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The Mediating Role of Service Quality in the Relationship Between Environment and Price on Customer Satisfaction

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ABSTRACT

This study examines the mediating role of service quality in the relationship between environment and price on customer satisfaction at Hotel Budiman Balikpapan, Indonesia. Previous studies have not clearly explained how service quality acts as a mechanism linking environmental and pricing factors to satisfaction, creating a research gap in hospitality management. Using a quantitative approach with SEM-PLS, data were obtained from 97 hotel guests through a structured questionnaire using a five-point Likert scale adapted from SERVQUAL indicators. The results show that the environment has no significant direct or indirect effect on satisfaction, while price has no direct effect but significantly affects satisfaction through service quality. Service quality has a positive and significant impact on customer satisfaction, acting as a full mediator between price and satisfaction. These findings highlight that customers evaluate prices based on perceived service quality rather than nominal value. The novel contribution of this study lies in replacing the promotion variable with service quality as a mediator, enriching the theoretical model of customer satisfaction formation and providing practical insights for hotel management to focus on service quality improvement strategies.

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1. INTRODUCTION

The hospitality industry plays a critical role in regional economic growth, particularly in developing areas such as East Kalimantan. Intense competition among hotels requires management to create strategies that not only emphasise physical facilities but also focus on improving service quality to enhance customer satisfaction and loyalty. Previous studies have shown that environmental conditions and pricing strategies significantly influence customer satisfaction; however, these effects are often inconsistent across contexts (Hilman & Kristiawan, 2023; Mella & Hulu, 2023). Some studies found that price and environment directly affect satisfaction, while others suggest these relationships are indirect and mediated by service quality (Gemina et al., 2023; Trisna & Zuraidah, 2022). This inconsistency indicates a research gap in understanding the mechanism by which service quality operates as a mediating variable between environment and price on satisfaction, particularly in the hotel industry.

Hotel Budiman Balikpapan was chosen as the empirical setting because it represents a medium-class hotel facing high competition from newer and higher-rated establishments. Despite offering competitive prices and a strategic location in the city centre, customer feedback has indicated variability in satisfaction levels, especially related to service responsiveness and perceived value. This provides a relevant context to explore whether environmental and pricing factors influence satisfaction directly or through perceived service quality. The novelty of this research lies in the modification of the previous model developed by Kurniawan & Marka (2025) and Jatmiko & Adrilah (2024), where the promotion variable served as a mediator between price, location, and purchase decisions. This study advances that framework by replacing promotion with service

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quality as a mediating construct—aligning it more closely with the hospitality context where service experience plays a pivotal role in shaping satisfaction. Such a modification provides a new theoretical contribution to the literature on customer satisfaction formation.

The quality of service in the hospitality industry is a crucial aspect that greatly affects customer satisfaction. According to research, the quality of service is determined by several dimensions, including reliability, responsiveness, assurance, empathy, and the physical appearance of the service (Bilqis et al., 2024). High quality of service not only increases customer satisfaction but also encourages loyalty, which means that customers will be more likely to come back and recommend the service to others (Gemina et al., 2023; Trisna & Zuraidah, 2022). Price also has a significant influence on customer satisfaction. Good service quality must be balanced with competitive prices to be accepted by customers (Trisna & Zuraidah, 2022). The environment has an important role in influencing customer satisfaction, especially in the context of service industries such as restaurants and hotels. Several environmental factors, including cleanliness, layout, lighting, and physical facilities, can significantly affect a customer's perception of the quality of service they receive. Research shows that customers tend to choose where to eat based on these aspects, which shows how important the environment is in shaping the customer experience (Dharmawan & Rachmaniyah, 2020).

Intervening variables work environment have an important role in influencing endogenous variables Job Satisfaction (Jatmiko & Nurhalimah, 2025). An attractive and clean physical environment not only increases customer satisfaction but also has the potential to increase customer loyalty (Saodin, 2021; Gemina et al., 2023). In this context, the creation of a comfortable and inviting atmosphere is essential to stimulate customer satisfaction. For example, according to research conducted by Sahayati et al. (2022). A good environment does have a positive impact on customer well-being, which in turn contributes to a positive perception of the services provided. Trisna & Zuraidah (2022) showed that service quality and price have a positive and significant effect on customer satisfaction, where both interact with each other to determine customer experience and perception of service. Melza & Widarta (2024) highlighted the importance of the price dimension in influencing satisfaction, noting that price reliability and transparency have a significant impact on how customers rate their satisfaction with a product. This is in line with research from Leke et al., which shows that customers often associate high prices with better quality, which further affects their satisfaction and loyalty (Leke et al., 2023).

An effective pricing strategy involves not only numbers, but also takes into account how prices are perceived by customers. Hariasih et al. explain that customer satisfaction is greatly influenced by the price given, especially in the retail sector, where low prices can attract more visitors and improve the overall customer experience (Hariasih et al., 2024). Other research has also found that good price perception serves as a mediator in the relationship between service quality and customer loyalty, confirming the importance of satisfaction as a key variable in customer retention (Gemina et al., 2023; Candra & Sunaryanto, 2023).

