

Measure up Your Commuting Experience with Public Transit in Klang Valley

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Abstract

This research delves into the crucial components of public transport service quality with the aim of improving commuter preferences in Klang Valley, Malaysia. The study specifically delves into reliability, assurance, tangible aspects, and responsiveness as pivotal dimensions influencing customer satisfaction among urban residents in the Kuala Lumpur metropolitan region. Using quantitative methods, particularly multiple linear regression analysis and convenience sampling, the primary objective is to scrutinize the interrelationships among these dimensions and their collective impact on customer satisfaction. The research endeavours to obtain a representative sample size to offer valuable insights for targeted enhancements in the broader public transport system.

Keywords: Public Transport; Transport Service; Urban Transport; Satisfaction

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1.0 Introduction

In the rapidly expanding urban environment of Klang Valley, the surge in population growth and urbanization underscores the critical role of land transportation in facilitating economic and social activities (Yazid et al., 2020). Land transportation, acknowledged as a vital facilitator of mobility and direct access to resources, products, and markets, significantly contributes to enhancing the quality of life (Eboli & Mazzulla, 2021). Given the increasing demand for transportation due to a growing population, there is an urgent need for efficient and reliable public transportation (Laisak et al., 2021).

Despite the substantial development of public transportation networks, private vehicles (Borhan et al., 2019) continue to be the preferred choice for the majority of Malaysians. Factors such as flexibility, privacy, comfort, and speed drive this preference, resulting in a significant increase in private vehicle ownership. However, this trend poses challenges such as traffic congestion, environmental degradation, energy consumption, road infrastructure damage, and an increase in road accidents. The urgency for sustainable solutions is highlighted by Malaysia's ranking as the 49th most congested city in Asia, as reported by the World Bank in 2019 (World Bank, 2019).

In response to this challenge, a research study seeks to evaluate the satisfaction of current public transport users in urban areas, specifically in the Klang Valley. The research aims to investigate the overall satisfaction level of current public transport users by measuring the service characteristics provided in the current public transport service in urban areas. The primary objective is to determine the effectiveness of service quality dimensions (reliability, assurance, tangibility, and responsiveness) in influencing the overall satisfaction of individuals while using public transport services in the Klang Valley.

2.0 Literature Review

In the sprawling urban landscape of Kuala Lumpur, the intricately woven public transport network, despite its well-established status, witnesses a mere 20% of passengers choosing it as their mode of travel, while an overwhelming 80% opt for the comfort and convenience of private vehicles (Irtema et al., 2018). This stark dichotomy has been an enduring feature since the 1990s, marked by a chorus of complaints echoing the deficiencies of Malaysia's public transport system. Among the persistent grievances are issues such as delays, poorly designed interchanges, and less-than-friendly drivers, forming the nucleus of discontent among commuters. Public bus services, grappling with the expanding web of road traffic, experience a decline in quality, pushing a significant portion of commuters towards the allure of private vehicles (Baharum & Haron, 2020). The proliferation of negative sentiments is exacerbated by low-quality services that consistently fail to meet the expectations of the commuting populace, ultimately steering the majority towards the perceived reliability and comfort of private vehicles. The dwindling usage of public transport emerges as a pressing concern, unravelling a narrative where perception plays a pivotal role in shaping motivation and trust among urban riders. In this intricate urban environment, the passenger's perception of service quality stands as the cornerstone, defining the overarching service

level that dictates the trajectory of transportation choices in Klang Valley (Zahirudin & Ali, 2022). The intricacies of this narrative highlight the need for a comprehensive re-evaluation and enhancement of the public transport system to address the multifaceted challenges faced by urban commuters in Kuala Lumpur.

