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ANALYSIS OF PASSENGER SATISFACTION TOWARDS ELECTRIC BUS SERVICES THROUGH SERVQUAL METHOD

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Abstract
This research aims to measure the satisfaction level of passengers of PT Kalista Biru Nusantara (Kalista Group) electric bus in Medan and analyze the gap between expectations and perceptions of service quality. The high competition in the transportation service sector requires companies to continuously improve service quality as a key strategy to maintain passenger loyalty. Based on an initial survey, indications of dissatisfaction were found related to schedule mismatches, inadequate safety facilities, insufficient bus stop conditions, and unresponsive staff service. Therefore, this study also aims to formulate targeted service improvement strategies. The approach used is quantitative, with the service quality (Servqual) method. The independent variables consist of five servqual dimensions, namely tangible (X_1), reliability (X_2), responsiveness (X_3), assurance (X_4), and empathy (X_5), while the dependent variable is passenger satisfaction (Y). Data analysis was conducted using structural equation modeling (SEM) based on smart partial least squares (SmartPLS). The analysis results show that the five dimensions of service simultaneously have a positive and significant effect on passenger satisfaction of PT Kalista Biru Nusantara (Kalista Group) electric bus. Partially, the dimensions of reliability and assurance were found to be the most dominant factors in shaping passenger satisfaction. Overall, the five servqual dimensions contribute 5% to passenger satisfaction, while the remaining 95% is influenced by other factors outside the research model. It is recommended that PT Kalista Biru Nusantara (Kalista Group) electric bus prioritize improving service quality in the dimensions of reliability (especially punctuality of departures and the ticketing service system) and assurance (by ensuring all staff provide friendly, polite, and professional service).

Keyword*: passenger; electric bus; satisfaction.*

INTRODUCTION

Public transportation, particularly city buses, plays a vital role in supporting urban mobility and driving regional economic growth. However, as public demand and expectations for safe, comfortable, and efficient transportation services increase, the quality of city bus services often becomes a key focus in passenger satisfaction assessments (Lefrandt et al., 2025). Passenger satisfaction is a crucial indicator in assessing the success of public transportation services. According to a recent national survey, public satisfaction with public transportation in Indonesia reached 90.5 percent during the 2025 Eid al-Fitr holiday, indicating an increase compared to previous years (Tempo, 2025). However, this figure still presents challenges for local operators, including the electric bus company in Medan, PT Kalista Biru Nusantara (Kalista Group)., in collaboration with the Medan City Government and Blue Bird. A total of 60 electric buses were launched by the end of 2024 to serve various corridors in Medan. However, limited number of fleets, inadequate bus stops, long waiting times, and routes that do not yet reach the outskirts optimally have implications forservice quality that can have a direct impact on reducing public interest, which ultimately has the potential to disrupt mobility and economic activity.

Service quality is an indicator that focuses on how users assess the quality of service provided by electric bus operators. Aspects assessed include punctuality of departure and arrival times, the attitude and professionalism of staff, the level of comfort on the bus, travel safety, and cleanliness of facilities. Good service will build a positive image of the public transportation system and increase user loyalty. In the context of electric buses in Medan, service quality also...reflects the extent to which the community is empowered in the operation of this environmentally friendly transportation system—whether as officers, technicians, or other support staff. Therefore, this indicator plays a crucial role in evaluating the success of electric buses as an efficient, safe, and humane urban transportation solution.

The Servqual method is widely used as a tool to assess and evaluate passenger satisfaction, assessing five key dimensions of service: reliability, tangibles, assurance, responsiveness, and empathy. This method has proven effective in identifying service aspects that need improvement to enhance passenger satisfaction (Luthfiyyah et al., 2024). The Servqual method has also been applied to public transportation research on Bus Rapid Transit (BRT) services in Bogor City, where the study highlighted the importance of comparing service expectations and reality from a passenger perspective (Luthfiyyah et al., 2024). Tangibles, reliability, responsiveness, assurance, and empathy are the primary benchmarks for assessing passenger satisfaction. A study on the Trans Semarang bus service corridor VI also demonstrated that the use of the Servqual method can comprehensively identify passenger satisfaction levels. The study results showed that passengers were satisfied with the service provided, but there was still room for improvement in certain aspects (Setiawan, 2022). Another study on city bus routes in various regions also found that the average passenger satisfaction rate was around 80-90%, but there were still complaints related to physical facilities, delays, and lack of comfort during the trip (Arisandi et al., 2025). This shows that although the service is generally considered good, increasing passenger expectations demand innovation and continuous improvement.