Good facilities in public transportation, such as on trains, play a big role in determining the level of consumer satisfaction (Adawia et al., 2020). Service-related factors, such as promotion and price perception, also exist in the context of environmental influences on service quality and customer satisfaction. Apriani and Nainggolan (2022) stated that service quality, price perception, and promotions can influence consumer purchasing decisions, which indirectly reflect the interaction between the business environment and customer satisfaction. In the tourism sector, Andi & Yi (2025) point out that the perception of the tourism environment can affect the perceived value and attachment of places by tourists, which is important for improving their psychological satisfaction. Ratnasari & Marfu (2023) point out that the external environment, including business factors and practices applied, significantly affects the quality of services when managed properly.

Pricing also plays an important role; prices that are considered reasonable can strengthen a positive perception of the quality of services provided. The determination of appropriate pricing plays a vital role in shaping customer perceptions; when prices are viewed as fair, they can reinforce a favourable image of the service quality provided by the company. Fair pricing significantly influences customers' perception, strengthening their belief in the service quality delivered (Nurrahman et al., 2020). If the price set is relatively high but not

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accompanied by proportional service quality, it may result in decreased customer satisfaction. When customers perceive that the price exceeds the value or quality of the service received, they are likely to experience dissatisfaction and question the fairness of the offering. Excessive pricing without matching service quality tends to reduce customer satisfaction levels (David & Juwita, 2023).

Price is an important factor in consumers' decisions to choose a particular service, with the quality of service being one of the supporting variables that strengthen the decision (Hariadi et al., 2021). The quality of service can be determined by a variety of factors, but price is often the main point of concern for many consumers. Prices are supposed to be judged in the context of overall quality, with higher prices usually associated with better quality, although they can vary based on individual perceptions (Anam et al., 2021). Therefore, it can be concluded that the influence of price on service quality is complex and interrelated. Careful pricing and emphasis on service quality not only contribute to customer satisfaction, but it can also create long-term loyalty. Successful management in improving these two aspects can provide a competitive advantage in an increasingly congested market (Dewi, 2020).

Various previous studies have shown that service quality, environment, and price contribute significantly to customer satisfaction. In fact, in practice, customer satisfaction is often formed through the mechanism of perception of service quality influenced by environmental factors and prices. For example, customers can assess the price if the quality of service received is in accordance with expectations or feel comfortable with the hotel environment because it is reflected in the quality of service provided. Jatmiko and Adrilah stated that price and location do not have a significant influence directly on the purchase decision. On the other hand, promotions serve as full mediation for the influence of price and location on purchase decisions, meaning that without promotions, price and location will not be enough to influence purchasing decisions (Jatmiko & Adrilah, 2024). This can certainly be tried by changing the promotion variable to service quality. Therefore, in this study, it will be modified by modifying the quality of service to be a mediating variable for the environment and price on customer satisfaction.

Based on theoretical foundations and prior empirical findings, the following hypotheses are proposed: (a) H1: Environment has a positive and significant effect on service quality. (b) H2: Price has a positive and significant effect on service quality. (c) H3: Service quality has a positive and significant effect on customer satisfaction. (d) H4: Service quality mediates the relationship between price and customer satisfaction. This study aims to analyse the role of service quality mediation in the relationship between the environment and price on customer satisfaction by using the Structural Equation Modelling-Partial Least Squares (SEM-PLS) method with the title The Mediating Role of Service Quality in the Relationship Between Environment and Price on Customer Satisfaction the Budiman Hotel, Balikpapan. With this model, the research is expected to make a theoretical contribution in the form of strengthening the literature on the mechanism of forming customer satisfaction, as well as practical implications for hotel management in designing more effective service strategies.

2. RESEARCH METHOD

This study uses a quantitative descriptive method with the aim of determining the role of service quality mediation in the relationship between environment and price on customer satisfaction of Hotel Budiman Balikpapan. The quantitative descriptive method aims to describe existing data in the form of numbers or statistics, so that the results can be used to better understand the phenomenon being studied (Arifin & Merdekawati, 2020). The quantitative method was chosen because it is suitable for analysing the relationship between variables using a questionnaire instrument with a Likert scale, so that the results obtained can be generalised more objectively. For primary data collection, a structured questionnaire based on relevant variable indicators was used. The 5-point Likert scale is used to measure respondents' perception of the variables being studied (Jatmiko & Nurhalimah, 2025). The use of the 5-point Likert scale has several advantages, including simplicity and ease for respondents to provide answers, which can improve participation rates and data accuracy (Valencia & Layman, 2021). Primary data were collected through a structured questionnaire distributed directly to guests at the hotel reception area and through online links shared after checkout. The data collection period lasted for three months, from January to March 2025, to ensure an

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adequate response rate and representation of different customer segments (business and leisure travellers). The research instrument was developed based on validated scales from previous studies, particularly the SERVQUAL model proposed by Parasuraman, Zeithaml, and Berry (Oktavianes et al., 2024), which includes five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Each item was measured using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). The questionnaire was adapted to the hotel context and pre-tested on 20 respondents to ensure clarity and relevance. Results from the pilot test indicated acceptable internal consistency (Cronbach's Alpha > 0.7 for all constructs), confirming that the instrument was valid and reliable for data collection.

