

# Model of Passenger Satisfaction on the Service Performance of the Gapura Surya Nusantara Passenger Port PT.Pelabuhan Indonesia III Branch Tanjung Perak Surabaya

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**Abstract.** Infrastructure is one of the supporting activities of transportation, such as airports, halte, terminals, and port buildings. The port terminal is one of the transportation infrastructure buildings used by passengers when they travel. The port terminal is expected to be able to provide good facilities for passengers while waiting for transportation. For this reason, it is necessary to do a model of passenger satisfaction on the performance of the passenger terminal in order to know what factors influence passenger satisfaction. The measurement of passenger satisfaction uses the classic assumption test method, and also tests the validity and reliability of the questionnaire submitted to the passenger. From the research that has been done, we get the final model of Passenger Satisfaction on the Service Performance of the Gapura Surya Nusantara Passenger Terminal as follows:  $Y_1 = 62.325 + 0.714X_1 + 0.020X_2 + 0.040X_5 + 0.575X_6 + 0.218X_8 + 0.134X_9 + 0.356X_{11} + 0.550X_{13} + 0.476X_{14} + 0.488X_{17} - 0.658X_{19}$ , the model is influenced by nine variables.

## 1. Introduction

Transportation is important for human, because if someone move from some place to another place its calling transportation. The port consist of land and sea around it with certain limits as a place of government activities and economic activities that are used as a place for boats to lean back, dock, board and ride passengers and / or loading and unloading goods. Up and down passenger activities occur at the passenger port terminal. The terminal is a transportation infrastructure for the purpose of loading and dropping passengers and goods and arranging the schedule of departures and arrivals of public transport.

Infrastructure s a supporting factor for the implementation of a process of transportation activities, transportation infrastructure can be in the form of port buildings, airports, bus stops, terminals, and roads. With the infrastructure of transportation activities can be supported properly so that transportation users can feel comfort and safety while carrying out transportation activities. One of them is the availability of terminals in passenger ports that are expected to function as intermodal and intramodal transport of passengers from sea transportation to land transportation. In the tourism sector the transportation is an important element that represents the first impression for tourists. Such elements include, for example, airports and ports, especially in passenger terminals. Activities in crowded passenger terminals as a place to change modes are the basis of that operations and management in the passenger terminal need to be considered[1].

The role of Quality of passenger terminal services is currently considered to have contributed to the attractiveness of the port[2]. Passenger port terminals are expected to be able to provide the best services starting from terminal facilities, especially comfortable waiting rooms, scheduling of appropriate sea transportation departures and arrivals, and procedures for anchoring ships. This is done to provide maximum service to users of sea transport vehicles and optimize terminal service performance, so that later it is expected to be able to contribute to regional revenues.

Surabaya is the second largest city in Indonesia, with a population around 3.000.000 peoples. Transportation activities in Surabaya are central to movement of goods and people both domestically and internationally. The Port of Tanjung Perak Surabaya is the gateway of the economy, transportation, transfer and other transportation activities in east java province. Urban developments that occur affect the magnitude of transportation activities that occur, such as transporting goods (export, import), the movement of people from one place to another to produce a larger economy, and human interest to travel long distances by public transportation.

The Port of Tanjung Perak Surabaya have has a passenger port terminal with the name Gapura Surya Nusantara which was built on an area of 13,273m<sup>2</sup> precisely in the North Surabaya section. Tanjung Perak Port is a sea transportation gate in East Java province. The Gapura Surya Nusantara Passenger Terminal has complete terminal facilities that meet the requirements, this terminal is predominantly domestic passenger shipping services as well as serving stopovers and passenger services on international ships within a certain period of time. The flow of passengers that occurred at the Gapura Surya Nusantara Passenger Terminal is uncertain because the arrival of the ship does not occur every day and the building is not well optimized. Then it is necessary to study the service improvements in the Gapura Surya Nusantara Passenger Terminal.

The Gapura Surya Nusantara Passenger Terminal certainly wants to provide services with a good level of satisfaction, especially to provide satisfaction for service to passengers. As a regulator and operator trying to provide a maximum form of service to support the sustainability of the system in the service performance of the Gapura Surya Nusantara Passenger Terminal. Existing transportation infrastructure still needs more attention to be addressed because the quality aspects of infrastructure services are still quite minimal.

Customer satisfaction is influenced by service quality to improve customer satisfaction by evaluating service quality. Therefore it is very important to identify specific service quality requirements, thereby fulfilling customer expectations by providing quality services[3]. Passenger satisfaction levels, as well as to maintain passenger numbers and increase revenue[4]. Satisfaction is the involvement of marketing concepts and predictions of user behaviour[5].

