

THE INFLUENCE OF SERVICES AND FACILITIES ON CUSTOMER SATISFACTION PT. BALANCIA SHIPPING AGENCY

Magneta Hisyam^{1*}, Budiyanto², Rimayang Ramli³, Mira Yona⁴

¹Student of Management Science Doctoral Program, Indonesia of Economics (STIESIA), Surabaya, Indonesia

²Indonesia School of Economics (STIESIA), Surabaya, Indonesia

³Riau Kepulauan University, Batam, Indonesia

⁴Riau Kepulauan University, Batam, Indonesia

* Corresponding Author: magneta@feb.unrika.ac.id

Abstract: The ship agency industry in Batam, as a strategic maritime node, faces intense competition and demands for service digitization. This study aims to analyze the effect of Services and Facilities on Customer Satisfaction at PT Balancia Shipping Agency. The method used is a quantitative approach with a causality design, involving 80 respondents selected using the saturated sample technique. Data was collected through a questionnaire using a Likert scale, and analyzed using multiple linear regression. The results of the validity and reliability tests show that the research instruments are suitable for use. The classical assumption test ensures that the regression model meets the requirements. The regression analysis results show that the Service (Sig. = 0.004) and Facility (Sig. = 0.001) variables have a positive and significant effect on Customer Satisfaction. Services have a stronger influence than Facilities (Beta Services = 0.527; Beta Facilities = 0.108). The conclusion of this study confirms that optimization of Services and Facilities is an effective strategy to increase Customer Satisfaction in the ship agency industry. It is recommended for management to focus on improving these two aspects and for future research to explore other relevant variables for a more comprehensive understanding.

Keywords: Services, Facilities, Customer Satisfaction, Shipping Agency.

1. Introduction

The ship agency industry plays a vital role in the global maritime supply chain, acting as a crucial link between ship owners, port authorities and other relevant parties. Amidst the era of globalization and rapid digitalization, the industry faces increasing competition and demands to improve operational efficiency. Shipping agents are not only required to facilitate ship operations, but also to provide significant added value, especially in the context of faster, more efficient, and more transparent services. Digital transformation in the maritime sector plays a pivotal role in changing the way shipping operates, improving efficiency and visibility in the global supply chain (Virtue Marine, 2025).

Batam, as one of Indonesia's strategic maritime logistics hubs located close to the busiest international shipping lanes, is directly impacted by these global changes. The region faces unique operational challenges, with increasing demands for efficiency amid intensifying competition. Under these conditions, customer satisfaction has become a crucial performance indicator and a key strategic focal point for ship agency companies. Customers now have evolving expectations, which include speed, reliability, transparency, real-time information access, and seamless communication (Meest, 2025).

To meet or even exceed these expectations, companies must focus on two key areas that are the main keys to improving customer satisfaction in the modern ship agency industry: service improvement and facility improvement. According to Kotler and Keller (2016), customer satisfaction is achieved when companies successfully meet or exceed customer expectations.

In this context, service improvement refers to process refinement in the delivery of ship agency services, including operational efficiency, speed of staff response, accuracy of information, timely handling of documents, and effective coordination with various parties. These dimensions of service quality, proposed by Parasuraman, Zeithaml, and Berry (1988), include reliability, responsiveness, assurance, and empathy. Recent studies in logistics indicate that speed and reliability in service delivery are crucial to customer satisfaction (Hasibuan et al., 2020).

Meanwhile, facility upgrades refer to the provision and maintenance of physical and non-physical facilities that support service delivery, such as comfortable and accessible offices, advanced communication and information technology systems, digital platforms for interaction and tracking, and operational equipment at the port. These facilities are part of the tangibles dimension of service quality (Parasuraman et al., 1988) and contribute to the perception of customer comfort, efficiency, and professionalism (Tjiptono, 2017). The availability of adequate facilities has proven significant in increasing customer satisfaction, especially in the context of technology-based services (Ardhana et al., 2024).