Evaluating passenger satisfaction is crucial for maintaining customer loyalty and increasing company competitiveness amidst increasingly fierce competition. Research that integrates the Servqual method can provide a clearer view of service aspects that need improvement. Therefore, this research can provide valuable input for local governments and relevant stakeholders in formulating more effective and efficient transportation policies. Therefore,

research on the application of the Servqual method in analyzing passenger satisfaction with electric bus services, particularly at PT Kalista Biru Nusantara (Kalista Group) in 2025, is highly relevant and important to conduct by analyzing the five main dimensions of service.

METHOD

This study applies a descriptive quantitative approach to describe and analyze the level of passenger satisfaction with electric bus services in Medan City through the application of the Servqual method, and supported by in-depth interviews to enrich the analysis. In this study, researchers used data on the number of city bus passengers by month, origin, and the number of passengers per month on PT Kalista Biru Nusantara services. This data is considered relevant because it reflects the level of use of public transportation services that are the object of service analysis. In addition, passenger number data can represent user perceptions and satisfaction with the quality of services provided.The research sample was determined in the K4 corridor of the routeTuntungan - Merdeka Square, which is a strategic and busy point for users with a focus on data collection through Google Forms containing questions related to satisfaction, obstacles, and suggestions for electric bus operations.Determination of the number of samples using the Slovin formula with an error tolerance level of 10% of passenger data based on the company's operational report, namely 100 people from a total of 331 passengers..which will then be analyzed using the SERVQUAL method to measure the level of passenger satisfaction with five dimensions of service quality.

Data analysis was conducted using Structural Equation Modeling (SEM) based on Smart Partial Least Square (SmartPLS). SmartPLS is a Structural Equation Modeling (SEM) approach used to analyze relationships between complex latent variables (constructs) with multiple indicators. SmartPLS was chosen because it can process data with a relatively small sample size, does not require a normal data distribution, and is able to test predictive models efficiently. The data processing technique utilizes the SEM method based on Partial Least Square (PLS), which involves two stages to evaluate the research model: the outer model and the inner model. Outer Loading analysis is used to test the validity of the indicators against their constructs in the measurement model (outer model). The outer loading value shows the degree of correlation between each indicator and the latent variable it measures. In general, an indicator is declared valid if the outer loading value is ≥ 0.70. This shows that the indicator can explain the latent variable strongly. However, if the outer loading value is between 0.40 and 0.70, the indicator can still be maintained if the AVE value and construct reliability (Composite Reliability) still meet the criteria, and the indicator is considered theoretically important. The purpose of inner model or structural model analysis is to evaluate the relationship between constructs according to the proposed hypothesis. The structural model assessment is carried out by observing the R-Square value of the endogenous construct in response to the influence of the exogenous construct.

RESULT

PT Kalista Biru Nusantara, part of the KALISTA Group, is a leading fleets-as-a-service company in Indonesia, collaborating with the Medan City Government to transform public transportation in Medan through the launch of 60 electric buses on Sunday, November 24, 2024, at Merdeka Square, Medan. These electric buses are the result of a collaboration between various parties within the framework of #KolaborasiMedanBerkah, namely between KALISTA, the Medan City Government, the Medan City Transportation Agency, and Blue Bird as the operator. This collaboration is part of the strategy to achieve net zero emissions (carbon neutral), in line with KALISTA's vision to support the Central Government's program through the Medan City Government in accelerating environmentally friendly transportation.