This study adopts a quantitative descriptive approach to analyse the mediating role of service quality in the relationship between environment and price on customer satisfaction at Hotel Budiman Balikpapan, Indonesia. The quantitative method was chosen because it allows statistical testing of relationships between variables through measurable indicators and supports generalisation of findings.

2.1 Population and Sample

The population of this study comprises all guests who stayed at Hotel Budiman Balikpapan during the research period. Based on the average monthly occupancy data, the number of potential respondents was approximately 500 guests. Using the rule of thumb for Structural Equation Modeling (SEM), which recommends a minimum sample size of 10 times the number of indicators (Islami & Nugroho, 2022), this study employed 97 respondents as the sample. The purposive sampling technique was applied to select respondents who had stayed at least once at the hotel and were aged 18 years or older to ensure relevant perceptions of service experience. Of the 97 valid responses, 58 per cent were male and 42 per cent female. Most respondents were aged 26–40 years (45 per cent), representing the dominant age group of hotel customers. Approximately 60 per cent were business travellers, while 40 per cent were leisure guests, indicating diverse service perceptions. This demographic distribution reflects the hotel's customer composition and provides a representative basis for analysing variations in service quality perceptions and satisfaction levels.

2.2 Data Analysis Technique

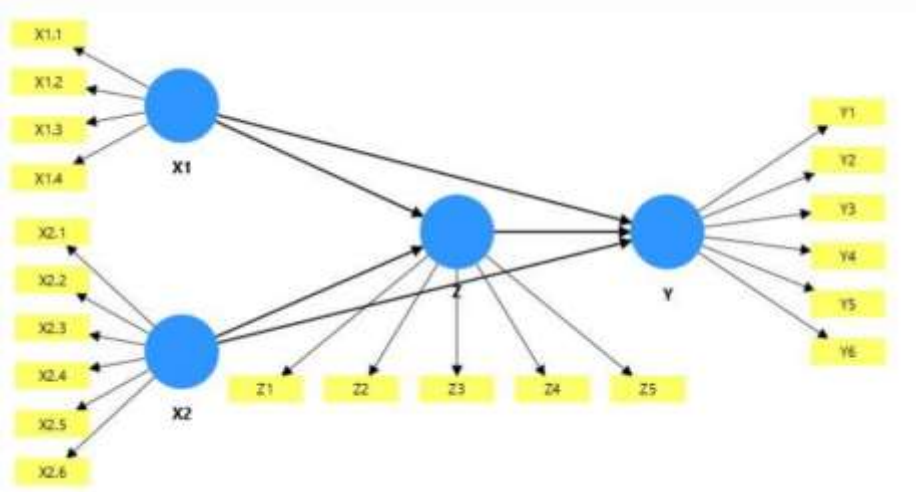


Fig 1. Model Structure of the Relationship Between Environment and Price on Customer Satisfaction

Description:

(1). X1=Environment, X1.1=Exterior (Signage), X1.2=Exterior (Parking area), X1.3=Interior Equipment), X1.4=Interior (Layout).
(2). X2=Price, X2.1=Value/Benefits, X2.2=Price reflects image, X2.3= Price-quality relationship, X2.4=Price expectation, X2.5= Competitive price, X2.6= Fair price.
(3). Z=Service Quality, Z1=Tangibles, Z2=Reliability, Z3=Responsiveness, Z4=Assurance, Z5=Empathy.
(4). Y= Customer Satisfaction, Y1= Overall satisfaction, Y2= Importance of quality, environment, and price, Y3= Expectation confirmation, Y4= Repurchase intention, Y5= Willingness to recommend, Y6= Complaint handling.

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Data were analysed using Partial Least Squares–Structural Equation Modelling (PLS-SEM) with SmartPLS 4 software. The analysis was conducted in two main stages. The first stage involved the evaluation of the outer model, which tested the reliability and validity of the measurement model using factor loadings (> 0.7), Average Variance Extracted (AVE > 0.5), Composite Reliability (CR > 0.7), and discriminant validity based on the Fornell–Larcker criterion. The second stage assessed the inner model, focusing on the estimation of path coefficients, R^2 values, effect sizes (f^2), and mediation effects through the bootstrapping procedure with 5,000 resamples. To enhance transparency, Figure 1 illustrates the analytical flow of the SEM-PLS process, including Model Specification, Outer Model Evaluation, Inner Model Evaluation, Model Fit Testing (SRMR, NFI), and Hypothesis Testing with Mediation Analysis. To enhance transparency, Figure 1 presents the analysis flowchart summarising the SEM-PLS procedure: Model Specification → Outer Model Evaluation → Inner Model Evaluation → Model Fit Testing (SRMR, NFI) → Hypothesis Testing and Mediation Analysis.

