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Determinants of Passenger Satisfaction at Terminal 3 of Soekarno-Hatta Airport

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Abstract: This study aims to analyze the influence of service quality, information quality, accessibility, and facilities on passenger satisfaction at Terminal 3 of Soekarno-Hatta Airport. The population of this research includes all passengers or users of Terminal 3, with data collected from January 2023 to December 2023. The sample consists of 182 respondents selected through purposive random sampling. The data collection instrument is a questionnaire, and data analysis is conducted using SPSS software through classical assumption tests and multiple linear regression analysis. The results show that service quality, information quality, and facilities have a positive and significant effect on passenger satisfaction, while accessibility does not have a significant impact. Based on these findings, it is recommended that the management of Terminal 3 continue to improve service quality, provide more accurate and relevant information, and ensure that facilities remain well-maintained and modern. Future research is encouraged to expand the scope of the study by adding other relevant variables, such as security aspects or the use of technology in airport

Keyword: Passenger Satisfaction, Service Quality, Information Quality, Accessibility, Facilities, Terminal 3 Soekarno-Hatta Airport.

INTRODUCTION

Service quality relates to the entire passenger experience with various terminal service components, while information quality encompasses the accuracy, clarity, and availability of information provided to them (Vicramaditya, 2021). Additionally, accessibility refers to the ease of access to and from the terminal as well as access to various facilities and services offered. Soekarno-Hatta Airport's Terminal 3, designed to serve both domestic and international passengers, is expected to deliver excellent service that meets the needs of diverse user segments. Passenger satisfaction is a key indicator in assessing airport performance and plays a crucial role in maintaining the airport's competitiveness on the global stage (Syafei et al., 2022).

Research conducted by Angelina & Naipospos (2023) on a number of passengers at Soekarno-Hatta International Airport's Terminal 3 revealed several complaints regarding the quality of service at the airport. Common issues raised include the considerable distance

between the check-in area and the boarding gate, long queues at the check-in counters, malfunctioning airport facilities such as charging stations, unhelpful attitudes of airport staff in providing information, and a lack of discipline among personnel. These findings indicate that the service quality at Terminal 3 has yet to reach optimal levels, resulting in passenger dissatisfaction with the services provided. Additionally, Nieamah (2016) highlighted that the airport's information system is often still manual, requiring written updates for every change, which slows down the process.

To enhance passenger satisfaction, it is crucial for terminal management to understand the elements that drive customer satisfaction and loyalty (Andi Frianto, et al., 2024). Factors such as cleanliness, staff friendliness, efficiency in the check-in and boarding processes, and the availability of facilities play a significant role in shaping service quality. Research indicates that as service quality improves, passenger happiness also increases, which in turn fosters long-term loyalty. Therefore, improving service quality must be a priority in the management of Terminal 3.

In addition to service quality, information quality is also a crucial aspect in determining passenger satisfaction (Kurniawati et al., 2021). Clear announcements, the availability of information regarding flight schedules and terminal services, and easy access to this information can all have a significant impact on the overall passenger experience. The airport's distant location for many passengers leads to frequent travel and complicates traffic flow on the access roads to the airport (Hafizah, 2018).

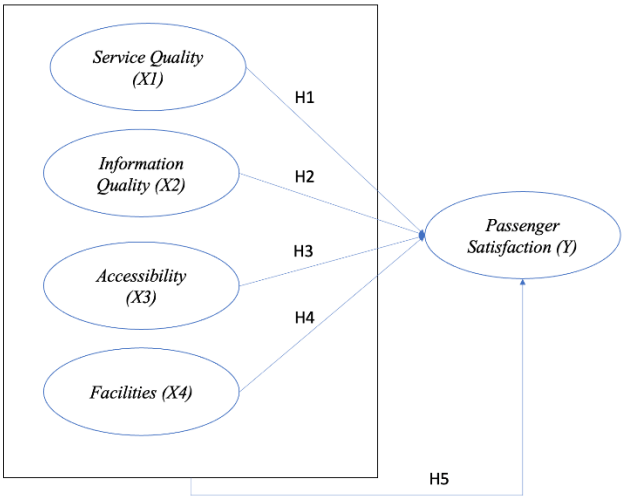
In the context of Terminal 3 at Soekarno-Hatta Airport, the provision of adequate supporting facilities such as waiting areas, restrooms, and additional services like Wi-Fi are key elements that determine passenger comfort (Ningsih & Rachmawati, 2024). Further research is needed to evaluate the extent to which these factors contribute to passenger satisfaction and how the airport can continue to enhance its services to address future challenges.

