THE RELATIONSHIP BETWEEN SERVICE QUALITY, TIMELINESS OF ARRIVAL, DEPARTURE FLIP SHIP LOGISTICS AND PEOPLE AND CUSTOMER SATISFACTION: A CASE IN INDONESIA

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ABSTRACT

The purpose of the study was to analyze the effect of service quality, timeliness of arrival, departure flip ship logistics and people on the satisfaction of logistics passengers and ferry people at the Tanjung Priok Ferry Port. This study used a sample of 64 out of 100 ferry users and the Tanjung Priok Port community with a random mix sampling method. The test used to test the research instrument in the form of validity and reliability, while to analyze the data used multiple regression analysis; classical assumption test consisting of normality test, heteroscedasticity test and multicollinearity test; and hypothesis testing, namely t test and F test. The results of the study using multiple regression analysis indicate that the service quality variable and time zone have a positive effect on customer satisfaction on ships passing through Tanjung Priok Port. Based on the results of the study that increasing the punctuality of anchoring and departing is a variable desired by users and passengers, but does not ignore other variables because these variables also have a positive effect on crossing logistics service users and the community. The results showed that the service quality variable had an effect of 10.00%, and timeliness had an effect of 9.90%.

Keywords: Service Quality, Timeliness, Customer Satisfaction, Logistics, Transportation.

INTRODUCTION

Indonesia as an archipelagic country has several modes of transportation, one of which is the use of sea transportation; transportation is especially used for logistics delivery of goods and services, and transportation of people. Sea transportation has a very important role for archipelagic countries. Considering that Indonesia has 17,000 islands and is united by a vast ocean, sea transportation is the "vein" for the Indonesian economy. Because transportation is very vital for the economy, sea transportation must be developed properly and correctly to support economic growth. If sea transportation is disrupted, the national economy will also be

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disrupted. The success of improving ship services is an improvement in port performance so that it can provide satisfaction for service users. The main problem in sea transportation services at Tanjung Priok Port is that it is less efficient and effective in-service performance and timeliness of arrival and departure of ferry boats to transport logistics and people. One of the complicated problems that often occur at the port is the queue of large trucks going to Tanjung Priok Port, Central Jakarta as if it has become a routine. The condition of the roads around Tanjung Priok Port is also considered to be increasingly concerning. Congestion occurs not only inside the port, congestion outside the port is no longer under control, thus creating losses for service users, both materially and non-materially. Economic development requires adequate and adequate transportation services (Lenz et al., 2018). Without transportation as a means of supporting it cannot be expected to achieve satisfactory results in the economic development of a country. In the process of international trade, especially the handling of exports and imports, there are various parties involved besides importers and exporters, either directly or indirectly.

The port is one part of the transportation infrastructure that can generate economic activity in a region because it is part of the chain of transportation and logistics systems. In general, a port is a place for ships to dock safely and carry out loading and unloading of goods and/or boarding and dropping passengers. Therefore, port planning plays a key role in operating ships, so many experts argue that port development needs to consider the trend of shipping technology so that the costs incurred do not harm shipping operators (Lee & Nam, 2017). A port is a place that consists of land and Waters, with certain limits, as a place for the activity of the government and the business activity that is used as a place for ships to dock, up and down passengers, or load and unload goods, in the form of termination and the chambers of the ship-ship that is equipped with all facilities. safety and security activities of the delivery and support of the port as well as a place for the transportation of intra-and intermodal. Tanjung Priok Port is one of the busiest ports in Indonesia at this time, currently, it is still used as a loading and unloading port for inter-island general cargo and some real ports have long been used as a place for loading and unloading goods and crossing people. Its strategic location because it is in the capital city area, Tanjung Priok Port is one of the Sea Toll Roads launched by the Indonesian government.

LITERATURE REVIEW

Service Quality

Service Quality (SQ) is the level of service related to the expectations and needs of service users. This means that the service has more value if the company can provide or provide products and services by the wishes, needs, and expectations of users. Service is often associated with how the quality of service is provided. The good or bad of service can be assessed through the quality of service provided by the service provider. According to Parasuraman (2010), SQ is based on the theory of the existence of confirmation about hope and rely on the gap between the customers about the service provided and the evaluation of the perceptions about the service. SERVQUAL approach is multidimensional using the dimensions of assurance, empathy, relabilitas, response, and tangibbles. Approach SERVPERF, assume that the quality of the service only needs to be measured with the perception of the quality of the customer (Cronin & Taylorm 1992). SQ plays a very important role in determining customer/service user satisfaction (Angelova & Zekiri, 2011). To support good service quality, besides having to be supported by the right techniques and procedures so that the facilities contained in the company can function

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properly, safety performance indicators also need to be developed because they can be used as comparisons with other modes (Gitelman et al., 2014). Customer satisfaction will be created well if there is good interaction between the two (Zeithaml, 2002).