3. RESULTS AND DISCUSSIONS

3.1. Result

The results obtained after calculating the PLS-SEM Algorithm and making corrections to various parameters yielded the final model structure, as shown in Figure 2. In the figure, several indicators show reductions due to a lack of value provisions.

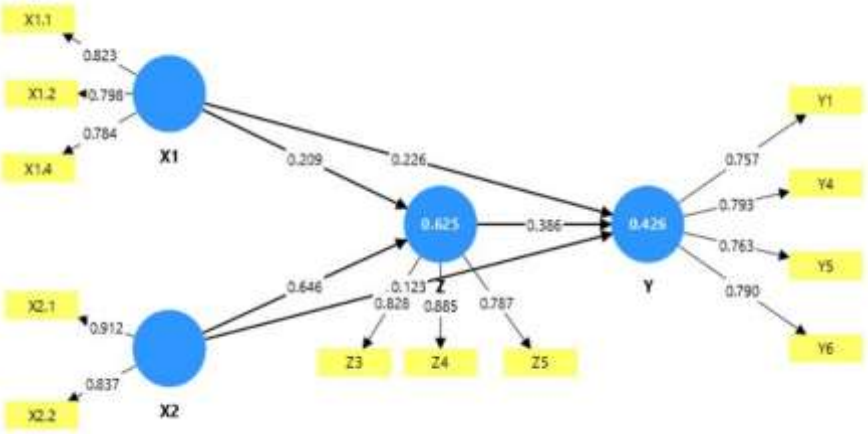


Fig 2. Model Structure-Outer Loadings

Outer Loadings. Outer Loadings are a measure that indicates the extent to which an indicator can represent latent variables in a Structural Equation Modelling (SEM) model based on Partial Least Squares (PLS). An Outer Loadings value greater than 0.7 indicates that the indicator has a substantial contribution to the latent variable and is worth maintaining. Meanwhile, values between 0.4 and 0.7 can still be considered to be maintained if the Average Variance Extracted (AVE) and Composite Reliability (CR) remain in compliance with the established criteria. Outer Loadings play an essential role in assessing the validity of convergences, ensuring the reliability of indicators, and determining the feasibility of indicators in research models (Zazilah et al., 2023). Table 1 presents the values of the outer loadings, all of which are greater than 0.7.

Construct Reliability and Validity. Construct Reliability and Validity are measurements in Structural Equation Modelling (SEM) that ensure a construct or latent variable is measured consistently and accurately through the indicators used. Reliability refers to the extent to which a construct provides consistent results, which can be calculated using Cronbach's Alpha and Composite Reliability (CR), with an ideal value of ≥ 0.7 to indicate good reliability. Meanwhile, validity ensures that the indicators in the model measure the construct in question.

Discriminant Validity. There are two main types of validity, namely convergent validity, which is assessed through Average Variance Extracted (AVE) with a minimum value of 0.5, and discriminant validity, which aims to ensure that a construct does not have an excessive correlation with other constructs, which can be tested

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using the Fornell-Larcker Criterion or Heterotrait-Monotrait Ratio (HTMT) method (Pahmi et al., 2024; Haji-Othman & Yusuff, 2022). Construct Reliability and Validity Results as per Table 2. The values of all Cronbach's alphas and composite reliability are above 0.7, and the AVE is above 0.5. Discriminant validity is a test in Structural Equation Modelling (SEM) that ensures that a construct has a clear difference from other constructs in the research model. Two standard methods for assessing discriminant validity are the Fornell-Larcker Criterion and Cross Loadings. The Fornell-Larcker criterion compares the square root of the Average Variance Extracted (AVE) of each construct with the correlation between constructs.

Table 1. Outer Loadings-Matrix

	X1	X2	Z	Y
X1.1	0.823			
X1.2	0.798			
X1.4	0.784			
X2.1		0.912		
X2.2		0.837		
Y1			0.757	
Y4			0.793	
Y5			0.763	
Y6			0.790	
Z3				0.828
Z4				0.885
Z5				0.787

Source: data processed, 2025

Table 2. Construct Reliability and Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
X1	0.723	0.725	0.844	0.544
X2	0.701	0.741	0.868	0.766
Y	0.783	0.790	0.858	0.603
Z	0.781	0.795	0.873	0.695

Source: data processed, 2025

Table 3. Discriminant Validity – Fornell-Larcker

	X1	X2	Y	Z
X1	0.802			
X2	0.604	0.875		
Y	0.531	0.557	0.776	
Z	0.600	0.773	0.616	0.834

Source: data processed, 2025

Table 4. Discriminant Validity – Cross Loadings

	X1	X2	Y	Z
X1.1	0.823	0.480	0.377	0.557
X1.2	0.798	0.453	0.461	0.468
X1.4	0.784	0.524	0.443	0.412
X2.1	0.614	0.912	0.546	0.765
X2.2	0.422	0.837	0.416	0.567
Y1	0.486	0.531	0.757	0.546
Y4	0.410	0.453	0.793	0.515
Y5	0.426	0.295	0.763	0.298
Y6	0.314	0.397	0.790	0.497
Z3	0.377	0.628	0.442	0.828
Z4	0.521	0.739	0.587	0.885
Z5	0.598	0.553	0.501	0.787

