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Uncovering the Heartbeat of Public Transport in Klang Valley: Is your journey satisfying?

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Abstract
This paper explores the essential elements of public transport service quality to enhance commuter preferences in Klang Valley, Malaysia. It specifically investigates reliability, assurance, tangible aspects, and responsiveness as key dimensions impacting customer satisfaction while riding on public transport among the urban residents in the Kuala Lumpur urban area. The study's main aim is to examine relationships among these dimensions and their overall influence on customer satisfaction using quantitative methods, with multiple linear regression analysis and convenience sampling used. The research seeks to capture a representative sample size to provide insights for targeted improvements in the overall public transport system.

Keywords: Public Transport; Transport Service; Service Quality; User Satisfaction

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1.0 Introduction

In the rapidly expanding urban landscape of Klang Valley, the surge in population growth and urbanization emphasizes the pivotal role of land transportation in facilitating economic and social activities. Land transportation, recognized as a crucial enabler of mobility (Ibrahim et al., 2020), and direct access to resources, products, and markets, significantly contribute to improving the quality of life (Eboli & Mazzulla, 2021). With the escalating demand for transportation due to the burgeoning population, there is a pressing need for efficient and reliable public transportation (Laisak et al., 2021). Public transport, including buses, railroads, taxis, and subways (Mani & Zainuddin, 2021), emerges as a vital component, catering to diverse passenger needs and ensuring seamless travel within urban and rural areas. Despite the substantial development of public transportation networks, private vehicles (Borhan et al., 2019) remain the preferred choice for most Malaysians, driven by factors such as flexibility, privacy, comfort, and speed. This preference has led to a significant increase in private vehicle ownership, resulting in challenges such as traffic congestion, environmental degradation, energy consumption, road infrastructure damage, and heightened road accidents.

Bernama (2021), reported that drivers in Kuala Lumpur lose approximately 126 hours annually, equivalent to five days and six hours, due to rush hour traffic. Incidents like road accidents or flash floods further exacerbate the situation, leading Malaysian drivers to spend over 1.5 hours on average in traffic jams. Despite government initiatives, such as the My30 travel pass to encourage public

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transportation, Malaysians persist in favoring private vehicles, whether through ownership or e-hailing services. This underscores the enduring challenge of shifting commuter preferences toward public transportation. In response, a research study aims to evaluate the satisfaction of current public transport users in urban areas, specifically in the Klang Valley. Therefore, the research aims to investigate the overall satisfaction level of current public transport users through the measurement of the service characteristics provision using current public transport service in urban areas. The main objective is to determine the effectiveness of service quality dimensions (reliability, assurance, tangible and responsiveness) towards the overall satisfaction indication while riding on public transport service in Klang Valley.

1.1 Main issues of investigation

Despite the well-established public transport network in cities like Kuala Lumpur, a mere 20% of passengers opt for it, while a staggering 80% favour private vehicles (Irtema et al., 2018). The scenario is woven with complaints echoing since the 1990s, a chorus lamenting the shortcomings of Malaysia's public transport. Delays, poorly designed interchanges, and unfriendly drivers form the crux of discontent. Public bus services, battered by road traffic expansion, witness declining quality, pushing commuters towards the comfort of private vehicles (Baharum & Haron, 2020).

As the wheels of private cars dominate the roads during peak hours, bus services falter in the face of relentless traffic jams. Rail transport, once a lifeline, witnesses a stark decline in passengers, reflecting a broader trend. Amidst these challenges, a lack of trust and confidence emerges among Klang Valley citizens, with a mere 5% opting for public transit, as revealed by the Commission of Public and Land Transport (Mani & Zainuddin, 2021).

Reluctance prevails, driven by a series of inconveniences and difficulties faced by commuters. Negative sentiments grow as low-quality services fail to meet expectations, pushing the majority towards the reliability of private vehicles. The dwindling public transport usage becomes a pressing concern, unveiling a narrative where perception shapes motivation and trust among urban riders. In this urban environment, the passenger's perception of service quality stands as the cornerstone, defining the overarching service level that steers the trajectory of transportation choices in Klang Valley (Choy & Salleh,2022).