Figure 1. Kalista Biru Nusantara (Kalista Group)

Table 1. Outer Loading Values

Var.	X1	X2	X3	X4	X5	Y	Z
X1.A	0.867						
X1.B	0.805						
X1.C	0.811						
X1.D	0.879						
X1.E	0.824						
X2.A		0.937					
X2.B		0.896					
X3.C		0.962					
X4.D		0.843					
X5.E		0.855					
X3.A			0.756				
X3.B			0.873				
X3.C			0.843				
X3.D			0.884				
X3.E			0.912				
X4.A				0.915			
X4.B				0.897			
X4.C				0.935			
X4.D				0.897			
X4.E				0.882			
X5.A					0.902		
X5.B					0.871		
X5.C					0.865		
X5.D					0.942		
X5.E						0.876	
Y1						0.850	
Y2						0.844	
Y3						0.862	
Y4						0.835	
Z1							0.872
Z2							0.889
Z3							0.905
Z4							0.871
Z5							0.834

Source : SmartPLS Program

Table 1 shows an outer loading value of ≥ 0.70 indicates that the indicator is valid and can explain the latent variable. This result also indicates that an Average Variance Extracted (AVE) analysis is not necessary. The next testing stage is the inner model analysis, or structural model, which aims to evaluate the relationships between constructs according to the proposed hypothesis. The structural model assessment is carried out by observing the R-Square value of the endogenous construct in response to the influence of the exogenous construct. The results of the structural model testing utilize SmartPLS 3 version shown in Figure 1.

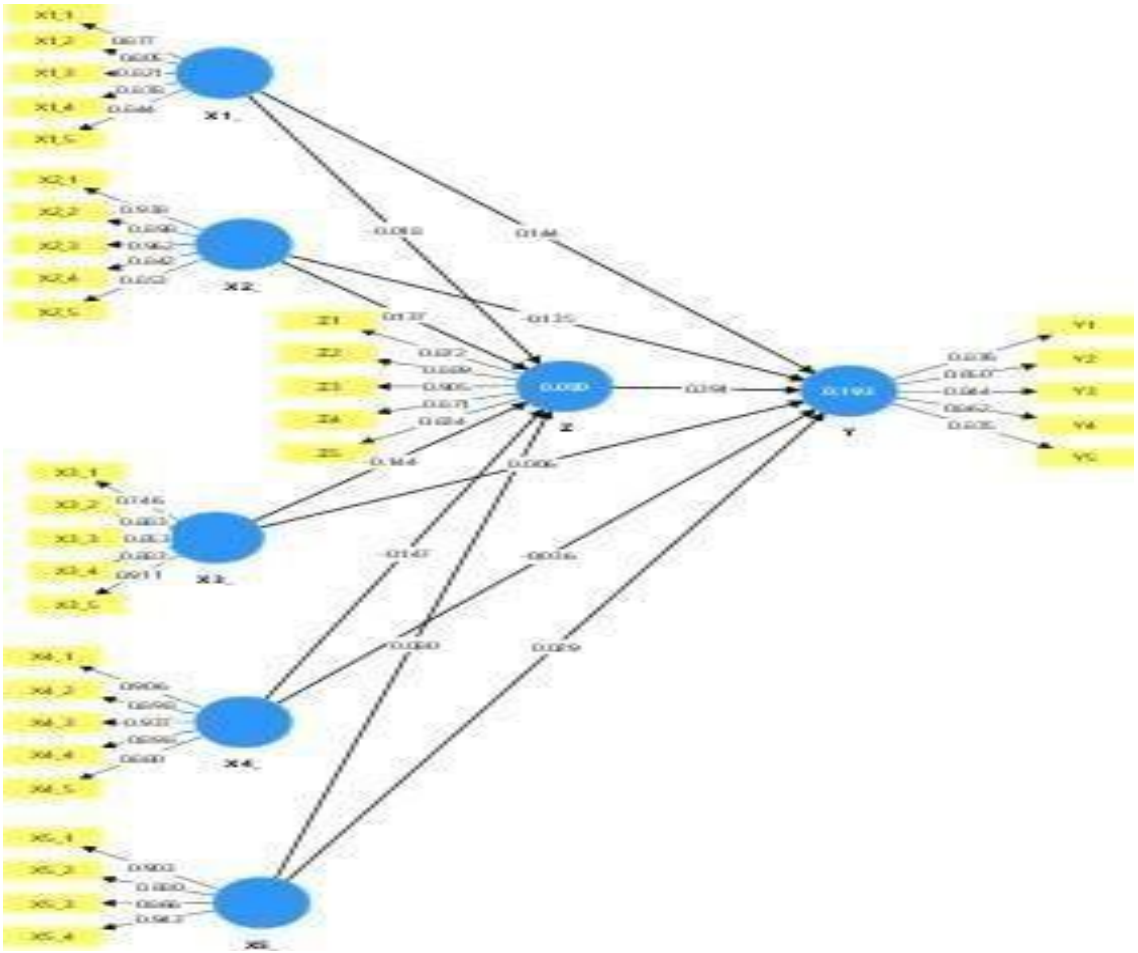

Figure 1. Inner Model

From Figure 1, the Model Equation can be formed:

a. Equation Model I, is a description of the magnitude of the influence of the constructs Tangible, Reliability, Responsiveness, Assurance, Empathy, with the existing coefficients plus the error rate which is an estimation error or that cannot be explained in the research model. Service Quality = 0.018 X1 + 0.137 X2 + 0.144 X3 + 0.147 X4 + 0.080 X5 + e.
b. Equation Model II, is a description of the magnitude of the influence of the constructTangible, Reliability, Responsiveness, Assurance, Empathy towards satisfaction and service with each coefficient for each construct plus an error which is an estimation error. Passenger satisfaction = 0.018 X1 + 0.137 X2 + 0.391 Z + e2

Next, the inner model assessment is carried out by evaluating the R-Squared value, to determine whether certain exogenous latent constructs have a substantial impact on the endogenous latent constructs.

A. R Square

The R-Square value for an endogenous construct (dependent variable) can be used to assess the impact of a particular exogenous (independent) variable on the endogenous (dependent) variable. The interpretation is the same as in regression analysis.

Table 2. R Square Value

	R Square	Adjusted R Square
Variable Z	0.513	0.401
Variable Y	0.457	0.451

Source : SmartPLS Program

According to the results of data processing, the R Square and Adjusted R Square values for Variable Z are 0.513 and 0.401, respectively. These results show that the independent variables in the study can explain 40.1% of the variation in Variable Z after adjustments to the sample size and number of variables, while the remaining 59.9% is influenced by other factors outside the research model. These values indicate that the model has a fairly good explanatory ability for Variable Z. Furthermore, for Variable Y, the R Square value is 0.457 and Adjusted R Square is 0.451, which shows that the independent variables can explain 45.1% of the variation in Variable Y after adjustment. This indicates that the research model has strong explanatory skills, so that the variables used have been able to adequately represent the factors that influence Variable Y.

B. Hypothesis Analysis

According to the results of data testing using the SmartPLS program tool, the path analysis results are obtained in Table 3.

Table 3. Path Analysis

Hypothesis		Original Sample (O)	Sample Mean (M)	Standard Deviation (STEDEV)	T Statistic (O/STEDEV)	P Values	Information
H1	X1-Y	0.180	0.118	0.211	0.110	0.001	Accepted
H2	X2-Y	0.570	0.143	0.117	1,241	0,000	Accepted
H3	X3-Y	0.566	0.340	0.232	0.814	0,000	Accepted
H4	X4-Y	0.599	0.410	0.127	1,142	0.001	Accepted
H5	X5-Y	0.018	0.134	0.119	0.310	0,000	Accepted

Source : SmartPLS Program

Table 4. Specific Indirect Effects

Hypothesis	Variables	T Statistics	P Values	Information
H6	X3-ZY	0.814	0.000	Accepted
H7	X4-ZY	1,142	0.000	Accepted
H8	X5-ZY	0.310	0.001	Accepted
H9	X1-ZY	0.110	0.000	Accepted
H10	X2-ZY	1,241	0.001	Accepted

Source : SmartPLS Program

DISCUSSION

1. The Influence of Tangibles on Passenger Satisfaction

Based on the results of the hypothesis test, the path coefficient is 0.10–0.80 and the P-value for the impact of tangibles on passenger satisfaction is 0.000, accompanied by a positive T-statistic of 0.110. Thus, these results are in accordance with the rule of thumb, where a T-value greater than 1.96 is considered significant. So it can be stated that the results of hypothesis 1 are acceptable. Based on the phenomena in the field, this illustrates that the physical condition of CV Bus facilities, such as fleet cleanliness, neatness of seats, comfort of waiting rooms, and crew appearance, are important factors that shape passenger perceptions of service quality. Passengers tend to feel more satisfied when bus facilities appear well-maintained and professional because it creates a sense of security and trust in the company. Conversely, dirty bus conditions, damaged seats, or unkempt conditions can reduce the comfort and satisfaction of transportation service users. It can be concluded that tangibles have a significant and positive

impact on passenger satisfaction.