The validity of SERVQUAL as an instrument for measuring SQ in delivery has recently been challenged by (Chen et al., 2009). The reasons stated; First, the SERVQUAL indicator is generic and does not explain the uniqueness of the shipping industry (Ramseook et al., 2010). Second, the SERVQUAL instrument is developed from the perspective of the end consumer. This should be contrasted with shipping, which is the dominant business-to-business industry. As a result, managing SQ is more complex, connecting a larger group of customer representatives who interact with service providers on a personal or functional level (Gounaris, 2005). Third, SERVQUAL is considered an instrument that mainly focuses on the service delivery process (Ladhari, 2009). In contrast to many types of services, shippers are not physically present to experience the transport service process (Frankel, 1993). It is thus conceivable that in the context of shipping, SQ is valued with a greater emphasis on technical quality. This assumption is consistent with the findings of (Thai et al., 2014), who found that the outcome dimension was the most important service attribute perceived by the sender.

Timeliness

In the literature, contextually there are two definitions of time constants. Kahn et al. (2002) define timeliness as the extent to which the information is sufficiently up-to-date for the task at hand, while (Michnik & Lo, 2009) define timeliness as arriving early or at the right time. Punctuality in logistics and people crossing services is the arrival and departure of ships according to a predetermined schedule. The Ship Travel Chart itself is a guide to the arrangement of the ship's journey which is described in the time of arrival, departure, docking dock, and travel time. In terms of planning activities for ships to dock, they are often late and not according to schedule. This can be caused by several factors, such as equipment damage and ship queues. Mattila and Mount (2006) investigated the role of timely response in promoting satisfaction with handling complaints after service failure. The results show that, in a call-center context, timeliness and problem resolution are important determinants of complaint handling satisfaction and satisfaction with problem resolution is lower when respondents consider delays in resolution to be unnecessary. Reserve ships in a stand-by schedule must be able to be operated within no more than 2 (two) hours after receiving an operating order from the official who sets the schedule, (c) The rest schedule (off), is the ship's operating rest schedule at crossing crossings. which is a reserve ship, and (d) Docking schedule, is a ship's schedule for docking to undergo maintenance and must follow the determination of the official who has the authority in the field of ship worthiness. The operator's ability to provide transportation services on time (up to the final destination) according to a set schedule is an indicator of timeliness. Therefore, punctuality is the implementation of the agreement at a certain time between different parties (Huang et al., 2019). The realization of the docking time sometimes does not match the predetermined plan due to the lack of Human Resources in charge of ship docking activities. In this case, Human Resources are needed to be able to handle and manage ship docking activities such as managing documents, managing ship fuel supplies, and managing freshwater supplies.

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Satisfaction

Service user satisfaction is determined by service users' perceptions of product or service performance in meeting service user expectations (Permana et al. 2021). In general, satisfaction is a person's feelings of pleasure or disappointment arising from the compare products (or results) against an expectation of them (Riyanto et al., 2021). A theory that explains how customer satisfaction or dissatisfaction that is formed is the hope of the model of certainty, which suggests that satisfaction and dissatisfaction is the impact of the comparison between the customer prior to purchase and what is obtained by the customer of the product. The satisfaction felt by service users can lead to a positive response for the company in the form of support for the existence of the port. Another benefit of the birth of user satisfaction is the dissemination of positive information to other users and the company's reputation is getting better. In addition to the quality of administrative services, loading and unloading services in the field both in terms of speed and accuracy of service also affect service user satisfaction (Hadiyati, 2014). Because service users do not just buy products/use their services but always pay attention to everything related to the quality aspects attached to these products/services (Mansur et al., 2021). According to Pahala et al. (2021), satisfaction can lead to buying interest if service operations are engineered. If the management of the port operational system is managed properly, it can lead to and increase productivity and efficiency in the field, and in itself will provide satisfaction for service users.