Along with the development of digital infrastructure, facilities now include the use of technology that supports transparency and provides real-time access to information. Therefore, improving services and facilities are two important pillars in the effort to increase customer satisfaction, which ultimately supports the sustainability and competitiveness of the company. Given that improving customer satisfaction is the main goal of the company, this study will empirically explore the relationship between service and facility improvements to customer satisfaction at PT Balancia Shipping Agency in Batam.

This research focuses on strategies to increase customer satisfaction through improved services and facilities in the context of the ship agency industry. By taking a case study at PT Balancia Shipping Agency, it is hoped that this research can provide a deeper understanding of the factors that influence customer satisfaction and provide strategic recommendations for companies to improve performance and competitiveness in this increasingly dynamic industry.

2. Literature Review

Services

Services can be understood as activities, performance, or efforts offered by one party to another, which are basically intangible and do not result in any ownership (Zeithaml, Bitner, & Gremler, 2018).

In the context of the ship agency industry, services cover a complex set of activities from pre-arrival of the vessel, while the vessel is in port, to post-departure, including document processing, coordination with port authorities, provision of crew, to handling related logistics.

Service quality is often assessed based on a comparison between customer expectations and their perceptions of the actual performance of the service received. Zeithaml, Bitner, and Gremler (2010) identified five main dimensions of service quality known as the SERVQUAL model:

- a) Reliability: The ability to perform the promised service precisely and accurately.
- b) Responsiveness: The willingness to help customers and provide prompt service.
- c) Assurance: The knowledge and courtesy of employees and their ability to instill confidence and trust in customers.
- d) Empathy: The genuine and individualized attention a company gives to its customers.

- e) Tangibles (Physical Evidence): The appearance of physical facilities, equipment, personnel, and communication materials.

In the logistics and maritime industries, the service dimensions most emphasized by customers often include speed, reliability, accuracy, and timeliness of delivery or task completion (Hasibuan et al., 2020; Waite, 2025). In addition, in today's digital era, service quality also increasingly includes easy access to information, transparency of processes, and efficiency of interaction through digital platforms (Meest, 2025).

Facilities

Facilities in the context of services refer to all physical facilities and infrastructure and the environment used to support the service delivery process (Tjiptono, 2017). This is a dimension of physical evidence (tangibles) in service quality. For ship agency companies, facilities are not only limited to a representative physical office, but also include various supporting resources such as:

- a) Communication system (phone, email, stable internet).
- b) Information technology (ship management software, tracking system, database).
- c) Digital platform or customer portal for information access, tracking, and communication
- d) Operational support equipment (vehicles, portable communication devices).
- e) Comfort and cleanliness of physical areas that may be accessed by customers or associated with the service.
- f) Ease of access to physical locations or digital platforms.

Modern, well-maintained, clean and accessible facilities can significantly improve customer perceptions of the professionalism and quality of service providers, and contribute to a comfortable and efficient experience (Selaras, 2020; Ardhana et al., 2024). Facility optimization means ensuring that these facilities and infrastructure are not only available, but also function optimally, are relevant to the needs of customers in the digital era, and support smooth service operations. The availability of adequate resources and facilities is an important prerequisite in the delivery of quality services that ultimately affect customer satisfaction (Ardhana et al., 2024).

Customer Satisfaction

Customer satisfaction is the customer's emotional response to the consumption experience, which is the result of a comparison between the perceived performance of the product or service and the expectations before consumption (Kotler & Keller, 2016; Zeithaml et al., 2018).

When performance exceeds expectations, customers will feel very satisfied; if performance is as expected, customers will be satisfied; and if performance is below expectations, customers will feel dissatisfied.

In B2B industries such as ship agency, customer satisfaction is not only influenced by a single transaction, but also by the quality of the long-term relationship built, trust, and the perceived total value of the service provided. Customer satisfaction is a crucial strategic objective as it has a significant positive impact on customer loyalty, intention to reuse services (retention), willingness to provide positive recommendations (word-of-mouth), and ultimately profitability and long-term business growth (Ardhana et al., 2024; Waite, 2025). Therefore, understanding the factors that drive customer satisfaction is essential for ship agency companies.