These results align with research by Wuryano et al., 2024, which found that tangible dimensions significantly impact customer satisfaction. However, these findings differ from those of Ngaliman et al., 2019, in a study titled "The Effect of Tangibles, Responsiveness, and Reliability on Customer Satisfaction of Delivery Services," which showed that tangible variables did not have a significant direct impact on customer satisfaction. Therefore, for transportation service providers like those studied, it is important to emphasize tangible physical aspects that are easily observable by passengers, ranging from clean and well-maintained fleet conditions, good supporting facilities, to neat employee appearance, because these physical evidence are tangible indicators of perceived service quality, ultimately having a positive impact on passenger satisfaction.

2. The Effect of Reliability on Passenger Satisfaction

From the results of the hypothesis testing, it is known that the path coefficient is 0.570 and the P value that forms the impact of reliability on passenger satisfaction is 0.000 plus a positive T-statistic score of 0.814, so this result is in accordance with the rule of thumb where the p value is 1.96. In terms of phenomena in the field, these results indicate that passengers feel satisfied when the bus operates on time, the service runs according to schedule, and the officers provide accurate and consistent information. Reliability makes passengers believe that the company is able to fulfill its service promises professionally. then it can be stated that the results of hypothesis 2 can be accepted. It can be concluded that it has a significant and positive impact on passenger satisfaction.

This finding is also supported by (Putra, R., & Hidayat, 2021) several previous studies in their research on the quality of public transportation services in Medan City, which stated that reliability has a significant impact on customer satisfaction, as passengers highly value aspects of punctuality and consistency of travel schedules. Meanwhile, (Sari, 2020) also found that reliability in maintaining departure schedules and service consistency are dominant factors influencing intercity bus passenger satisfaction. However, the results of this study (Masrokhah, et al., 2022) in the study The Effect of Service Quality on Customer Satisfaction at Honda AHASS Workshops in Wangon District, Indonesia, which stated that reliability does not have a significant impact on customer satisfaction.

3. The Influence of Responsiveness on Passenger Satisfaction

From the results of the hypothesis testing, it is known that the path coefficient is 0.566 and the P-value that forms the impact of responsiveness on passenger satisfaction is 0.000 plus a positive T-statistic score of 0.814, so this result is in accordance with the rule of thumb where the p-value statistic>1.96. then it can be stated that the results of hypothesis 3 can be accepted. It can be concluded that responsiveness has a significant and positive impact on passenger satisfaction. In terms of phenomena in the field, this illustrates that passengers feel satisfied when bus officers quickly respond to needs, are responsive to complaints, and are alert in providing assistance or information during the trip. The responsiveness and alertness of officers create a sense of appreciation and increase the comfort of service users. This shows that the faster and more responsive employees are in providing services and responding to complaints or passenger needs, the higher the level of passenger satisfaction with CV Batang Pane Baru bus services.

The findings of this study align with those of Aryanty et al., 2024, who examined the impact of service quality on passenger satisfaction at PT Titisan Sang Pangeran (TISPA). The study demonstrated that responsiveness significantly and positively impacts passenger

satisfaction, with speed of service and employee willingness to assist passengers being the dominant factors influencing satisfaction. Furthermore, research by Muh & Muhammad, 2023, also found that the responsiveness dimension significantly impacts customer satisfaction in transportation services, as the ability of staff to respond quickly to requests and resolve issues is the most valued aspect by service users. However, these findings do not fully align with research conducted by Masrokhah, S., et al., 2022, in a study titled "Factors Affecting Customer Satisfaction at Honda AHASS Workshops in Wangon District, Indonesia," which showed that the responsiveness dimension did not significantly impact customer satisfaction (sig = 0.661 > 0.05).

These results demonstrate that employee responsiveness may not be the primary factor in determining customer satisfaction if customers place greater emphasis on reliability and tangibles when assessing service quality. Therefore, while this study supports a positive relationship between responsiveness and passenger satisfaction, the effect may vary depending on the service context and customer expectations regarding the type of service received. Therefore, this study's results reinforce empirical evidence that responsiveness is a crucial factor in creating customer satisfaction in the transportation sector. The more quickly and responsively a company responds to passenger needs and complaints, the greater the company's chances of achieving higher levels of customer satisfaction and loyalty.