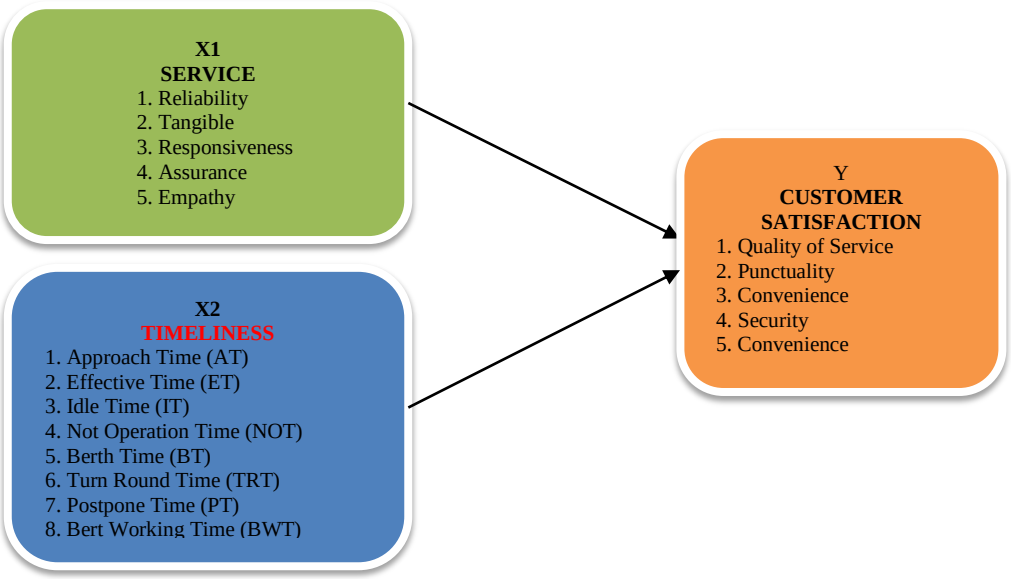

FIGURE 1
FRAMEWORK

Research Hypothesis

H_1: *Service has an effect on Customer Satisfaction on freight transport ships and logistics and people crossings at Tanjung Priok Port.*

H_2: *Timeliness affects customer satisfaction for ship transportation services and logistics as well as crossing people at Tanjung Priok Port.*

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H_3: *Service and Timeliness affect customer satisfaction on transportation and logistics services and people crossing at Tanjung Priok Port.*

RESEARCH METHOD

This study was conducted at Tanjung Priok Port, Jakarta. The population in this study is a generalization consisting of objects that have a relationship with the use of Logistics Transportation Services and the community which is then determined by the researchers to be studied and then drawn conclusions and used as respondents in this study. The sampling technique used is the type of probability sampling with a proportional random arrangement. Users or passengers who are used as examples are 64 people from a population of 100 people. The tests used to test the research instruments are in the form of validity and reliability tests, while multiple regression analysis is used to analyze the data; classical assumption test consisting of normality test, heteroscedasticity, autoregressive and multicollinearity test. The research method used is a quantitative research method with multiple regression analysis. Regression analysis is used to estimate the value of the Y variable based on the value of the X variable and estimate the change in the Y variable for each unit change in the X variable. The form of the multiple regression equation is = a + b1X1 + b2X2 where X as the independent variable consists of X1 Service Quality, X2 Timeliness, and the dependent variable Y User Satisfaction. Then also calculated the correlation coefficient to see the close relationship between variables and test the hypothesis. The questionnaire instrument grid includes several indicators such as Ship Schedules, namely Information Before Arrival and Ship Execution, Ship Departure indicators, namely Pre-Departure Activities and Schedule Information and Service Quality indicators, namely Physical Appearance, Reliability, Responsiveness, Assurance, and Empathy.

RESULTS AND DISCUSSION

Validity Test

Based on Table 1, it can be seen that all the statement item of the variable service quality (X1), for the delivery of User Satisfaction (Y), and variable Precision of Time (X2) for user satisfaction (Y) have a level of significance less than 0.05(5%) and R (eefisien) is greater than 0.3. Thus it can be stated that all the items statements for all variables are valid.

Table 1
VALIDITY TEST RESULTS

Variable	Items	Correlation (r)	Significant	Information
X1 Service quality	X1	0.615	0.3	Valid
	X2	0.570	0.3	Valid
	X3	0.637	0.3	Valid
	X4	0.712	0.3	Valid
	X5	0.629	0.3	Valid
X2 Punctuality	X1	0.534	0.3	Valid
	X2	0.501	0.3	Valid
	X3	0.599	0.3	Valid
	X4	0.511	0.3	Valid
	X5	0.651	0.3	Valid
	X6	0.530	0.3	Valid

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	X7	0.592	0.3	Valid
	X8	0.585	0.3	Valid
Y Customer satisfaction	Y1	0.819	0.3	Valid
	Y2	0.683	0.3	Valid
	Y3	0.785	0.3	Valid
	Y4	0.767	0.3	Valid
	Y5	0.639	0.3	Valid

Source: Primary Data processed, 2021

Reliability Test

Reliability criteria using Cronbach's alpha is if the result of the alpha correlation is greater than 0.6, then the instrument is said to be reliable and vice versa. The results of reliability testing generated through the SPSS program can be seen in the following Table:

Table 2
RELIABILITY TEST RESULTS

Variable	Alpha coefficient	Questionnaire reliability standards	Information
Quality of Service (X1)	0.717	0.6	Reliable
Punctuality (X2)	0.719	0.6	Reliable
Service User Satisfaction (Y)	0.769	0.6	Reliable

Source: Primary Data Processed, 2021

From Table 2 it can be seen that all variables have alpha coefficients greater than 0.6. This shows that all statement items in the questionnaire are reliable.