The foundation of this study rests upon the comprehensive Service Quality Method Model (SERVQUAL), a widely acknowledged framework designed to evaluate service quality and customer satisfaction. The central tenet of customer satisfaction within this context refers to the extent of contentment experienced by customers concerning a company's products or services, with profound implications for business growth and the overall customer experience. The study meticulously delves into the intricate facets of the SERVQUAL theory, which encompasses five critical dimensions—assurance, reliability, responsiveness, tangible, and empathy. However, this research focuses its scrutiny specifically on four pivotal attributes: reliability, assurance, tangible, and responsiveness (Jusufobašić & Stević, 2023).

The examination of the independent variable, reliability, stands as the foundational element in this study's quest to understand and evaluate its impact on the satisfaction of public transport ridership. Reliability, within an organizational context, is characterized by the consistent and accurate delivery of promised services, signifying a critical facet of business sustainability. It is noteworthy that headway variance, or the irregularity in the time interval between consecutive vehicles, holds substantial influence over the reliability of public transportation services (Soza-Parra et al., 2019).

Upholding reliability in public transport services requires concerted efforts by transport operators, necessitating a focus on customer comfort, the establishment of trust, and ensuring safety. Employee training emerges as a pivotal factor in this equation, as highlighted by Ali et al. (2018). Conversely, poor reliability not only disrupts the operational flow but also results in the loss of customer confidence in public transportation (Ubaidillah et al., 2022).

In light of these considerations, the study introduces the following hypothesis:

H₁: The factor of reliability in the public transport service quality significantly influences customer satisfaction.

This hypothesis posits that the level of reliability inherent in the public transport services directly impacts the satisfaction experienced by customers. The intricate interplay between reliability and customer satisfaction is expected to be unveiled through empirical testing, shedding light on the critical role that reliability plays in shaping the overall perception and contentment of individuals utilizing public transport services in the dynamic urban landscape of Klang Valley.

In the intricate evaluation of the independent variables shaping public transport service quality, assurance emerges as a pivotal element, constituting the second facet to be scrutinized in this study. Assurance within the service industry is a nuanced construct defined by the knowledge, politeness, and ability of employees to inspire trust and

confidence in customers. Central to the assurance aspect are key factors such as personal safety and facility cleanliness, with the effectiveness of security systems and the knowledge exhibited by staff playing a crucial role (Limna & Kraivanit, 2022).

Assurance in public transport extends beyond mere functional competence; it encompasses the broader experience of passengers, where their confidence in the system is influenced by the professionalism, courtesy, and expertise exhibited by transport personnel. Effective communication, both in terms of information provision and interpersonal interactions, contributes significantly to the assurance perceived by passengers during their journeys. Notably, the cleanliness of facilities, the presence of security measures, and the demeanour of staff collectively contribute to the overall assurance experienced by commuters.

The development of the following hypothesis encapsulates this premise:

H₂: The factor of assurance in the public transport service quality significantly influences customer satisfaction.

This hypothesis underscores the anticipated correlation between the assurance provided by public transport services and the resulting customer satisfaction. Through meticulous empirical testing, the study aims to unravel the intricate dynamics between assurance-related factors and the overall satisfaction levels of individuals utilizing public transport services in the dynamic urban setting of Klang Valley. The multifaceted nature of assurance, encompassing aspects of employee conduct, facility upkeep, and security measures, reinforces its importance in shaping the holistic experience of commuters and highlights its significance in the realm of public transport service quality.

The concluding facet of service quality under scrutiny in this study is tangibility, an element that delves into a firm's capacity to manifest its tangible environment and infrastructure. In the realm of services, tangibility is often associated with the tangible cues and physical attributes that a service provider presents to its customers (Ali et al., 2018).

Despite the inherently intangible nature of public transport services, the tangible aspects wield significant influence over the perceptions of service quality. Elements such as cleanliness within the transit environment, the attire of employees, and the functionality of both hardware and software constitute critical factors shaping the overall perception of public transport service quality (Ubaidillah et al., 2022). Scholars have concurred that providing comfortable services through well-maintained infrastructure is deemed essential for public transit operators, potentially leading to a higher satisfaction indication among passengers.