Gapura Surya Nusantara Passenger Terminal has several problems that can affect service to get passenger satisfaction. In addition, several variables that can influence the satisfaction of terminal passengers can be managed so that the results are in accordance with the existing conditions. It is expected that the Gapura Surya Nusantara Passenger Terminal will truly provide optimal benefits in the form of services to transportation users who utilize the terminal and the community using facilities / infrastructure / facilities that are in the Gapura Surya Nusantara Passenger Terminal, and are able to contribute revenue to the state, it needs to be managed as well as possible.

## **2. Theoretical Review**

### *2.1. Satisfaction Concept*

The basic concept of human interests is that when the main needs have been met, humans will increase the level of needs and desires that are higher. the concept is what motivates people to do activities to satisfy themselves.[6] The concept of general facility user satisfaction shows different request variations. Previous research has concluded that the main factor that becomes the decision of users to want to use public facilities is the production of services[7]. Customer satisfaction is determined by the optimal quality of service. the idea to increase customer satisfaction is to test the quality of the services provided. This becomes the basis of the importance of a service organization to review the

requirements of a particular service quality assessment[8].Satisfaction assessment analysis based on user perceptions aims to produce a positive impact on service satisfaction of public facilities for users, so as to improve service performance[9].

Customer satisfaction is a feeling of pleasure or disappointment someone who appears after comparing the performance (results) of products that are thought of the expected performance. Satisfaction is the feeling of being happy or disappointed someone who appears after comparing between perceptions or impressions of the performance or results of a product and expectations.

## 2.2. Dimensions Of Service Quality

The quality of service services has 5 (five) dimensions of measurement, namely:

- 2.2.1. *Tangibles*. That is the ability of a company to show its existence to external parties. Appearance, ability of facilities and physical infrastructure of the company and the surrounding environment are evidence of physical facilities / buildings, warehouses, employee appearance, and so forth.
- 2.2.2. *Reliability*, That is the company's ability to provide services as promised, quickly, accurately, accurately and reliably. Performance must be in accordance with customer expectations, which means time, the same service for all customers, a sympathetic attitude, and with high accuracy..
- 2.2.3. *Responsiveness*. That is the willingness of employees to be responsive to help customers and provide fast, precise service accompanied by clear service delivery. In this case the company responds quickly to consumer complaints, and is also quick to respond to changes that occur in the current situation
- 2.2.4. *Assurance*. That is knowledge, politeness, and the ability of company employees to foster customer trust in the company. This variable consists of several components including communication communication, credibility, security, competence competence, and courtesy of cortecy.
- 2.2.5. *Emphaty*. That includes ease in establishing relationships, good communication, personal attention and understanding of individual needs by customers by trying to understand the desires of consumers. Where a company is expected to have understanding and knowledge of customers, meet customer needs specifically, and have a comfortable operating time for customers.

Quality of service, which is felt by the user will be evaluated accordingly the difference between user expectations at service with customer perceptions about performance provided by the company[10].Service satisfaction is defined as the consumer experience of service provider behavior reactions. Defines customer satisfaction as customer expectations[11].

## 2.3. Passenger Satisfaction

Passenger satisfaction is what is based on a service, this concept is very important in marketing but also has the aim of improving the quality of the company[10].Stated that in determining the level of satisfaction, there are five the major factors must be considered by the company, namely product quality, service quality, emotional, the price, and the cost.

Satisfaction Theory can be broadly interpreted to explain passenger loyalty to specific forms of passenger terminal services and city bus service in Shaoxing, China[4].Previous research found that there were significant differences based on the importance of the measure of satisfaction, based on the passenger space for service improvement[12].The first step before conducting a proper survey is to

identify important factors related to the characteristics of facilities that have passenger terminals[13].The tendency of customer behavior is to involve products or services[14] Level of customer satisfaction with high service quality standards must be owned by the service provider, because of the quality of service is the basis for customer satisfaction[15].

### 3. Method

#### 3.1. Multiple Linear Regression Analysis

This analysis is intended to perceive the influence customer satisfaction the passenger terminal gate solar nusantara( gsn ) branch tanjungperak surabaya using formula linear regression multiple was quoted as saying by sugiyono ( 2006: 261 ), namely :

$$Y = a + b_1 \cdot X_1 + b_2 \cdot X_2 + \dots + b_n \cdot X_n \quad (1)$$

Information :

- Y = Satisfaction Passenger (bound)
- X = Service Performance (free)
- a = Constant
- b = the Regression Coefficient