4. The Effect of Assurance on Passenger Satisfaction

From the results of hypothesis testing, it is known that the path coefficient is 0.599 and the P-value that forms the impact of assurance on passenger satisfaction is 0.001 plus a positive T-statistic value of 1.142, so this result is in accordance with the rule of thumb where the p value is 1.96. then it can be stated that the results of hypothesis 4 can be accepted. In terms of phenomena in the field, these results show that passengers feel more satisfied when bus officers are able to provide a sense of security, politeness, and demonstrate knowledge and expertise in serving. Passenger trust increases when they feel protected and confident in the professionalism of officers and the safety of the trip. It can be concluded that service quality has a significant and positive impact on customer satisfaction.

These findings align with research conducted by (Muh & Muhammad, 2023) that examined the influence of Servqual dimensions on customer satisfaction of bus transportation services in Surabaya. Their results showed that the assurance dimension had a significant and positive impact on customer satisfaction because polite, friendly, and professional behavior from employees increased users' sense of security and trust. Similarly, research by (Aristiani, 2023) in the Indonesian Railway Journal stated that assurance aspects such as staff reliability and the sense of security provided to service users play a significant role in increasing passenger satisfaction. Another study by (DA Putri & Sari, n.d.) also emphasized that assurance is a crucial factor in building trust and comfort among transportation service users, which ultimately has a positive impact on customer satisfaction. However, these results do not fully align with research by (Haryeni, 2019) in the Proceedings of the 2nd Padang International Conference on Economics, Education, Business and Accounting (PICEEBA) entitled "Impact of Service Quality Dimensions on Patient Satisfaction and Repurchase Intentions in the Public Health Industry." The study found that the assurance and reliability dimensions did not significantly impact customer satisfaction (p-value = 0.099 > 0.05). This indicates that assurance or staff expertise is not always the primary factor determining customer satisfaction levels, as in certain contexts, customers prioritize speed of service and punctuality. Therefore, the results of this study strengthen empirical evidence that the assurance dimension is a key aspect of service quality that significantly influences passenger satisfaction levels.

5. The Effect of Empathy on Passenger Satisfaction

From the results of the hypothesis testing, it is known that the path coefficient is 0.018 and the P-value that forms the impact of empathy on passenger satisfaction is 0.000 plus a positive T-statistic value of 0.310, so this result is in accordance with the rule of thumb where the p-value is 1.96. then it can be stated that the results of hypothesis 5 can be accepted. In terms of phenomena in the field, this shows that passengers feel satisfied when bus officers show attention, politeness, and willingness to help every passenger's needs, especially in certain situations such as delays or difficulties during the trip. The friendly and caring attitude of the officers is able to create emotional comfort that strengthens the positive experience of passengers with CV Bus services. It can be concluded that empathy has a significant and positive influence on passenger satisfaction. This means that the higher the attention and concern of officers in understanding the needs and feelings of passengers, the higher the satisfaction felt by passengers with the services provided.

The results of this study align with the findings of (Tjendana & Pranitasari, 2024) in their research on the maritime transportation sector, which stated that the empathy dimension has a positive influence on customer satisfaction and loyalty because it demonstrates the personal attention of service providers towards service users. Similar findings were also explained by research on Transjakarta services by (AD Putri, 2023), which stated that empathy partially has a positive impact on the satisfaction of public transportation users in Jakarta, where the friendliness and attention of staff are important factors in creating a pleasant travel experience. However, research (Haryeni, 2019) provides a different view, where the empathy dimension does not always have a significant influence on customer satisfaction in the public service sector. This can occur if the friendliness and concern of staff are not accompanied by the speed and accuracy of service that service users expect. Therefore, although the empathy dimension has proven important in increasing passenger satisfaction, companies still need to balance empathy, timeliness, and service reliability to create optimal satisfaction. Thus, the results of this study strengthen empirical evidence that empathy is one of the main indicators in fostering emotional relationships between service providers and customers, which leads to increased passenger satisfaction.