2.0 Review of Literature

2.1 Service Quality Method Model

This study is grounded in the Service Quality Method Model (SERVQUAL), which aims to assess service quality and customer satisfaction. Customer satisfaction is defined as the level of contentment customers experience with a company's products or services, predicting business growth and overall customer experience. The study focuses on the five dimensions of the SERVQUAL theory—assurance, reliability, responsiveness, tangible, and empathy, but specifically explores four attributes: reliability, assurance, tangible, and responsiveness (Jusufbašić & Stević, 2023).

2.2 Customer Satisfaction

In this study, customer satisfaction is the main dependent variable to be tested. Customer satisfaction, as explored by Choy & Salleh (2022) and Isai et al. (2020), is the positive response customers experience after consuming goods or services that meet their requirements and needs. This satisfaction is integral to an operational overall success, directly influencing its sustainability due to repeated action. Efficient services that align with customer expectations contribute to their satisfaction, a concept extensively studied in the public transportation sector. Mapunda (2021) emphasizes the impact of tangible, responsiveness, and reliability in public bus services, while Sam et al. (2018) highlight the substantial influence of reliability and responsiveness of public bus services that could enhance passenger satisfaction. Nor and Rahim's (2021) study in Penang further underscores the critical role of reliability, tangible, and responsiveness in satisfying rail transport passengers. The importance of avoiding poor services is emphasized, as it can lead to customer complaints and tarnish a company's corporate image thus affecting the shift (Isai et al., 2020).

2.3 Reliability

The construct of reliability is the first element of the independent variable to be tested against the satisfaction of the public transport ridership. Reliability in an organization refers to its ability to consistently and accurately deliver promised services, a crucial aspect of business sustainability (Mani & Zainuddin, 2021). A previous study detailed elements measuring reliability, encompassing factors like accurate information provision, punctuality, service frequency, and timely conveyance to the destination (Mani & Zainuddin, 2021). To uphold reliability, transport operators must prioritize customer comfort, build trust, and ensure safety, with employee training playing a pivotal role (Choy & Salleh, 2022). Thus the following hypothesis was proposed:

H_1: The factor of reliability in the public transport service quality influences customer satisfaction.

2.4 Assurance

Apart from the reliability measure, assurance also plays an important role in public transport service. That will make the second element of the independent variable to be tested in this study. Assurance in the service industry is defined by an employee's knowledge, politeness, and ability to inspire trust and confidence. Key factors in assurance include personal safety and facility cleanliness, with effective security systems and knowledgeable staff being crucial (Limna & Kraiwanit, 2022). The hypothesis suggests that high-

assurance services, such as punctuality and cleanliness in public transport, will attract repeat customers (Mani & Zainuddin, 2021). Thus the following hypothesis was developed.

H_2: The factor of assurance in the public transport service quality influences customer satisfaction.

2.5 Tangible

The last factor of service to be evaluated in this study refers to tangibility. The tangibility construct in service normally refers to a firm's ability to showcase its tangible environment and infrastructure (Ali et al., 2018). This includes the physical appearance of workers, equipment, product presentation, uniforms, workplaces, and communication materials, offering customers concrete cues and tangible proof of service quality (Choy & Salleh, 2022). Despite public transport being intangible, its physical aspects significantly shape perceptions of service quality, with cleanliness, employee attire, and the functionality of hardware and software playing crucial roles (Ubaidillah et al., 2022). They have also agreed that providing comfortable services through well-maintained infrastructure is deemed essential for public transit operators which could lead to a higher satisfaction indication by the passengers. Hence the following hypothesis was proposed:

H_3: The factor of tangible in the public transport service quality influences customer satisfaction.

2.6 Responsiveness

This study also discusses the critical elements of responsiveness in public transport services, emphasizing both the willingness and promptness to serve customers as one of the important elements influencing the traveller's satisfaction (Ong, 2022). Timeliness is crucial, as customers are unwilling to endure inefficiency and may resort to private cars, particularly observed in the commuter service in Klang Valley (Ali et al., 2022). Employee responsiveness, demonstrated through quick responses to inquiries and requests, plays a pivotal role in customer satisfaction. The study suggests that public transport services should prioritize responsiveness to enhance customer satisfaction, advocating for investments in employee training (Shamsudin et al., 2020). In the context of Klang Valley, Mani and Zainuddin's (2021) study underscores a significant link between responsiveness and customer satisfaction in Bus Rapid Transit (BRT) services. As such, the following hypothesis was proposed:

H_4: The factor of responsiveness in the public transport service quality influences customer satisfaction.