**Table 1.** Variables used for analysis

Independent variable	Dependent variable
Satisfaction passenger (Y)	Passenger terminal condition (X1)
	Passenger terminal facilities (X2)
	Schedule departure (X3)
	The appearance (X4)
	Convenience of passenger (X5)
	Moda transfer facility (X6)
	Waiting room capacity (X7)
	Punctuality of departure (X8)
	Equality of the fare (X9)
	Information notice (X10)
	Officers service (X11)
	Security in terminal (X12)
	Handling complaints (X13)
	Fast and accurate service (X14)
	Center of aspiration or complaint (X15)
	Help passenger difficulty (X16)
	Delay (X17)
	Knowledge and skills of officers (X18)
	The attitude of officers serving passengers (X19)

#### 3.2. Testing Data

Data analysis used is questionnaires validity Test, reability Test, and questionnaires classic assumption test

## 4. Results and Discussion

### 4.1. Normality Test

A test of normality is testing a model, regression the dependent variable, an independent variable or both have the normal distribution or close to normal. Testing of normality data in this study using one sample kolmogorov-smirnov test on the condition if  $asymptotic\ sig (2\text{-tailed}) > 0,05$  berdistribusi normal then the data. On the contrary if  $asymptotic\ sig (2\text{-tailed}) < 0,05$  then the data do not berdistribusi normal. Based on the analysis of the results, as follows:

**Table 2.** The result of normality test

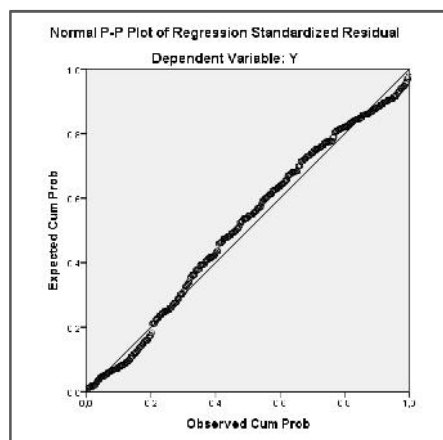
One-Sample Kolmogorov-Smirnov Test			KepuasanP umpang
N			320
Normal	Mean		,000
Parameters <sup>a,b</sup>	Std. Deviation		4,933
Most Extreme	Absolute		,056
Differences	Positive		,044
	Negative		-,056
Kolmogorov-Smirnov Z			1,006
Asymp. Sig. (2-tailed)			,264

a. Test distribution is Normal.

b. Calculated from data.

Source :The Analysis of Survey Data

From the testing above got that column  $asymptotic\ sig (2\text{-tailed})$  having value 0,264 states that the economic situation of significance more than 0.05 so data expressed berdistribusi normal. While for testing normal probability can be seen in output regression the following conditions: if the data spread around the diagonal line and follow a diagonal direction, so model regression meet the assumption normality; here is the result of the output regression:



**Figure 1.** Normal probability plot

Model Summary <sup>b</sup>										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,447 <sup>a</sup>	,894	,666	5,087	,894	3,938	19	300	,000	2,034
a. Predictors: (Constant), X19, X5, X10, X16, X14, X17, X8, X4, X6, X18, X13, X15, X11, X3, X7, X11, X9, X1, X2										
b. Dependent Variable: Y										

Of a picture above can be seen that data spread around the diagonal line and follow a diagonal direction, so data distributed normally. = 1,936 < 1,941 < 2,064 But this calculation obtained does not happen correlation.

#### 4.2. Autocorrelation Test

The durbinwatsonautokorelasi using standard (DW), decision making provision for existing or not autokorelasi in the data is :

4.2.1.  $dU < d < 4-dU$  so  $H_0$  recived = correlation does not happen

4.2.2.  $dW < dL$  ataud  $W > 4 - dL$  so  $H_0$  rejected = corelation happened

4.2.3.  $dL < d < dU$  ataud  $4 - dU < d < 4 - dL$  there is no conclusion , which means there will be no correlation

#### 4.3. Multicollinearity Test

Statistical analysis linear regression and the worship of idols to analyze whether going on multikolinearitas saw the value or not with tolerance and VIF (inflation appears factor). The less the value of tolerance and bigger vif so it can be concluded are close to sealing deal multikolinearitas.