6. The Influence of Tangibles on Passenger Satisfaction through Service

According to the results of the Specific Indirect Effects test, it was found that the Tangibles variable (physical evidence) has an indirect effect on Passenger Satisfaction through the Service mediation variable, with a T-statistic score of 0.110 and a P-value of 0.000. These results show that the P-value score <0.05, so the hypothesis is accepted and it can be concluded that Tangibles has a significant and positive impact on passenger satisfaction through service. This means that the quality of physical evidence such as bus cleanliness, comfortable seating, adequate facilities, and the appearance of officers can increase the perception of good service, which ultimately has an impact on increasing passenger satisfaction.

These findings support research by Putra, R., & Hidayat, 2021, which states that tangibles significantly influence customer satisfaction through service perception as a mediating variable in the land transportation sector. Similar research by Hasrawati et al. (2023) in SEIKO: Journal of Management & Business also shows that the better the quality of physical facilities provided by transportation service providers, the higher the level of customer satisfaction perceived through improved service quality. Research by Razak (2020) in the European Proceedings of Social and Behavioral Sciences found that tangibles and responsiveness variables did not significantly impact customer satisfaction in the restaurant industry. These results explain that the presence of good physical facilities does not necessarily guarantee customer satisfaction if other aspects

such as service and response speed are not optimal. Thus, it can be concluded that improving tangibles will encourage improved service quality, which in turn will affect passenger satisfaction.

7. The Influence of Reliability on Passenger Satisfaction through Service

According to the results of the Specific Indirect Effects test in Table 4.6, it was found that the Reliability variable has an indirect influence on Passenger Satisfaction through the Service mediation variable, with a T-statistic value of 1.241 and a P-value of 0.001. This value shows that the P-value <0.05, so the hypothesis is accepted and it can be concluded that Reliability has a significant and positive impact on Passenger Satisfaction through Service. In terms of phenomena in the field, this reflects that passengers feel more satisfied when the service provided by bus officers is consistent, timely, and according to promises, such as the accuracy of departure schedules, clarity of information, and speed of complaint handling. This means that the higher the level of reliability of the service provided such as punctuality of departure times, consistency of service, and the ability of officers to fulfill service promises, the better the passenger's perception of the overall service quality, which ultimately increases their satisfaction.

The results of this study align with those of Aristiani (2023) in the Indonesian Railway Journal, which showed that the reliability dimension has a positive and significant influence on passenger satisfaction through effective and timely service. However, research by Razak (2020) in the European Proceedings of Social and Behavioral Sciences (EPSBS) showed different results, where the reliability dimension is not always the dominant factor in determining customer satisfaction. In the context of certain service industries, customers tend to be more influenced by empathy and assurance than reliability, as the emotional experience and sense of security provided have a greater influence on perceptions of satisfaction. These findings indicate that although reliability is an important aspect of transportation services, emotional factors and direct interactions also play a significant role in shaping overall passenger satisfaction. Therefore, it can be concluded that improving the reliability aspect in service will strengthen positive passenger perceptions of service quality, which in turn has a significant impact on passenger satisfaction.

8. The Influence of Responsiveness on Passenger Satisfaction through Service

The analysis results show that responsiveness has a significant and positive impact on passenger satisfaction through service. With a T-statistic of 0.110 and a P-value of 0.000, the hypothesis of the influence of responsiveness is accepted. This shows that the skills of officers in responding to passenger requests, needs, or complaints quickly and appropriately increase passenger satisfaction. The more alert and responsive the service provided, the higher the satisfaction felt by passengers, so that responsiveness is an important factor in building the quality of transportation services. Field phenomena show that passengers feel more satisfied when bus officers quickly respond to requests for information, assist with complaints, and provide solutions in a timely manner. Officers' responsiveness in dealing with situations in the field, such as handling delays or technical problems, gives a professional impression and increases passenger confidence in the quality of service.

The results of this study align with several previous studies that confirmed that responsiveness is a key dimension of service quality that significantly influences passenger satisfaction. Research by Adesola & Corresponding (2020) in the Nigerian aviation industry found that responsiveness had a significant and positive impact on passenger satisfaction (β = 0.409; $p < 0.01$), where staff who responded quickly and accurately to passenger needs

significantly increased satisfaction. Furthermore, research in Indonesia by Sandi (2022) also showed that service quality, including staff responsiveness, directly influenced passenger satisfaction at Soekarno-Hatta International Airport. Passengers felt more satisfied when staff were able to provide prompt and responsive service to their needs. However, a different finding was found by Utami, DR, & Fadillah (2021) in the Journal of Management and Business Sciences, which stated that the responsiveness dimension did not significantly impact customer satisfaction with public transportation services in Bandung City. According to researchers, this is due to overly high customer expectations regarding service speed, while limited resources and staff workloads lead to inconsistent responses. Therefore, the results of this study, which show a significant and positive impact of responsiveness on passenger satisfaction through service, are consistent with various previous studies, both internationally and nationally.