The following hypothesis encapsulates this assertion:

H₃: The factor of tangibility in the public transport service quality significantly influences customer satisfaction.

This hypothesis underscores the anticipated relationship between tangible aspects, including the physical appearance of facilities and personnel, and the resultant satisfaction levels of individuals utilizing public transport services. Through empirical testing, the study endeavors to unravel the intricate dynamics between tangible elements and the overall satisfaction experienced by commuters in the dynamic urban landscape of Klang Valley. The recognition of the tangible attributes as influential components in shaping the holistic experience of public transport users adds a layer of complexity to the understanding of service quality in the context of urban transportation.

The dimension of responsiveness within public transport services takes center stage in this study, delving into the intricate facets of both the willingness and promptness to serve customers—a critical element influencing traveler satisfaction (Ong, 2022). Timeliness emerges as a focal point within responsiveness, considering that customers are inherently averse to inefficiency and may opt for private cars as an alternative, a trend notably observed in the commuter service in Klang Valley (Ali et al., 2022). Employee responsiveness, characterized by swift and effective responses to inquiries and requests, assumes a pivotal role in shaping customer satisfaction.

The study posits that public transport services should prioritize responsiveness to elevate customer satisfaction, advocating for substantial investments in employee training to enhance service efficiency and customer interactions. Within the context of Klang Valley, Mani and Zainuddin's (2021) study underscores a significant correlation between responsiveness and customer satisfaction in the realm of Bus Rapid Transit (BRT) services, further emphasizing the relevance and impact of this dimension in the urban transportation landscape.

The following hypothesis encapsulates the anticipated relationship between responsiveness and customer satisfaction:

H4: The factor of responsiveness in the public transport service quality significantly influences customer satisfaction.

This hypothesis highlights the pivotal role that responsiveness plays in influencing the overall satisfaction levels of individuals utilizing public transport services. The empirical testing of this hypothesis is expected to provide valuable insights into the dynamic interplay between responsiveness, service quality, and customer satisfaction in the specific context of urban transportation within Klang Valley. Recognizing responsiveness as a crucial determinant in commuter contentment underscores the significance of continuous improvements and investments in training programs to enhance the efficacy of public transport services in meeting the evolving needs of passengers.

Figure 1 in this study illustrates the comprehensive research framework employed to investigate the intricate dynamics of public transport services. This model intricately incorporates a set of independent variables—namely reliability, assurance, tangible, and responsiveness—alongside a central dependent variable: customer satisfaction among users of public transport services.

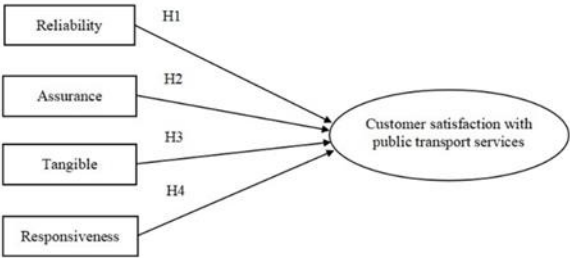


Fig. 1: Research Framework

The reliability variable centers around the consistent and accurate delivery of promised services. It encompasses elements such as punctuality, service frequency, accurate information provision, and timely conveyance to the destination. Headway variance, representing the irregularity in the time interval between consecutive vehicles, also plays a significant role in assessing the reliability of public transportation services.

On the other hand, assurance pertains to the knowledge, politeness, and ability of service providers to inspire trust and confidence in customers. Key factors include personal safety, facility cleanliness, effective security systems, and the knowledge exhibited by staff. The assurance dimension extends beyond functional competence, emphasizing professionalism, courtesy, and effective communication.

The tangibility variable delves into the tangible environment and infrastructure presented by public transport services. It encompasses the physical appearance of workers, equipment, product presentation, uniforms, workplaces, and communication materials. Despite the inherently intangible nature of public transport, tangible aspects, including cleanliness, employee attire, and infrastructure functionality, significantly influence perceptions of service quality.