Research Framework

The framework in this study is based on the assumption that Customer Satisfaction in the context of the ship agency industry is influenced by the quality of the Services provided and the quality of the Facilities available or supporting the service process. Previous literature reviews have indicated that Service, with its various dimensions such as reliability, responsiveness, and speed, is a strong predictor of perceived quality and customer satisfaction (Parasuraman et al., 1988; Hasibuan et al., 2020). Similarly, Facilities, as part of the physical evidence of services (tangibles) and supporting resources, play an important role in shaping customer experience and comfort, which in turn affects satisfaction (Tjiptono, 2017; Ardhana et al., 2024).

Based on this explanation, the framework of this study illustrates that Services and Facilities are independent variables that are thought to have an influence on Customer Satisfaction as the dependent variable. Visually, this framework can be described as follows:

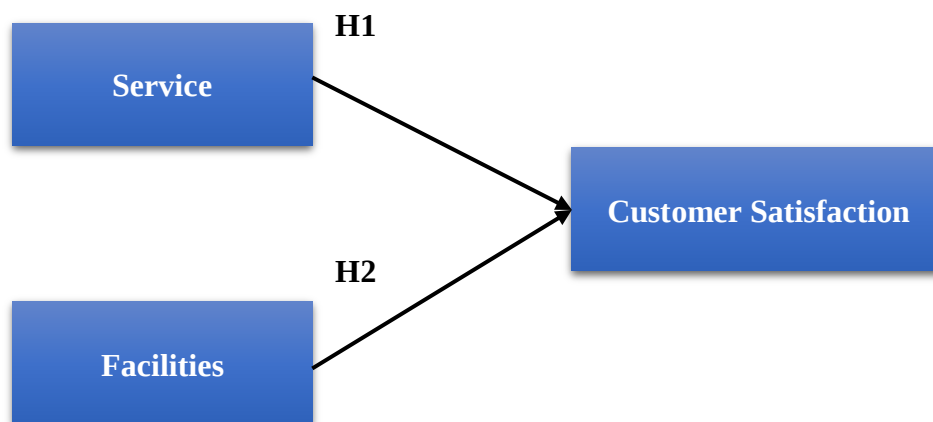


Figure 1. Research Framework
Source: Data processed by the author, 2025

Hypothesis Development

The hypothesis in this study is formulated as follows:

- Hypothesis 1: Service has a significant effect on customer satisfaction. This hypothesis is based on service quality theory which states that perceptions of service quality (which includes reliability, responsiveness, etc.) are the main determinants of customer satisfaction (Parasuraman et al., 1988; Zeithaml et al., 2010).
- Hypothesis 2: Adequate and relevant facilities (both physical and digital) facilitate service access, create a professional impression, and support operational efficiency, all of which can increase perceived value and customer satisfaction (Ardhana et al., 2024; Trisakti, n.d.).

3. Methods

Research Approach and Technique

This research uses a quantitative approach with a causal (associative) design, which aims to statistically test the relationship between the independent and dependent variables. The quantitative approach was chosen because it allows researchers to measure the relationship between variables using numbers and analyze data through statistical methods. According to Sugiyono (2013), quantitative methods are positivistic methods based on the philosophy of

positivism, which emphasizes the collection of data in the form of numbers to be analyzed statistically. The causality design is used to analyze the cause-and-effect relationship between the independent variables, namely Services and Facilities, and Customer Satisfaction. This research is also explanatory in nature, with the aim of explaining how these variables affect customer satisfaction at PT Balancia Shipping Agency.

Population and Sample

The population in this study is a collection of all elements that are the object of research. According to Wirawan (2016), population is a collection of all similar distinguishable elements (units or individuals) that are the object of investigation or research. The population of this study are all customers of PT Balancia Shipping Agency who have used the company's services for the past three months, with a total of 80 respondents.