Source: data processed, 2025

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Discriminant validity is considered adequate if the square root of AVE of a construct is greater than the correlation between that construct and other constructs. This indicates that the construct is more effective in explaining the variance of its indicators than the variance it shares with different constructs. Cross-loadings evaluate the validity of the discriminator by comparing the correlation between the indicator and its construct with the correlation of that indicator against other constructs. Indicators are discriminantally valid if they have a higher load on the construct they measure compared to loading on other constructs (Zazilah et al., 2023). In Table 3. It can be seen that the value of each construct is greater than the correlation between the construct and the other constructs, in Table 4. It can be seen that the loading is higher for the construct being measured compared to the loading for other constructs.

Model Fit Evaluation. The fit model in Partial Least Squares Structural Equation Modelling (PLS-SEM) refers to the evaluation of the extent to which the developed model matches the empirical data collected. Model fit assessment is critical to ensure that it accurately and reliably represents the relationships between variables. Some of the indices commonly used in PLS-SEM to assess fit models include the Standardised Root Mean Square Residual (SRMR) and Normed Fit Index (NFI). SRMR measures the average difference between the observed correlation matrix and the one predicted by the model; a value of ≤ 0.08 indicates good, and a value of ≤ 0.10 can be said to be acceptable. Meanwhile, the NFI compares the tested model with the baseline model, where a value close to 1 indicates a good model (Jatmiko & Nurhalimah, 2025).

In Table 5, based on the results of the fit model test on SmartPLS, an SRMR value of 0.096 was obtained. This value is still below the tolerance limit of 0.10, so it can be said that the model has a fairly good level of suitability, even though it does not meet the ideal criteria (<0.08). Furthermore, the NFI value of 0.697 is still below the ideal criterion (≥0.90), thus showing that the model's compatibility with the data is still relatively low. Thus, overall, the model in this study can be said to have a sufficient or marginal fit, so it is still acceptable for further analysis, even though it has not reached the category of an excellent fit model. These results indicate that the model demonstrates a marginal fit, meaning that although it does not fully meet ideal standards, it remains statistically acceptable for exploratory SEM-PLS analysis (Hair & Alamer, 2022). The lower NFI value likely results from the model's moderate sample size and the inclusion of multiple latent constructs. In exploratory social science studies, such values are still considered acceptable when the theoretical justification is strong (Ul Haq et al., 2024).

Table 5. Model Fit

	Saturated model	Estimated model
SRMR	0.096	0.096
d-ULS	0.713	0.713
d-G	0.299	0.299
Chi-square	163.687	163.687
NFI	0.697	0.697

Source: data processed, 2025

Multicollinearity Test. The Variance Inflation Factor (VIF) is a measure used in regression analysis to assess the degree of multicollinearity among independent variables. VIF measures the extent to which the estimated variance of the regression coefficient increases due to the correlation between independent variables. High VIF values indicate the presence of significant multicollinearity, which can affect the reliability and interpretation of regression models. In general, a VIF value above 10 is considered to indicate high multicollinearity, while a value between 5 and 10 indicates a potential problem that requires further attention (Ul Haq et al., 2024). In Table 6, it can be seen that all VIF values are less than 5, so this model is safe from multicollinearity. The Variance Inflation Factor (VIF) values for all indicators were below 5.0, indicating no serious multicollinearity issues among independent variables. This result confirms the stability of the regression coefficients used in the inner model.

Coefficient of Determination (R^2). The R-squared, or coefficient of determination, is a measure that indicates the proportion of variance in a dependent variable that can be explained by an independent variable in a regression model. The value of R- squared ranges from 0 to 1; a value close to 1 indicates that the model can

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account for most of the variability in the dependent variable, while a value close to 0 indicates the opposite. The value of R-squared will be Substantial if ≥ 0.67 (Muriyatmoko, 2018). Based on Table 7, the R-squared for Z is 0.617, or 61.7 per cent, while the R-squared for Y is 0.408, or 40.8 per cent. Therefore, both can be considered substantial. The R-square value for the endogenous variable Service Quality (Z) was 0.625, categorised as substantial, meaning 62.5 per cent of its variance can be explained by Environment (X1) and Price (X2). The R-square for Customer Satisfaction (Y) was 0.426, classified as moderate, indicating that 42.6% of its variance is explained by Service Quality, Environment, and Price. These findings reveal that the structural model possesses adequate explanatory power in predicting satisfaction through service quality.