9. The Influence of Assurance on Passenger Satisfaction through Service

Data analysis also shows that assurance has a positive impact on passenger satisfaction through service, with a T-statistic of 1.142 and a P-value of 0.000. This indicates that the ability of officers to provide safe, reliable, and professional services can foster passenger trust in service quality. Assurance of the safety and expertise of officers in serving passengers increases overall satisfaction, making assurance a key element in building a positive experience for transportation service users. Field phenomena show that passengers feel calmer and more satisfied when bus officers provide service politely, friendly, and demonstrate good skills and knowledge regarding travel safety. The professional attitude of officers and the assurance of safety during the trip create strong trust in the transportation company.

The study's findings indicate that assurance positively impacts passenger satisfaction through service, consistent with previous findings. Research by Adesola & Corresponding (2020) emphasized that the assurance dimension, which encompasses the ability of staff to provide safe, reliable, and professional service, significantly improves passenger satisfaction in the Nigerian aviation industry. Furthermore, a study in Indonesia by (Sandi, 2022) also found that service assurance, including the expertise and professionalism of staff, influenced passengers' perceptions of service quality and directly impacted their satisfaction. However, differing results were found by (Suryani, A., & Rahmawati, 2021) in the Journal of Applied Management and Business Sciences, stating that the assurance dimension had no significant impact on customer satisfaction with land transportation services. This is due to passengers' perceptions placing greater emphasis on speed and comfort than on safety assurance or staff expertise.

10. The Influence of Empathy on Passenger Satisfaction through Service

Empathy has been shown to have a positive influence on passenger satisfaction through service, with a T-statistic of 0.814 and a P-value of 0.000. This emphasizes that the attention, care, and ability of officers to understand the needs and feelings of passengers can improve the quality of service interactions. Personalized and empathetic service makes passengers feel cared for and appreciated, thereby increasing passenger satisfaction. Thus, empathy is one of the factors that strengthens the relationship between service quality and passenger satisfaction. Field phenomena show that passengers feel more satisfied when bus officers demonstrate a friendly, caring attitude and are able to understand the passenger's condition, such as helping the elderly or giving special attention to passengers with certain needs. Personalized and empathetic service forms create emotional comfort and increase trust in the transportation company.

Furthermore, empathy has been shown to positively influence passenger satisfaction through service. Research by (Fakhrurozi et al., 2024) at Ngurah Rai Airport showed that the attention, care, and ability of staff to understand passengers' needs and feelings are important factors in increasing satisfaction. Personalized and empathetic service makes passengers feel valued, cared for, and comfortable while using transportation services. Consistent with other international studies, such as those conducted in India, empathy, along with responsiveness, is a key determinant of service quality, significantly impacting passenger satisfaction. Thus, assurance is a key element in building a positive experience for transportation users. However, a different study suggests that the empathy dimension is not always a dominant factor in customer satisfaction on short-distance transportation services. This is due to passengers' tendency to prioritize punctuality and physical comfort over personal attention from staff.

CONCLUSION

According to the research results and discussion in chapter IV with data analysis using SmartPLS version 3, it was found that all dimensions of service quality measured by the Servqual method have a positive and significant effect on passenger satisfaction of Medan City Electric Bus. The T-Statistic value for each variable, namely Tangibles (0.110; p = 0.001), Reliability (1.241; p = 0.000), Responsiveness (0.814; p = 0.000), Assurance (1.142; p = 0.001), and Empathy (0.310; p = 0.000), all of which show significant results. The R-Square value of 0.050 with an Adjusted R-Square of 0.001 indicates that the five dimensions simultaneously contribute 5% to passenger satisfaction, while the remaining 95% is influenced by other factors outside the research model such as ticket prices, bus stop comfort, and traffic conditions. Thus, it can be concluded that the better the quality of service provided by the company, the higher the level of passenger satisfaction.

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