The sample is part of the number and characteristics of the population (Sugiyono, 2013). The sampling technique in this study uses non-probability sampling with the saturated sample method (census). Saturated sample is a sampling technique when all members of the population are used as samples. Another term for saturated sample is census, where all members of the population are sampled (Sugiyono, 2013). Given the relatively small population (80 respondents), the census method is considered appropriate to obtain data from all customers within the specified period. Thus, the number of samples in this study were 80 respondents.

Data Source

The data source in this study is primary data. Primary data is data collected directly by researchers from the original source during research (Widodo et al., 2023). In this context, primary data is obtained directly from respondents, namely customers of PT Balancia Shipping Agency, through distributing questionnaires.

Data Collection

To obtain data on research variables (Services, Facilities, and Customer Satisfaction), the data collection tool used is a questionnaire. The questionnaire contains a series of closed statements that are compiled based on variable indicators. The measurement scale used is the Likert Scale, with tiered answer options from 1 to 5, which represent the level of agreement or perception of the respondent, such as from Strongly Disagree to Strongly Agree (Maria & Chandra, 2023).

Data Analysis

Data analysis in quantitative research is carried out after data from all respondents are collected (Sugiyono, 2013). The data analysis technique uses statistical methods with the help of SPSS software version 25. The stages of data analysis include:

- a) **Data Quality Test:** Includes Validity Test and Reliability Test to ensure that the research instrument (questionnaire) is suitable for use.
- b) **Classical Assumption Test:** Conducted to ensure that the regression model meets the basic assumptions before interpretation of the regression results. This test includes Normality Test, Multicollinearity Test, and Heteroscedasticity Test.
- c) **Multiple Linear Regression Analysis:** Used as a tool to analyze the effect of independent variables (Services and Facilities) simultaneously and partially on the dependent variable (Customer Satisfaction) (Maria & Chandra, 2023). The multiple linear regression equation used is $Y = a + b_1X_1 + b_2X_2 + e$.
- d) **Hypothesis Test:** Includes t-test (partial effect) and F-test (simultaneous effect) to test the significance of the effect of independent variables on the dependent variable based on the results of regression analysis.

4. Results and Discussion

Instrument Feasibility Test

Validity Test

The validity test is used to test the extent to which the research instrument can measure the intended variable. Based on the validity test results, all items on the questionnaire were declared valid because the calculated r value was greater than the r table (0.219) at the 5% significance level. The following output results are obtained from the variable validity test:

Table 1.					Validity
Test	Variables	Code	r-count	r-table	Description
	Service (X1)	X1.1	0,918	0,219	Valid
		X1.2	0,917	0,219	
		X1.3	0,931	0,219	
		X1.4	0,917	0,219	
		X1.5	0,931	0,219	
	Facilities (X2)	X2.1	0,234	0,219	Valid
		X2.2	0,33	0,219	
		X2.3	0,351	0,219	
		X2.4	0,382	0,219	
		X2.5	0,382	0,219	
	Customer Satisfaction (Y)	Y.1	0,378	0,219	Valid
		Y.2	0,296	0,219	
		Y.3	0,388	0,219	
		Y.4	0,367	0,219	
		Y.5	0,538	0,219	

Source: Data processed by the author, 2025

From the test data results above, the value of respondents in this questionnaire test is $n = 80$. Determination of the value of $r_{table} = 0.219$ with the formula $df - 2$. Df is the number of respondents $80 - 2 = 78$, to determine the value of r_{table} by looking at the validity T table after that it is matched using a significance of 5% or 0.05. If $r\text{-count} > r_{table}$ then the per-item statement is valid. From the results of the above calculations that of the 15 statement items declared valid.

Reliability Test

The reliability test is a continuation of the validity test. To determine whether the instrument is reliable or not using the 0.6 limit. If the Cronbach Alpha value > 0.60 , it is said that the research instrument is reliable, otherwise if the Cronbach Alpha value < 0.6 , the instrument is said to be unreliable.

Test	Variables	Cronbach's Alpha	Reliability Results
	Service quality	0,694	
	Facilities	0,775	
	Customer Satisfaction	0,885	

Source: Data processed by the author, 2025

Based on the table above, it shows that the question items used in this study are said to have passed the reliability test with evidence of Cronbach's alpha on all variables having a value above 0.60, so the research instrument has good internal consistency and can be trusted to be used in research.