Table 6. Collinearity Statistics (VIF)

	VIF		VIF
X1.1	1.478	**Y1**	1.330
X1.2	1.386	**Y4**	1.598
X1.4	1.410	**Y5**	1.682
X2.1	1.410	**Y6**	1.670
X2.2	1.410	**Z3**	1.750
		Z4	1.905
		Z5	1.444

Source: data processed, 2025

Table 7. R-square

	R-square	R-square adjusted
Y	0.426	0.408
Z	0.625	0.617

Source: data processed, 2025

The R-square value of Y = 0.426 with an adjusted R-squared of 0.408 indicates that the predictive variables in the model are able to explain about 42.6 per cent of the variation in Y, while the remaining 57.4 per cent is explained by factors outside the model. Thus, the value of R-square Y belongs to the medium/moderate category. Meanwhile, the R-square value of Z = 0.625 with an adjusted value of 0.617 shows that the independent variables are able to explain about 62.5 per cent of the variation in Z, while 37.5 per cent is influenced by other variables outside the model. Based on the same criteria, this value is in the strong/substantial category.

Path Coefficients and Significance. Path Coefficients are values that show the direction and strength of relationships between variables in path analysis. Path analysis is an extension of the multiple regression technique used to evaluate causal models by examining relationships between a set of variables. The path coefficient is obtained from the standard regression coefficient and is used to calculate the direct, indirect, and total effects in the model. In the context of Structural Equation Modelling (SEM), path coefficients help in understanding the extent to which independent variables affect dependent variables, either directly or through mediator variables. The value of this coefficient ranges from -1 to 1; A positive value indicates a unidirectional relationship, while a negative value indicates an opposite relationship. The closer the absolute value of 1, the stronger the relationship between these variables. In Table 8, it is evident that all values are positive, indicating a one-way relationship between all variables in this study.

Table 8. Path Coefficients

	X1	X2	Y	Z
X1			0.226	0.209
X2			0.123	0.646
Y				
Z			0.386	

Source: data processed, 2025

Based on the results of the path coefficient estimation, it can be seen that all relationships between variables are positive, meaning that the increase in one construct will encourage an increase in other related constructs. The influence of X1 on Y (0.226) and X1 on Z (0.209) showed a positive but relatively weak relationship. The effect of X2 on Y (0.123) is also positive, but it is so weak that its contribution to Y is still limited. In contrast, X2 on Z (0.646) had the strongest and dominant influence, indicating that X2 was the main determining factor for Z. Meanwhile, the influence of Y on Z (0.386) was in the moderate category, indicating that the Y variable also played a fairly important role in increasing Z.

Table 9. Path Coefficients Bootstrapping

	Original sample (O)	Sample mean (M)	Standard deviation	t-Statistics	p-Values
X1 → Y	0,226	0,232	0,132	1,709	0,087
X1 → Z	0,209	0,212	0,102	2,054	0,040
X2 → Y	0,123	0,121	0,169	0,726	0,468
X2 → Z	0,646	0,642	0,088	7,303	0,000
Z → Y	0,386	0,386	0,141	2,743	0,006

Source: data processed, 2025

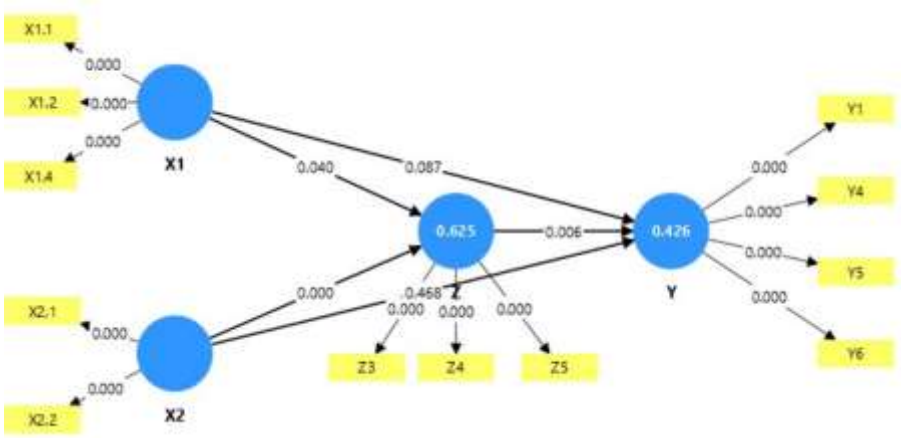


Fig 3. Model Structure-Path Coefficients

The P-value in Partial Least Squares Structural Equation Modelling (PLS-SEM) is used to test the statistical significance of the path coefficients in the model. The value of p indicates the probability that the observed outcome occurred by chance. In the context of PLS-SEM, p-values are typically obtained through a bootstrapping procedure, a resampling technique that generates an empirical sample distribution to estimate the significance of model parameters. By bootstrapping, researchers can get confidence intervals and test hypotheses related to path coefficients without assuming a specific distribution (Hair & Alamer, 2022). The interpretation of the p-value in PLS-SEM, the P-value < 0.05, indicates that the relationship between the variables is statistically significant at a significance level of 5 per cent, so that the null hypothesis can be rejected. A P-value ≥ 0.05 indicates that the relationship between variables is not statistically significant at a 5 per cent significance level, so there is insufficient evidence to reject the null hypothesis.