Another independent variable included in this study is responsiveness is characterized by the willingness and promptness to serve customers. Timeliness is crucial, and employee responsiveness, demonstrated through quick responses to inquiries and requests, plays a pivotal role in customer satisfaction. The study advocates for investments in employee training to enhance responsiveness and, consequently, customer satisfaction.

In this study, customer satisfaction is the dependent variable where it is positioned as the central dependent variable, customer satisfaction represents the level of contentment experienced by users of public transport services. This satisfaction is influenced by the interplay of the independent variables—reliability, assurance, tangibility, and responsiveness. The overall aim is to unravel the complex relationship between service quality dimensions and the satisfaction levels of individuals utilizing public transport services.

In essence, Figure 1 serves as a visual representation of the conceptual framework guiding the study, providing a holistic view of the interconnections among the chosen independent variables and their collective impact on customer satisfaction within the realm of public transport services. The model sets the stage for empirical testing, offering a structured approach to understanding the multifaceted dynamics influencing the perceived quality of public transport services in the specific context of the study.

3.0 Methodology

This quantitative study, as advocated by Ling et al. (2023), is designed to unravel the intricate relationships illustrated in Figure 1, employing a research method that specifically focuses on the interactions between independent and dependent variables (Yi, Junyi, Johan, Ali, Zhucheng, 2023). The study targets public transportation users in Klang Valley, Kuala Lumpur, chosen based on active usage criteria to ensure a nuanced understanding of the research objectives.

The sample comprises Malaysian citizens actively using public transport in the Klang Valley, presenting a diverse range of backgrounds but falling within the age range of 18 to 55 years (Sham, Kai Xuen, Yi Ting, & Hye, 2022). The chosen survey method is considered for its cost-effectiveness, efficiency, accuracy, and flexibility. Self-administered questionnaires are distributed among the respondents, utilizing a Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5).

The survey instrument is adapted from previous works by Ong (2022), ensuring a comprehensive assessment of the chosen variables. The study employs a convenience sampling method to select participants who meet the specific criteria for active public transport usage in the Klang Valley. Multiple linear regression analysis is utilized to assess the influence of independent variables on the dependent variable, aligning with the research model depicted in Figure 1. The Statistical Package for Social Science (SPSS) is employed for rigorous data analysis.

Before diving into the core analysis, the study explores the demographic information of the respondents through descriptive statistics. This initial step ensures a comprehensive understanding of the characteristics of the sample. To ensure the robustness and accuracy of the questionnaire, the study conducts validity, reliability, response bias, and pilot tests. These tests adhere to standard research methodology and are crucial steps in confirming the suitability of the questionnaire for multiple linear regression analysis.

The survey is administered to 300 respondents via a Google Form questionnaire (Sham, Izni, Mahmood, & Tajuddin, 2023). From the total responses, 250 are completed online, and after rigorous screening, 185 are deemed usable for the study. The response rate, while indicative of the study's reach, underscores the reliability and depth of the gathered data.

In conclusion, the meticulous design and execution of the research methodology, including the choice of sampling method, survey instrument, and data analysis techniques, reflect a comprehensive and systematic approach to exploring the relationships outlined in

Figure 1. The rigorous testing and screening processes ensure the robustness of the collected data, laying the groundwork for meaningful insights into the factors influencing customer satisfaction in the context of public transport services in Klang Valley.

4.0 Results

The survey conducted in this study meticulously collected demographic information to gain a comprehensive understanding of the characteristics and background of the respondents. 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		
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		
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 survey respondents exhibit a gender distribution with 80 males (43.2%) and 105 females (56.8%). This gender diversity allows for a nuanced understanding of experiences and preferences across different genders within the context of public transport usage. A predominant proportion of respondents falls within the 18-25 age group, constituting the primary demographic (potentially 100% of the sample). This age concentration suggests a cohort potentially entering the workforce post-education, where the financial feasibility of private car ownership may pose challenges. The majority of respondents are employed