Classical Assumption Test

Before conducting multiple linear regression analysis, it is important to test the fulfillment of classical assumptions so that the resulting model is valid. The classic assumption tests in this study include normality, multicollinearity, and heteroscedasticity tests.

Normality Test

The residual normality test is carried out to ensure that the regression model residuals are normally distributed. Testing using One-Sample Kolmogorov-Smirnov in SPSS with normal data criteria if the *Asymp. Sig. (2-tailed)* > 0.05.

The results in Table 3 show the *Asymp. Sig. (2-tailed)* value of 0.204. Because $0.204 > 0.05$, it is concluded that the residuals are normally distributed.

Table 3. One-Sample Kolmogorov-Smirnov Test

Unstandardized	Residuals
N	80
Normal Parameters ^{a,b} Mean	.0000000
Std. Deviation	136.350.461
Most Extreme Differences Absolute	.067
Positive	.051
Negative	.067
Test Statistic	.207
Asymp. Sig. (2-tailed)	.204

Source: Data processed by the author, 2025

Multicollinearity Test

The multicollinearity test aims to detect high correlation between independent variables. Detection is done using the Tolerance and VIF values with the criteria that there is no multicollinearity if $VIF < 10$ and $Tolerance > 0.1$.

Table 4. Multicollinearity Test Results

Model	Collinearity Statistics		
1	(Constant)	Tolerance	VIF
	Total Service Variable	0,4	2,499
	Total Facility Variable	0,846	1,182

Source: Data processed by the author, 2025

Table 4 shows that all independent variables have VIF values < 10 and *Tolerance* > 0.1. This means there is no multicollinearity problem in the model.

Heteroscedasticity Test

The heteroscedasticity test examines the inconstancy of the residual variance. Detection is done through a *scatterplot* graph between predicted and residual values. There is no heteroscedasticity if the points spread randomly without a pattern.

Figure 2 shows a random distribution of points without forming a particular pattern. This indicates that there is no heteroscedasticity.

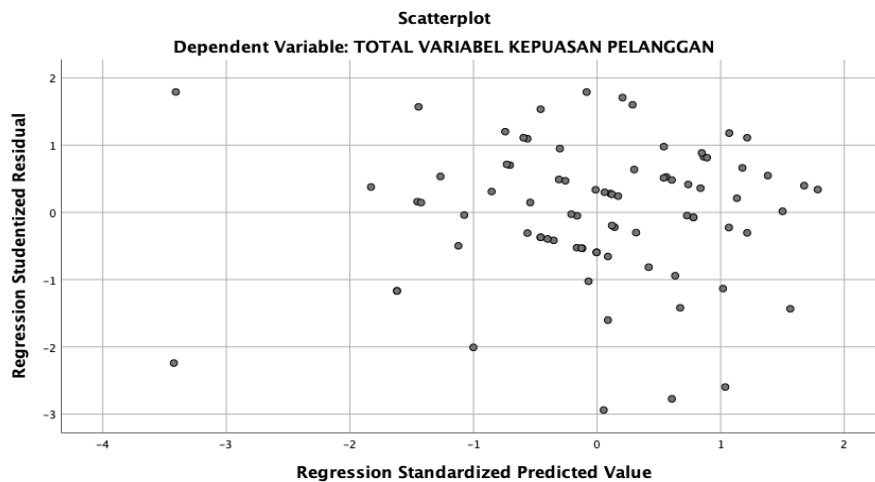


Figure 2: Heteroscedasticity Test Results
 Source: Data processed by the author, 2025

Based on the results of the normality, multicollinearity, and heteroscedasticity tests, all classical assumptions of the regression model have been met. The regression model used in this study is considered valid and suitable for further analysis.

Multiple Linear Regression Analysis

The Coefficient Table presents the estimation results of the regression model, including the coefficient values for each independent variable and the constant, as well as the significance level of the partial effect of each variable.