Based on the results of the bootstrapping path coefficients test in Table 9, it was found that not all paths in the model had a significant influence. The path from X1 to Y has a coefficient of 0.226 with a t-statistic value of 1.709 (<1.96) and a p-value of 0.087 (>0.05), so it is declared insignificant. The same was also the case with the X2 path against Y with a coefficient of 0.123, a t-statistic of 0.726 (<1.96), and a p-value of 0.468 (>0.05), which suggests that the effect was not significant. In contrast, the X1 to Z path showed significant results with a coefficient of 0.209, a t-statistic of 2.054 (>1.96), and a p-value of 0.040 (<0.05). The X2 to Z path exerts the most dominant influence with a coefficient of 0.646, t-statistic 7.303, and a p-value of 0.000, which means it is very significant. In addition, the Z-to Y path was also proven to be significant with a coefficient of 0.386, a t-statistic of 2.743, and a p-value of 0.006. Thus, it can be concluded that the Z variable plays an important role as a mediating variable, because although X1 and X2 do not

have a direct significant effect on Y, they both have a significant effect on Z, while Z is shown to have a significant effect on Y.

Equation of the 1st sub-structure:

Z = b1.X1 + b2.X2 + e

= 0,209.X1 + 0,646.X2

Equation of the 2nd substructure :

Y = b1.X1 + b2.X2 + b3.X3 + e

= 0,226.X1 + 0,123.X2 + 0,386.X3

In Table 10, the indirect relationship from X1 to Y through Z > 0.05, which means the relationship is insignificant, while X2 to Y through Z < 0.05, which means the relationship is significant.

Table 10. Specific Indirect Effects Bootstrap

	Original sample (O)	Sample mean (M)	Standard deviation	t-Statistics	p-Values
X_1->Z->Y	0,081	0,082	0,052	1,565	0,118
X_2->Z->Y	0,249	0,247	0,098	2,542	0,011

Source: data processed, 2025

Table 11. F-square

	X1	X2	Y	Z
X1			0.053	0.074
X2			0.010	0.706
Y				
Z			0.097	

Source: data processed, 2025

Based on the results in Table 10 regarding Specific Indirect Effects Bootstrap, it can be seen that the indirect influence path of the X_1 variable on Y through Z shows an original sample value of 0.081 with a t-statistic value of 1.565 and a p-value of 0.118. This indicates that although the direction of the influence is positive, the influence is not significant because the p-value is greater than 0.05. Thus, Z is not able to act as an effective mediator in the relationship between X_1 and Y. Conversely, the indirect influence path of the variable X_2 on Y through Z shows an original sample value of 0.249 with t-statistics of 2.542 and a p-value of 0.011. These results show that the indirect influence of X_2 on Y through Z is positive and significant, because the p-value is less than 0.05. This means that Z can function as a strong and significant mediator in explaining the relationship between X_2 and Y. Thus, it can be concluded that Z's mediation role is more effective in strengthening the relationship between X_2 and Y than the relationship between X_1 and Y.

Based on the results in Table 9 and Table 10, it can be explained that the variable Z has a different role in mediating the relationship between X_1 and X_2 to Y. In the relationship between X_1 and Y, both the direct effect (p = 0.087) and the indirect effect through Z (p = 0.118) are not significant. This shows that Z is not able to mediate the influence of X_1 on Y, so it can be concluded that Z is not a mediator in the relationship. In contrast, in the relationship of X_2 to Y, the direct effect was shown to be insignificant (p = 0.468), but the indirect effect through Z was significant (p = 0.011). This condition indicates that the influence of X_2 on Y is entirely channelled through Z. Thus, Z can be said to play the role of a full mediator in the relationship between X_2 and Y, while in the relationship of X_1 to Y, the role of Z is not proven to be a mediator.

Evaluation of structural models in PLS-SEM includes a variety of criteria, including f-squared, which are used to assess effect sizes in the analysis of relationships between latent variables (Jatmiko & Nurhalimah, 2025). The general criteria for rotating the F-Square are 0.02 (small), 0.15 (medium), and 0.35 (large), which indicate the extent to which the independent variable contributes to increasing the variance of the dependent variable. In Table 11, the correlation coefficient between X1 and Z is 0.074, indicating a small/weak positive correlation.

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The relationship between X1 and Y is 0.053, which also shows a small/weak correlation. The correlation between X2 and Z is 0.706, indicating a strong correlation. The correlation between X2 and Y is 0.010, indicating a small/weak correlation. The correlation between Z and Y is 0.097, also showing a small correlation.

The results of the study show that service quality has an important role as a mediating variable in the relationship between environment and price on customer satisfaction. Based on the path analysis, it was found that the environment (X1) did not have a significant direct effect on customer satisfaction (Y), and its indirect influence through the quality of service (Z) was also insignificant. This indicates that although environmental conditions that include cleanliness, comfort, and aesthetics are considered important in the literature (Dharmawan & Rachmaniyah, 2020; Saodin, 2021), in the context of this research, the environment has not been proven to make a real contribution to customer satisfaction either directly or through service quality. Thus, these results reinforce the view that the environment can only affect satisfaction if it is perceived through other mechanisms, such as the quality of service perceived by customers (Sahayati et al., 2022).