(49.7%), indicating a workforce-centric sample. Additionally, students significantly contribute to the respondent pool, constituting 42.3%. This blend of employment and student statuses offers insights into the diverse roles and lifestyles of the surveyed individuals. In terms of public transport usage frequency, a notable 50.8% of respondents use it 1 to 2 times a week. This frequency distribution provides a snapshot of the routine reliance on public transport within the sample. The preferred mode of public transport is the LRT (Light Rail Transit), chosen by a significant majority (80.5%). In contrast, taxis emerge as the least popular mode, selected by only 9.2% of respondents. This information delineates the popularity and preferences for specific modes of public transport within the surveyed group. Respondents used a Likert-type scale to rate various variables, with all scores falling above 3.5, indicating a generally positive perception. This scale allows for a quantitative assessment of respondents' attitudes and opinions. Assurance received the highest average mean score (3.92), indicating a strong positive perception among respondents. In contrast, reliability scored the lowest (3.54). This ranking provides valuable insights into the areas of public transport service that are particularly well-received and those that may require attention. Despite overall positive perceptions, respondents varied in their views, underscoring the critical importance of reliability elements such as timing, schedule adherence, employee behaviour, and efficiency. Assurance elements, including road transport safety and drivers' behaviour, were also positively perceived but to a slightly lesser extent. The demographic and characteristic details, coupled with variable ratings, offer a rich dataset for analysis. The concentration of respondents in the 18-25 age group, employment status, and preferred modes of public transport provides a contextual backdrop for interpreting satisfaction levels and preferences within the Klang Valley public transport landscape.

The nuanced insights into variable ratings and perceived importance highlight areas of strength and potential improvement in public transport services. The variations in views emphasize the diverse expectations and priorities of respondents, contributing to a comprehensive understanding of the factors influencing their satisfaction with public transport services.

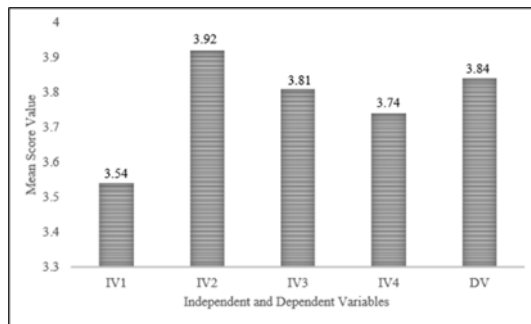


Fig. 2: Average Mean Score

Figure 2 serves as a critical visual representation of the Average Mean Scores assigned to various Independent Variables (IV) and the Dependent Variable (DV) in the study, providing a comprehensive overview of the respondents' perceptions and satisfaction levels. The following breakdown delves into the details:

The mean score for reliability is not explicitly provided in the statement. However, its presence in Figure 2 implies that it is a crucial factor in the study, influencing the satisfaction levels of public transport users. Reliability typically encompasses elements such as punctuality, schedule adherence, and overall consistency in service delivery. Assurance, as represented by IV2, emerges with the highest mean score among the independent variables. This implies that, according to the respondents, assurance-related factors, including the knowledge, politeness, and trustworthiness of service providers, significantly contribute to the overall satisfaction of public transport users. The statement doesn't explicitly mention the tangible variable in Figure 2. However, tangibility, which focuses on the physical aspects of the service environment, would be another crucial aspect influencing customer satisfaction. This might include factors like cleanliness, infrastructure aesthetics, and the overall appearance of transport facilities. Responsiveness, denoted as IV4, is another vital element influencing customer satisfaction. It involves the willingness and promptness of service providers to address customer needs. While the specific mean score is not provided, its inclusion in Figure 2 indicates its relevance in the study.

The Dependent Variable represents the ultimate metric of interest - customer satisfaction. In Figure 2, it is denoted as DV. The mean score for customer satisfaction is not explicitly stated, but its presence indicates its central role in assessing the overall contentment of public transport users.