Based on Table 5, the multiple linear regression equation obtained is:

$$Y = 13.908 + 0.341X_1 + 0.064 X_2 + e$$

The interpretation of the regression model is as follows:

- Constant (a) = 13.908. If the total service variable and the total facility variable are 0 (zero) or constant (no increase or decrease), then the total customer satisfaction variable obtained is 13.908.
- Service variable = 0.341. If the total service variable increases by 1 (one) unit while the total facility variable remains constant, the total customer satisfaction variable will increase by 0.341.
- Facility variable = 0.064. If the total facility variable increases by 1 (one) unit while the total service variable remains constant, the total customer satisfaction variable will increase by 0.064.

Table 5. Regression Coefficient

Coefficients ^a	Unstandardized	Standardized
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		Coefficients		Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	13,908	1,855		7,496	0
	Total Service Variable	0,341	0,104	0,527	2,401	0,004
	Total Facility Variable	0,064	0,066	0,108	2,866	0,001

a. Dependent Variable: Total Customer Satisfaction Variable

Source: Data processed by the author, 2025

Hypothesis Test

Partial Test (t Test)

In this study, the T test is used to determine whether the service variables and facility variables partially have a significant effect on the total customer satisfaction variable.

The basis for decision making in the T test can be seen by comparing the significance value (Sig.) of the SPSS calculation results with the specified significance level (α) (generally 0.05):

If the Sig value $< \alpha$ (0.05), then H_0 is rejected and H_a is accepted, meaning that the independent variable partially has a significant effect on the dependent variable and if the Sig value. $\geq \alpha$ (0.05), then H_0 is accepted and H_a is rejected, meaning that the independent variable partially has no significant effect on the dependent variable.

**Table
test**

6. T

Coefficients ^a		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	13,908	1,855		7,496	0
	Total Service Variable	0,341	0,104	0,527	2,401	0,004
	Total Facility Variable	0,064	0,066	0,108	2,866	0,001

a. Dependent Variable: Total Customer Satisfaction Variable

results

Source: Data processed by the author, 2025

Based on Table 6, the T-test results for each independent variable are:

- 1) Service variable: The Significance value (Sig.) for the service variable is 0.004. Because $0.004 < 0.05$, partially the service variable has a significant effect on the customer satisfaction variable. This is also supported by the t-count value (2.401) which is greater than the t-table value at the 0.05 significance level and the relevant degrees of freedom.
- 2) Facility variable: The Significance Value (Sig.) for the facility variable is 0.001. Because $0.001 < 0.05$, partially the facility variable has a significant effect on the customer satisfaction variable. This is also supported by the t-count value (2.866) which is greater than the t-table value.
- 3) Conclusion of t test: The t-test results show that both independent variables included in the model, namely the service variable and the facility variable, partially (respectively) have a statistically significant effect on the customer satisfaction variable at the 0.05

significance level. This means that changes in services, while facilities remain, will significantly affect customer satisfaction, and changes in facilities, while services remain, will also significantly affect customer satisfaction.

5. Conclusion

Based on the results of data analysis, it can be concluded that the regression model used in this study has met the classical assumptions (normality, multicollinearity, heteroscedasticity), which ensures that the resulting regression model is valid for interpretation. The multiple linear regression results show that both independent variables, namely Service and Facilities, have a positive and significant effect on Customer Satisfaction. In more detail, the analysis results show that:

- a) Service (Sig. = 0.004; B = 0.341) has a significant positive effect on customer satisfaction with Beta = 0.527, which indicates that Service has a stronger influence than Facility.
- b) Facilities (Sig. = 0.001; B = 0.064) also have a positive effect on customer satisfaction, but with a smaller effect than services, reflected in the Beta value = 0.108.

Thus, the results of this study confirm that in order to increase customer satisfaction at PT Balancia Shipping Agency, improvements to Services should be the top priority, followed by improvements to Facilities.

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Hopefully, the results of this study can make a positive contribution to the development of the ship agency industry and improve the quality of services and facilities in this sector.

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