Therefore, the author has chosen the topic of discussion on "Determinants of Customer Satisfaction at Terminal 3 Soekarno-Hatta Airport". The findings of this research are expected to provide significant insights for the management of Terminal 3 in terms of improving service quality, information quality, and terminal accessibility. By enhancing or strengthening the elements that influence passenger happiness and loyalty, the terminal can elevate its reputation, expand its user base, and solidify its position as one of Indonesia's major airports.

METHOD

This study aims to measure the impact of service quality, information quality, accessibility, and supporting facilities on passenger satisfaction at Terminal 3 of Soekarno-Hatta Airport. Using a quantitative approach, data were collected through questionnaires distributed to domestic passengers of Garuda Indonesia. The population of the study consists of 117,189 passengers throughout the year 2023, and using Slovin's formula, a minimum sample size of 182 respondents was determined. In addition to primary data from the questionnaires, this research also utilizes secondary data from previous studies, books, journals, and scientific articles.

For data analysis, this study employs SPSS version 25. The analysis includes descriptive statistical tests to describe the characteristics of the respondents, as well as regression analysis to examine the relationships between the research variables. Thus, the findings of this study are expected to provide insights into the factors influencing passenger satisfaction and offer recommendations for service improvements at Terminal 3 of Soekarno-Hatta Airport.



Source: Research Results

Figure 1. Research Framework

RESULTS AND DISCUSSION

Validity Test

Table 1. Validity Testing

No	Variable	Indicators	r value	r table	Remarks
1	Service Quality (X1)	1. Indicator 1	0.912	0,1445	VALID
		2. Indicator 2	0.920	0,1445	VALID
		3. Indicator 3	0.917	0,1445	VALID
		4. Indicator 4	0.911	0,1445	VALID
		5. Indicator 5	0.903	0,1445	VALID
		6. Indicator 6	0.926	0,1445	VALID
		7. Indicator 7	0.913	0,1445	VALID
		8. Indicator 8	0.922	0,1445	VALID
2	Information Quality (X2)	1. Indicator 1	0.752	0,1445	VALID
		2. Indicator 2	0.793	0,1445	VALID
		3. Indicator 3	0.806	0,1445	VALID
		4. Indicator 4	0.771	0,1445	VALID
		5. Indicator 5	0.796	0,1445	VALID
		6. Indicator 6	0.824	0,1445	VALID
3	Accessibility (X3)	1. Indicator 1	0.843	0,1445	VALID
		2. Indicator 2	0.881	0,1445	VALID
		3. Indicator 3	0.852	0,1445	VALID
		4. Indicator 4	0.825	0,1445	VALID
		5. Indicator 5	0.809	0,1445	VALID
		6. Indicator 6	0.800	0,1445	VALID
4	Facilities (Supporting Facilities) (X4)	1. Indicator 1	0.883	0,1445	VALID
		2. Indicator 2	0.901	0,1445	VALID
		3. Indicator 3	0.904	0,1445	VALID
		4. Indicator 4	0.901	0,1445	VALID
		5. Indicator 5	0.898	0,1445	VALID
		6. Indicator 6	0.892	0,1445	VALID
		7. Indicator 7	0.886	0,1445	VALID
		8. Indicator 8	0.893	0,1445	VALID
5	Passengers Satisfaction (Y)	1. Indicator 1	0.817	0,1445	VALID
		2. Indicator 2	0.772	0,1445	VALID
		3. Indicator 3	0.818	0,1445	VALID
		4. Indicator 4	0.836	0,1445	VALID
		5. Indicator 5	0.758	0,1445	VALID

	6. Indicator 6	0.760	0,1445	VALID
	7. Indicator 7	0.799	0,1445	VALID
	8. Indicator 8	0.802	0,1445	VALID

Source: Research data

Table 1 shows that all indicators used have a calculated r value greater than the table r value (0.1445). This confirms that all indicators are valid and suitable for use as measurement tools for the variables in this study.

Reliability Test

Table 2. Reliability Testing

No	Variable	Items	R value	Remarks
1	Service Quality (X1)	8	0.972	Reliable
2	Information Quality (X2)	6	0.880	Reliable
3	Accessibility (X3)	6	0.913	Reliable
4	Facilities (Supporting Facilities) (X4)	8	0.964	Reliable
5	Passengers Satisfaction (Y)	8	0.917	Reliable

Source: Research data

Based on the results displayed in the table, all variables show a Cronbach's Alpha value greater than 0.70. Therefore, the indicators for the variables of service quality, information quality, accessibility, facilities (supporting resources), and passenger satisfaction are deemed reliable and suitable for use as measurement tools in this research.

Normality Test

The purpose of the normality test is to ensure that the data used in the regression model follow a normal distribution or are approximately normal, as recommended by Ghozali (2016:154). To evaluate whether the data in the regression model adhere to a normal distribution, the non-parametric Kolmogorov-Smirnov (K-S) statistical test can be employed.