4.3.1. Tolerance > 0,1 & VIF < 10 = not multicollinearity problem occurs

4.3.2. Tolerance < 0,1 & VIF > 10 = multicollinearity problem occurs

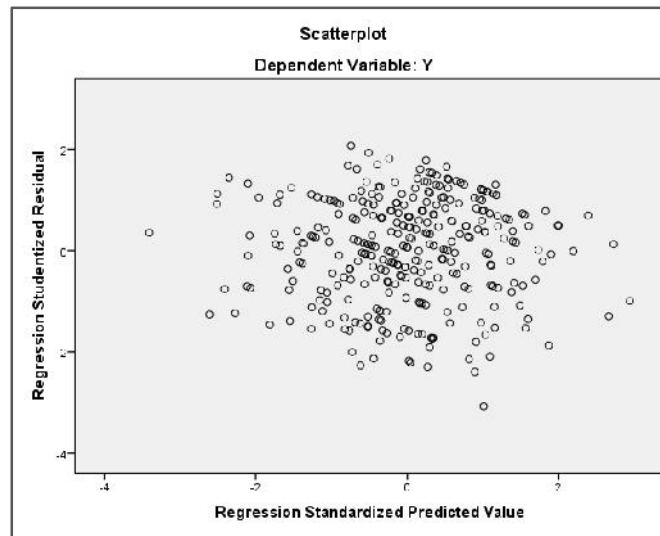
**Table 3.**The result of multicollinearity test

Model	Collienarity statistic		Conclusion
	Tolerance	VIF	
Statisfaction passenger (y)			
Passenger terminal condition (X1)	,900	1,112	Non multikoliniearitas
Passenger terminal facilities (X2)	,890	1,124	Non multikoliniearitas
Schedule departure (X3)	,943	1,060	Non multikoliniearitas
The appearance (X4)	,948	1,055	Non multikoliniearitas
Convenience of passenger (X5)	,957	1,045	Non multikoliniearitas
Moda transfer facility (X6)	,972	1,029	Non multikoliniearitas
Waiting room capacity (X7)	,943	1,060	Non multikoliniearitas
Punctuality of departure (X8)	,921	1,086	Non multikoliniearitas
Equality of the fare (X9)	,919	1,088	Non multikoliniearitas
Information notice (X10)	,943	1,061	Non multikoliniearitas
Officers service (X11)	,926	1,079	Non multikoliniearitas
Security in terminal (X12)	,929	1,076	Non multikoliniearitas
Handling compalints (X13)	,966	1,036	Non multikoliniearitas
Fast and accurate service (X14)	,979	1,022	Non multikoliniearitas
Center of aspiration or complaint (X15)	,955	1,047	Non multikoliniearitas
Help passenger difficulty (X16)	,935	1,069	Non multikoliniearitas
Delay (X17)	,911	1,098	Non multikoliniearitas
Knowledge and skills of officers (X18)	,947	1,057	Non multikoliniearitas
The attitude of officers serving passengers (X19)	,909	1,101	Non multikoliniearitas

In the multikoliniearitas above the tolerance value at more than 0,1 and value in less than vif 10 so in conclusion that in the model regression. multikoliniearitas does not happen.

#### 4.4. Heteroscedasticity Test

Heteroskedastisitas test used the time of the state where happened dissimilarity variant of residual regression on the model. Regression model good requires no problem heteroskedastisitas. To analyzeheteroskedastisitas namely by see a pattern of dots on scatterplots with the provisions if dots spread with a completely unsustainable pattern irregular above and below the 0 on the y axis there is no heteroskedastisitas there



**Figure 2.**Pola scatterplots

was a problem. Based on output scatterplots discovered that :

- 4.4.1. Data disseminators points above and below or around the 0 and it gathers above / under the spread of dots.
- 4.4.2. Data do not form a wavy pattern wide and narrows and widen back.
- 4.4.3. Dissemination of the data was not patterned

In the results of the graph can be seen in the pattern that the points spread irregularly above and below the number 0 on the Y axis and also in accordance with other provisions, then the regression model does not occur multicollinearity.

## 5. Conclusion

Based on the results of a study of the analysis of the Passenger Satisfaction Model for Service Performance of Passenger Terminals, Gapura Surya Nusantara PT. The Port of Indonesia III Tanjung Perak Branch Surabaya, it can be concluded that the form of the passenger satisfaction model on the service performance of the passenger terminal at Gapura Surya Nusantara Tanjung Perak Branch Surabaya is as follows:  $Y_1 = 62,325 + 0,714X_1 + 0,020X_2 + 0,040X_5 + 0,575X_6 + 0,218X_8 + 0,134X_9 + 0,356X_{11} + 0,550X_{13} + 0,476X_{14} + 0,488X_{17} - 0,658X_{19}$

The model of passenger satisfaction on the service performance of passenger terminals at Gapura Surya Nusantara above is influenced by variables among others as follows X1 (Passenger Terminal Condition), X2 (Passenger Terminal Facilities), X5 (Convenience of Passenger Terminal Facilities), X6 (Moda Transfer Facility), X8 (Punctuality of Departure), X9 (Equality of the Fare), X11 (Officers Service), X12 (Security in Terminal), X13 (Handling Complaints), X14 (Fast and Accurate Service), X17 (Delay), and X19 (The Attitude of Officers Serving Passengers)

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