Following Figure 1. shows the research framework for the study. The model incorporates independent variables—reliability, assurance, tangible, and responsiveness—and a dependent variable, namely customer satisfaction among users of public transport services.

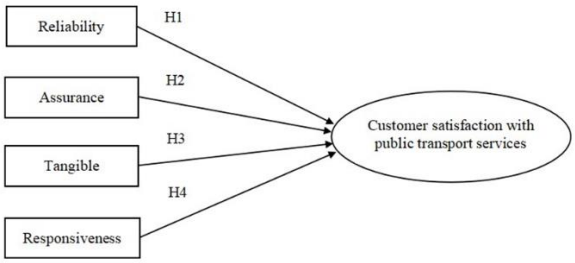

Fig. 1: Research Framework

3.0 Methodology

3.1 Research Design

This quantitative research was adopted in this study based on Ling et al (2023) study which aims to explore the relationships depicted in Fig 1 by employing a research method that focuses on the interactions between independent and dependent variables.The target respondents are public transportation users in Klang Valley, Kuala Lumpur, selected for their active usage criteria that could give a deeper understanding of this study. The sample comprises Malaysian citizens using public transport in the Klang Valley, spanning diverse backgrounds but within the age range of 18 to 55 years . This is based on Sham, Kai Xuen, Yi Ting, & Hye (2022) study. A survey method is then chosen based on Keen, Liang, & Sham (2022) method used for measuring cost-effectiveness, efficiency, accuracy, and flexibility, with self-administered questionnaires distributed using a Likert scale (Strongly Disagree = 1; Strongly Agree = 5). The survey instrument is adapted from works by Ong (2022) and Choy and Salleh (2022), and the sampling method employed is convenience sampling (Grassini & Laumann, 2020). The study then employs multiple linear regression analysis to assess the influence of independent variables on the dependent variable as outlined in the research model. The data is analyzed using the Statistical Package

for Social Science (SPSS). Before delving into the analysis, demographic information of the respondents is explored using descriptive statistics. Prior to this, validity, reliability, response bias, and pilot tests were conducted on the questionnaire to ensure robustness and accuracy among the 185 respondents in this study. The study was sent out to 300 respondents via Google form questionnaire (Sham, Izni, Mahmood, & Tajuddin, 2023) of which only 250 completed the online survey responses, where 185 were deemed usable. The validity, reliability, response bias, and pilot test of the questionnaire were rigorously tested following standard research methodology, confirming the suitability for multiple linear regression analysis.

4.0 Findings

4.1 Descriptive analysis

The survey gathered demographic information on gender, age, ethnicity, employment status, and frequency of public transport usage. Table 1 provides a summary of the respondents' demographic details.

Table 1. Descriptive Analysis

Demographic Information		Frequency	Percentage
Gender	Male	80	43.2
	Female	105	56.8
Age Group	18 - 25	96	51.9
	26 - 35	41	22.2
	36 - 45	36	19.5
	46 - 55	12	6.5
Employment Status	Employed	92	49.7
	Self Employed / Business Owners	15	8.1
	Student	78	42.3
Frequency Using Public Transport	1-2 times per week	94	50.8
	3-4 times per week	41	22.2
	5-6 times per week	31	16.8
	More than 6 times per week	19	10.3
Type of Public Transport Used	Mass Rapid Transit (MRT)	156	84.3
	Light Rail Transit (LRT)	149	80.5
	Monorail	42	22.7
	KTM *Komuter*	48	25.9
	Public Bus	75	40.5
	Taxi	17	9.2

The respondents, comprising 80 males (43.2%) and 105 females (56.8%), primarily fall within the 18-25 age group, potentially due to entering the workforce post-education when affording private cars is challenging. A majority are employed (49.7%), while students also significantly contribute (42.3%). Regarding public transport frequency, 50.8% use it 1 to 2 times a week, with LRT being the preferred mode (80.5%) and taxis the least popular (9.2%). Using a Likert-type scale, respondents rated all variables above 3.5 (between neutral and agree). Assurance received the highest average mean score (3.92), while reliability scored the lowest (3.54). Despite overall positive perceptions, respondents varied in their views, highlighting the critical importance of reliability elements like timing, schedule, employee behaviour, and efficiency, while assurance elements such as road transport safety and drivers' behaviour were perceived positively but to a slightly lesser extent.