A comprehensive multiple linear regression analysis was executed to explore the relative impact of service quality variables on customer satisfaction. The independent variables collectively account for a substantial proportion, specifically 78% (R Square), of the variance observed in the dependent variable, namely customer satisfaction. The F statistics, yielding a value of 160.19, support customer satisfaction at a 95% confidence level. The outcomes of the regression analysis robustly substantiated all hypotheses (H1, H2, H3, and H4), indicating a positive causal relationship. The specifics of the support for each hypothesis are as follows: H1 ($\beta = .20$, $t = 3.31$, $p = .001$), H2 ($\beta = .26$, $t = 4.19$, $p < .001$), H3 ($\beta = .33$, $t = 4.90$, $p < .001$), and H4 ($\beta = .18$, $t = 2.77$, $p = .006$). Importantly, all the p-values for the independent-dependent relationships are below the significance threshold of .05 ($p < .05$), signifying that reliability, assurance, tangible, and responsiveness significantly contribute to customer satisfaction in the context of public transport within the Klang Valley.

5.0 Discussion

This research delves into the determinants shaping customer satisfaction in the realm of public transport services within Klang Valley, Malaysia. Foremost among these factors is reliability, specifically pertaining to transparent timetables and well-planned routes. The

study identifies reliability as a primary influencer of satisfaction, with respondents emphasizing its significance in ensuring punctual arrivals and minimizing delays. This aligns with the viewpoints of Mani & Zainuddin (2021), reinforcing the belief that a dependable public transport system can alleviate the dependence on private vehicles.

Another pivotal factor in customer satisfaction is assurance, encompassing the presence of knowledgeable and courteous staff. Recognizing the importance of employee attitudes and performance, the study advocates for training initiatives to enhance these aspects. This recommendation finds support in Boninsegni et al.'s (2020) work, aligning with the current study's emphasis on building trustful relationships with customers through competent and customer-focused employees, fostering repeated service usage.

Tangible elements, including the appearance and cleanliness of equipment, play a substantial role in shaping customer satisfaction. The study underscores that clean facilities and appropriate staff attire contribute to a comfortable experience, echoing findings from Ali et al. (2022). The emphasis on cleanliness as a priority in facilities, staff, and equipment aligns with the insights derived from this study.

Additionally, responsiveness emerges as a critical component for customer satisfaction, necessitating clear communication and prompt responses. The study advocates for enhancing employee responsiveness through training, a recommendation consistent with the results reported by Ong (2022). The collective findings emphasize the importance of proactive and efficient communication in bolstering customer satisfaction within the public transport service context.

6.0 Conclusion

This study is confined to the perspectives of urban public transport passengers, prompting a need for further investigation into the perceptions of passengers residing in rural areas. While the study makes a noteworthy contribution by delving into the satisfaction factors specific to urban transport in Klang Valley, it acknowledges its limitation in terms of geographical scope. The insights derived from this research can be instrumental for stakeholders in formulating enduring strategies aimed at enticing more passengers to opt for public transport. The study specifically illuminates the application of the SERVQUAL theory within the urban public transport milieu of Klang Valley.

Future research endeavors should broaden their scope to encompass both rural and urban satisfaction dynamics, extending their purview beyond Klang Valley to include other states. By elucidating the influential factors behind customer satisfaction, this study provides a guiding framework for researchers and public transport entities looking to expand their operational horizons. The implications of these findings extend beyond academia, offering practical contributions for government agencies and service providers. Armed with this knowledge, decision-makers can make well-informed choices and implement strategies geared towards elevating the overall quality of public transport services within urban areas.

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Article Contribution to Related Field of Study

This study plays a vital role in advancing urban public transport services in Malaysia. Through a systematic identification and analysis of factors impacting customer satisfaction, the research offers a comprehensive comprehension of essential dynamics pivotal for the successful growth and improvement of public transport operations. The acquired insights serve as a practical guide for researchers and public transport companies, providing a nuanced understanding of customer preferences and concerns

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