In contrast, price (X2) was shown to have no significant effect directly on customer satisfaction (Y), but had a significant indirect influence through the quality of service (Z). This shows that customers do not judge prices separately, but rather relate them to the quality of service received. This finding is in line with the study of Trisna & Zuraidah (2022), which emphasises that price must be balanced with the quality of service in order to create satisfaction. Furthermore, the results of this study support the opinion of Melza & Widarta (2024) and Leke et al. (2023) that price transparency and conformity with quality play an important role in shaping the perception of satisfaction. In other words, even though competitive prices are an important factor, customer satisfaction will only be realised if the quality of service is also felt to be adequate.

Overall, this study confirms that service quality is a central factor in building customer satisfaction. The environment and price are indeed important variables in the literature (Juliana et al., 2021; Haryono & Wicaksono, 2022), but in practice, the contribution of both is only felt when mediated by the quality of service. This has important implications for hotel management to focus more on improving service quality as a key strategy in creating customer satisfaction and loyalty.

3.2 Discussion

The Role of Environment. The analysis revealed that environmental factors did not have a statistically significant effect on either service quality or customer satisfaction. This suggests that, within the context of Hotel Budiman Balikpapan, customers may prioritise other elements—such as pricing or service interaction—over environmental aesthetics when evaluating their satisfaction. These findings stand in contrast to earlier studies, such as Juliana et al. (2021), which emphasised that an appealing physical environment and aesthetic atmosphere contribute positively to customers' satisfaction levels. The inconsistency may be attributed to contextual differences in customer expectations, service settings, or cultural perceptions of environmental quality.

The insignificance may indicate that hotel guests in mid-class facilities consider environmental factors as basic expectations, not differentiating features that drive satisfaction. Once a hotel meets hygiene and comfort standards, other variables such as responsiveness and reliability become more influential. This aligns with expectancy-disconfirmation theory, where attributes perceived as "must-be" do not increase satisfaction when fulfilled.

The Role of Price. The findings indicate that price exerts a significant and positive influence on service quality, although its direct impact on customer satisfaction is not statistically significant. This implies that customers tend to perceive price fairness based on the quality of service they receive, rather than on the nominal value of the price itself. In other words, price contributes to satisfaction indirectly through its effect on service performance, aligning with the principles of the Perceived Value Theory proposed by Sharma and Fatima (2024). This pattern reinforces the notion that customer satisfaction emerges when the perceived benefits of service quality justify the price paid. When service exceeds expectations, even a higher price is

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perceived as fair. Therefore, service quality mediates the effect of price on satisfaction, indicating full mediation - a key empirical contribution of this study.

The Role of Service Quality as Mediator. Service quality positively affects customer satisfaction and fully mediates the relationship between price and satisfaction. This confirms the fundamental proposition of the SERVQUAL model, which emphasises that tangible and intangible service attributes (reliability, responsiveness, assurance, empathy) form the primary determinant of satisfaction (Adellia Oktavianes et al., 2024). Thus, the research provides empirical evidence that service quality serves as the central mechanism through which pricing strategies impact satisfaction in the hospitality sector.

Comparative and Theoretical Reflection. Compared with earlier research (Jatmiko & Adrilah, 2024), which used *promotion* as the mediator, this study advances the theoretical model by substituting it with service quality. The results reveal that non-monetary cues (service experience) have a stronger effect on satisfaction than monetary stimuli (price promotions). This finding reinforces the view that service-driven differentiation is essential in sustaining hotel competitiveness.

4. CONCLUSION

The findings of this study reveal that environmental factors do not have a significant direct or indirect influence on customer satisfaction. This indicates that the physical surroundings of the hotel, while important, are not a key determinant of how customers evaluate their overall satisfaction. Conversely, price demonstrates a significant indirect effect through service quality, confirming the presence of full mediation. Service quality emerges as the dominant determinant of satisfaction, validating the SERVQUAL framework within the context of the hotel industry. Furthermore, this study provides theoretical refinement to the price–satisfaction relationship by showing that the influence of price operates entirely through service quality, underscoring the mediating role of perceived service performance in shaping customer satisfaction outcomes. From a managerial perspective, the results suggest that hotel managers should place greater emphasis on enhancing service quality dimensions—particularly responsiveness, assurance, and reliability—as these attributes have a stronger impact on customer satisfaction than environmental aesthetics or pricing alone. Pricing strategies must also highlight perceived fairness and be complemented by tangible service improvements that enhance customers' perceived value. Meanwhile, environmental factors should be maintained at acceptable standards as hygiene attributes that support service quality but should not be overly relied upon as primary differentiators in driving satisfaction. This study is limited to a single hotel (Hotel Budiman Balikpapan) and is based on self-reported guest perceptions, which may introduce bias. Future studies should expand the sample to different hotel categories (two-star to five-star) and include loyalty or trust variables to explore long-term behavioural outcomes. Comparative research across regions or service sectors could also deepen understanding of how environmental and pricing factors interact with cultural and economic contexts.

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