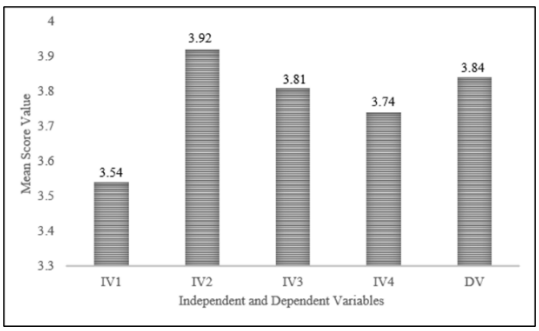

Fig. 2: Average Mean Score

Fig 2 reports on the Average Mean Score for Independent and Dependent Variables where IV1 is reliability, IV2 is assurance, IV3 is tangible, IV4 is responsiveness, and DV is customer satisfaction. The result shows that assurance has the highest mean score towards the satisfaction level of the public transport users.

A multiple linear regression analysis was conducted to examine the relative impact of service quality variables on customer satisfaction. The independent variables are significantly accounted for .78 (i.e. R Square) of the variance in the dependent variable (customer satisfaction). The F statistics yield for 160.19 in customer satisfaction at the 95 per cent confidence level. The results of regression analysis supported all hypotheses H_1, H_2 H_3 and H_4 showing a positive causal relationship (H_1: $\beta = .20$, $t = 3.31$, $p = .001$; H_2: $\beta = .26$, $t = 4.19$, $p < .001$; H_3: $\beta = .33$, $t = 4.90$, $p < .001$; H_4: $\beta = .18$, $t = 2.77$, $p = .006$). The significant values of all the independent-dependent relationships are less than the significant level of .05 value ($p < .05$). This indicates that reliability, assurance, tangible and responsiveness have contributed significantly to customer satisfaction on public transport at Klang Valley.

5.0 Discussion

This study investigates factors influencing customer satisfaction with public transport services in Klang Valley, Malaysia. Reliability, notably in clear timetables and planned routes, emerged as the primary factor affecting satisfaction. Respondents stressed the importance of reliability in ensuring on-time arrivals and minimizing delays, aligning with Choy & Salleh (2022) and Mani & Zainuddin (2021) as they also believed that reliable public transport could reduce reliance on private vehicles.

Assurance, a significant satisfaction factor, involves knowledgeable and courteous employees. Training to enhance employee attitudes and performance is crucial and was supported by Boninsegni et al. (2020). They have also agreed with the current study that establishing trustful relationships with customers through competent and customer-focused employees promotes repeated service usage.

Tangible aspects, such as equipment appearance and cleanliness, impact customer satisfaction. Clean facilities and appropriate staff attire contribute to a comfortable experience, echoing Ali et al. (2018) and emphasizing the highest influence on customer satisfaction. Comfort, highlighted by them also suggested prioritizing cleanliness in facilities, workers, and equipment, which has similarities with the findings from this study.

Responsiveness is crucial for customer satisfaction, requiring clear communication and quick responses. Improving employees' responsiveness through training aligns with the results reported by Arabelen & Kaya (2021), Ong (2022), and Shamsudin et al. (2020).

6.0 Conclusion and Recommendations

This study is limited to only urban public transport passengers' perceptions and should further explore passengers from rural areas as well. The study's significant contribution lies in exploring satisfaction factors for urban transport in Klang Valley. Stakeholders can use this information for long-term strategies, attracting more passengers to public transport. The study sheds light on SERVQUAL theory in Klang Valley's urban public transport context. Future research should consider rural and urban satisfaction and extend to other states, as this study focuses on Klang Valley respondents. By offering valuable insights into the factors influencing customer satisfaction, it provides a roadmap for researchers and public transport companies seeking to expand their operations. The findings serve as a practical contribution for government agencies and service providers, enabling them to make informed decisions and implement strategies that enhance the overall quality of public transport services in an urban area.

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Paper Contribution to Related Field of Study

This research makes a significant contribution to the advancement of public transport services in urban areas of Malaysia. By systematically identifying and analyzing the factors influencing customer satisfaction, the study provides a comprehensive understanding of the dynamics crucial for the successful expansion and enhancement of public transport operations. The insights garnered serve as a practical guide for both researchers and public transport companies, offering a nuanced perspective on customer preferences and concerns.

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