			Unstandardized Residual
N			182
Normal Parameters[a,b]	Mean		.0000000
	Std. Deviation		3.04724557
Most Extreme Differences	Absolute		.066
	Positive		.066
	Negative		-.058
Test Statistic			.066
Asymp. Sig. (2-tailed)[c]			.053
Monte Carlo Sig. (2-tailed)[d]	Sig.		.053
	99% Confidence Interval	Lower Bound	.047
		Upper Bound	.059

Source: Research Results

Figure 2. Normality Testing

Based on the table above, it can be concluded that the variables tested—service quality, information quality, accessibility, facilities (supporting resources), and passenger satisfaction—meet the criteria for normal distribution. This is evidenced by an Asymp. Sig value of 0.053, which is greater than 0.05. In other words, the data for these variables exhibit a normal distribution, in accordance with the criteria established in the normality test.

Multicollinearity Test

The multicollinearity test aims to identify whether there is a correlation among the independent variables in the regression model.

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	13.293	2.175		6.112	<.001		
	X1	.084	.040	.155	2.110	.036	.643	1.555
	X2	.365	.110	.256	3.308	.001	.583	1.715
	X3	.077	.072	.071	1.064	.289	.789	1.267
	X4	.173	.049	.280	3.521	<.001	.550	1.819

a. Dependent Variable: Y

Source: Research Results

Figure 3. Multicollinearity Testing

Based on the table above, the calculation of the Tolerance values indicates that all independent variables have values greater than or equal to 0.10, and the Variance Inflation Factor (VIF) values are less than or equal to 10. This demonstrates that there is no correlation among the independent variables. Therefore, the variables are considered suitable for use in the analysis.

Heteroscedasticity test

The heteroscedasticity test aims to check whether there is a difference in the variance of residuals across observations in the regression model.

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-1.261	1.223		-1.031	.304
	X1	-.005	.022	-.021	-.227	.821
	X2	.085	.062	.131	1.370	.172
	X3	.046	.041	.093	1.135	.258
	X4	.027	.028	.095	.969	.334

a. Dependent Variable: ABS_RES

Source: Research Results

Figure 4. Heteroscedasticity Testing

Based on the table above, the results of the Glejser test indicate that the significance values for all independent variables are greater than 0.05. This suggests that there are no issues of heteroscedasticity in the data. Therefore, the data meets the criteria to be used in the research.

Multiple Linear Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	13.293	2.175		6.112	<.001		
	X1	.084	.040	.155	2.110	.036	.643	1.555
	X2	.365	.110	.256	3.308	.001	.583	1.715
	X3	.077	.072	.071	1.064	.289	.789	1.267
	X4	.173	.049	.280	3.521	<.001	.550	1.819

a. Dependent Variable: Y

Source: Research Results

Figure 5. Multiple Linear Regression Analysis

Using the standard regression coefficient values, the linear equation generated from the multiple linear regression analysis is as follows:

$$Y = 13{,}293 + 0{,}155\,X1 + 0{,}256\,X2 + 0{,}071\,X3 + 0{,}280\,X4$$

Description: Y represents passenger satisfaction, X1 represents service quality, X2 represents information quality, X3 represents accessibility, and X4 represents facilities (supporting resources).

Overall, all independent variables in this regression model demonstrate a positive relationship with the dependent variable, which is passenger satisfaction. This means that any improvement in the independent variables can contribute to an increase in passenger satisfaction.

T-test

The t-test aims to determine whether the independent variables—service quality (X1), information quality (X2), accessibility (X3), and facilities (supporting resources) (X4)—have a significant impact on the dependent variable, which is passenger satisfaction (Y), on an individual basis. If the significance value (p-value) of the tested variable is less than the established significance level (e.g., 0.05), then that variable can be considered to have a significant influence on customer satisfaction.

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	13.293	2.175		6.112	<.001		
	X1	.084	.040	.155	2.110	.036	.643	1.555
	X2	.365	.110	.256	3.308	.001	.583	1.715
	X3	.077	.072	.071	1.064	.289	.789	1.267
	X4	.173	.049	.280	3.521	<.001	.550	1.819

a. Dependent Variable: Y

Source: Research Results

Figure 6. T Test

The t-table value used in this analysis is 1.654 at a 5% significance level. Here are the testing results for each variable:

1) **Service Quality (X1):**
   The test result shows a significance value of 0.036, which is lower than 0.05. The calculated t value is 2.110, which exceeds the t-table value of 1.654. This indicates that improvements in service quality tend to enhance passenger satisfaction. The results confirm that service quality significantly influences passenger satisfaction. This finding implies that responsiveness, reliability, and the professionalism of service staff play an important role in shaping positive passenger experiences. When passengers perceive that services are delivered promptly and accurately, their overall satisfaction increases. **H1 Accepted**
2) **Information Quality (X2):**
   The test for information quality reveals a significance value of 0.001, well below 0.05. The calculated t value is 3.308, which is higher than the t-table value of 1.654. This suggests that improvements in information quality will contribute to increased passenger satisfaction. The strong effect of information quality on satisfaction highlights the importance of clarity, accuracy, and availability of information for passengers. In transportation contexts, timely and relevant information—such as schedules, procedures, and guidance—reduces uncertainty and contributes to higher levels of confidence and satisfaction. **H2 Accepted**
3) **Accessibility (X3):**
   For the accessibility variable, the significance value is recorded at 0.289, which is higher than 0.05. The calculated t value is 1.046, which is lower than the t-table value of 1.654. This means that accessibility does not show a significant impact on passenger satisfaction in this model. Unlike other variables, accessibility did not show a significant

effect on satisfaction. This suggests that while access routes, parking, and special facilities may be important, they are not the primary factors influencing passenger perceptions in this study. Other factors, such as service and information quality, appear to have greater weight in determining satisfaction levels. **H3 Rejected**

4) **Facilities (Support Facilities) (X4):**
The test results for facilities indicate a significance value of 0.001, which is far below 0.05. The calculated t value of 3.521 also exceeds the t-table value of 1.654. This indicates that facilities (support Facilities) have the potential to enhance passenger satisfaction. The significant effect of facilities indicates that the availability, design, and functionality of supporting infrastructure positively shape passenger satisfaction. Well-maintained waiting areas, modern equipment, and adequate amenities enhance comfort and convenience, which in turn foster a more positive travel experience. **H4 Accepted**

F-test

The F-test was employed to determine whether Service Quality, Information Quality, Accessibility, and Facilities (Supporting Amenities) simultaneously influence Passenger Satisfaction.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1045.007	4	261.252	27.513	<.001[b]
	Residual	1680.713	177	9.496		
	Total	2725.720	181			

a. Dependent Variable: Y

b. Predictors: (Constant), X4, X3, X1, X2

Source: Research Results

Figure 7. F Test

Based on the results presented in the table, the calculated F-value is greater than the critical F-value (27.513 > 2.43). This finding is further supported by the significance probability of 0.000, which is lower than the threshold of 0.05. Therefore, the proposed hypothesis is accepted, meaning that H0 is rejected and H5 is accepted. It can be concluded that Service Quality (X1), Information Quality (X2), Accessibility (X3), and Facilities (Supporting Amenities) (X4) collectively (simultaneously) exert a significant influence on Passenger Satisfaction (Y).

Relevant Coefficient

The relevant coefficient of determination for this model is measured by the Adjusted R Square (R^2). The results of this analysis provide information on how well the independent variables can explain the variation in the dependent variable. Below are the results of the Adjusted R^2 coefficient for this model:

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.619[a]	.383	.369	3.081

a. Predictors: (Constant), X4, X3, X1, X2

b. Dependent Variable: Y

Source: Research Results

Figure 8. Relevant Coefficient

Based on Table 8, the obtained Adjusted R Square (R^2) value is 0.383. This indicates that 38.3% of the variation in customer satisfaction can be explained by the independent variables,

namely service quality (X1), information quality (X2), accessibility (X3), and facilities (supporting resources) (X4). Meanwhile, the remaining 61.7% is explained by other factors not included in this research model.

CONCLUSION

This study found that service quality, information quality, and facilities at Terminal 3 of Soekarno-Hatta Airport have a positive and significant impact on passenger satisfaction. The responsiveness and reliability of airport staff, clear and accessible information, as well as modern and well-maintained facilities, such as comfortable waiting areas and Wi-Fi access, all contribute to a positive passenger experience. Although accessibility did not show a significant quantitative impact, passengers still consider ease of access to the airport an important component of their journey. Effective management of infrastructure and communication is key to maintaining passenger satisfaction.

To enhance passenger satisfaction, Terminal 3 of Soekarno-Hatta Airport needs to continuously improve service quality through staff training and the implementation of self-service technologies such as chatbots. Optimizing information delivery, whether through applications with real-time notifications or digital information boards, will help passengers access information quickly and easily, particularly for foreign travelers. Routine maintenance of facilities such as waiting areas, restrooms, and baggage handling should be prioritized, along with the addition of modern amenities to uphold the airport's quality as an international transportation hub. Even though accessibility did not have a significant impact, the airport should still enhance parking facilities and promote environmentally friendly transportation options to support passenger comfort, including for those with limited mobility.

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