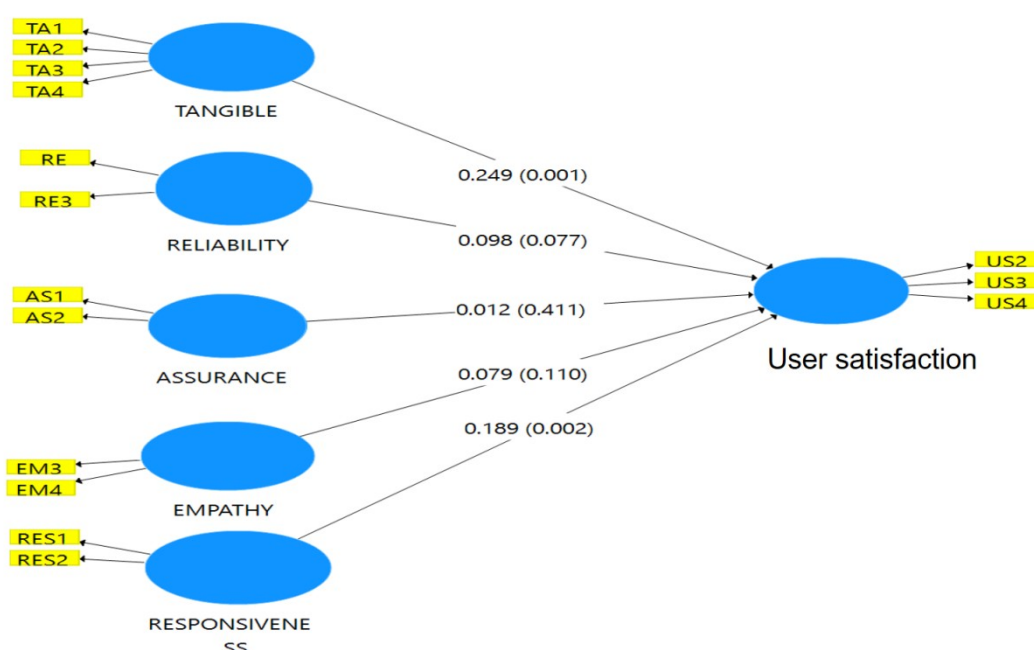


Figure 2: Path analysis results.

Table 6: Hypothesis Testing

	Hypothesis	Result
H ₁	There is a significant relationship between tangible and user satisfaction.	Supported
H ₂	There is a significant relationship between reliability and user satisfaction.	Supported
H ₃	There is a significant relationship between assurance and user satisfaction.	Not supported
H ₄	There is a significant relationship between empathy and user satisfaction.	Not supported
H ₅	There is a significant relationship between responsiveness and user satisfaction.	Supported

5. Discussions of the Results

The objective of this study is to investigate the determinants of user satisfaction by examining the role of tangibles, reliability assurance, empathy, and reliability in public bus service quality in Kota Samarahan, Sarawak. The study was based on the SERVQUAL model in which the dataset was acquired via a self-administered survey by utilizing PLS-SEM. The model was validated and assessed using the assessment of measurement and structural model. The outcome of the study denotes that tangibles, responsiveness, and reliability are significant in explaining the users' satisfaction with public bus service quality in Kota

Samarahan, Sarawak. Tangibles are considered the strongest predictor of user satisfaction. This is congruent with studies by Pérez et al., (2007) and Zakaria et al., (2010).

The outcome of the study shows that users perceived tangibles of public buses for instance the facilities, cleanliness, comfort, and maintenance as main indicators of service quality satisfaction. Local service providers should ensure that these aspects are continuously monitored and improved as these qualities can attract more users and retain current public bus users. This is followed by responsiveness which is aligned with the findings by Pérez et al., (2007) and Susnienė (2012). Responsiveness and efficiency are qualities deemed necessary by employees as important inputs to service production. Reliability is also imperative to explain users' satisfaction. The outcome confirms support from past study by Eboli and Mazzulla (2007) and Chou et al., (2014). Generally, time is the main factor when selecting the mode of transport. A person who is commuting for work purposes would opt for the shortest travel time and punctuality. Inadequate travel information may hinder a person to commute using a public bus as that may affect the journey to reach their main destination. An interpretation of these findings explains that, a more concerted effort should be made on improving the tangibles, responsiveness, and reliability in order to achieve greater user satisfaction with public bus quality.

6. Conclusion

The policy implication denotes several implications to policy-makers in order to enhance user satisfaction by identifying factors that could retain current users and attract more users to commute using public transport. Tangible is identified as the main determinant of public bus user satisfaction. Hence, policy-makers and service providers should emphasize providing high-quality tangibles or infrastructure such as upgrading the public buses with facilities including designated seats (particularly for the elderly, disabled, and pregnant women), sufficient handrails and grip straps, and free wireless internet. Cashless payment should be implemented at each bus using local e-payment methods for example S Pay Global and Touch N Go. In terms of safety and security, closed-circuit televisions (CCTVs) should be installed by the service providers to monitor the passengers on the buses and also at the bus stops. Public bus stops should be upgraded to enhance safety and security. This includes installing adequate lights covering the entire bus stop, particularly for passengers commuting at night, sufficient waiting area for people, and panic or emergency buttons in the case of emergency. Policy-makers may also consider solar-based panels at the bus stops as part of the energy saver initiative. Public buses should be in a clean and convenient state by frequent cleaning or sanitizing, providing sufficient bins for litter (at buses and bus stops) as well as enforcing rules and regulations for passengers. Others may also include pedestrian crossing in the vicinity of the bus stop as well as visible road signs indicating the bus stops and pedestrian crossings.

In terms of reliability, an application system (app) is suggested to enrich user satisfaction while taking public buses. Considering that there is a high level of mobile-phone users in Malaysia, the usage of a mobile-friendly app would ease the user's travel journey through online or cashless payment, as well as real-time bus tracking and schedules. In addition, information on public buses' arrival and departure should be displayed appropriately at the respective bus stops via a real-time LED display. Ridership may also be increased by a punctual and frequent bus schedule. Based on the study, the responsiveness of public bus employees is deemed imperative to user satisfaction. It is noted that drivers' skills and behavior are correlated with possible traffic accidents (Zhang, et al., 2019). To transform the public bus services, a few managerial adjustments include improving current practices which focus on enhancing the knowledge on safety through staff training or workshops and also introducing a reward-based system. The limitation of this study includes the scope of this case study area which only focuses on Kota Samarahan city in Sarawak state, Malaysia. More studies should be conducted to include areas in other parts of Malaysia or compare them with other Asian developing cities (E.g. countries in the Borneo region). In addition to that, the framework of this study utilized the SERVQUAL model. Further studies should incorporate other factors or variables which extend the scope of SERVQUAL. In summary, service quality provision that fulfilled the users' expectations would encourage people to shift from private transport to public bus usage.

7. Acknowledgments

The authors acknowledge the financial support from Universiti Malaysia Sarawak (UNIMAS) with Project ID: F01/PARTNERS/2118/2021. All remaining flaws are the responsibility of the authors.

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Manuscript received: 01.03.2022

Manuscript received in revised form: 26.05.2022

Manuscript accepted: 26.06.2022