Normality Test

The purpose of the tests of normality to test whether the variables are dependent and independent variables both have a normal distribution or not, a regression model that better is the data normally distributed or close to normal. (Ghozali, 2006) Normality test of data using one-sample Kolmogorov-Smirnov test, if possible asymp.sig > 0.05, the research data is normally distributed.

Table 3
NORMALITY TEST RESELTS

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		100
Normal Parameters, b	mean	0E-7
	Std. Deviation	. 68020703
Most Extreme Differences	Absolute	0.139
	Positive	0.105
	negative	-170
Kolmogorov-Smirnov Z		1,591
Asymp. Sig. (2-tailed)		**0.617**

a. Test distribution is Normal.

b. Calculated from data.

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B From the Table 3 above, it can be seen that the value of asymp.sig (2-tailed) is 0,617 > 0.05. So the result can be stated that the data used in this study is normally distributed because the value of significance of the test of normality for each variable is greater than (α = 0.05) which is 0.617 > 0.05.

Table 4
AUTOCORRELATION TEST TABLE

Model Summary

Model	R	R Square	Adjusted R Square	Std. The error of the Estimate	Durbin-Watson
1	0.446a	0.199	0.169	3.59650	1.940

a. Predictors: (Constant), SERVICE, TIMELINESS
b. Dependent Variable: CUSTOMER_SATISFACTION

From the Table 4 above, it can be seen that the Durbin-Watson value is 1.940. The Durbin-Watson value must be between dL and (4 – du) to say that there is no autocorrelation symptom. From the value listed in the table, the value is more than the dL value (1, 4954). And less than the value (4 – du) or (4 – 1, 6430) or 2, 3570. The dL and du values can be seen in the Durbin-Watson table for alpha = 5%. So from the values listed in the table, it can be seen that 1,940 < 2, 3570. Thus, it can be concluded that there is no autocorrelation symptom.

Table 5
HETEROSCEDASTICITY TEST

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.239	3.184		0.703	0.485
	Service	0.002	0.108	0.003	0.019	0.985
	Punctuality	0.030	0.160	0.027	0.189	0.851

From the Table 5 above, it can be seen that the significance value of the Service variable is 0.985. Where is 0.985 > 0.05, and the significance value of the punctuality variable is 0.851, where 0.851 > 0.05. This means that there is no heteroscedasticity.

Correlation Analysis Results

Calculation of correlation analysis using the Pearson Product Moment correlation was carried out to determine how strong the relationship between several independent variables was studied in this study. This calculation uses the SPSS program, and the results are as shown in the following Table 6.

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Table 6
PEARSON PRODUCT MOMENT CORRELATION RESULTS

		Service	Punctuality	Customer satisfaction
Service	Pearson Correlation	1	0.221	0.350**
	Sig. (2-tailed)		0.102	0.008
	N	56	56	56
Punctuality	Pearson Correlation	0.221	1	0.348**
	Sig. (2-tailed)	0.102		0.009
	N	56	56	56
Customer satisfaction	Pearson Correlation	0.350**	0.348**	1
	Sig. (2-tailed)	0.008	0.009	
	N	56	56	56

***. Correlation is significant at the 0.01 level (2-tailed).*
Sources of data processed by researchers (2021)

To interpret the Figures 1 & 2 obtained from the Table 6 above, the following criteria are used

Table 7
CRITERIA FOR INTERPRETATION OF THE LEVEL OF RELATIONSHIP BETWEEN VARIABLES

Correlation coefficient	Relationship Level
0.000 – 0.199	Very low
0.200 – 0.399	Low
0.400 – 0.599	Currently
0.600 – 0.799	Strong
0.800 – 1,000	Very strong

Source: (Sugiyono, 2009)

From the Table 7 above, it can be explained that the relationship between the variables of service (X1) and Timeliness (X2) to obtain the value of 0,221 when to consult with a table of the interpretation of the value of r (correlation), has a low relationship and not reasonable because the value is positive.

Data Interpretation

The results of the calculation of the influence of service (X1) and timeliness (X2) on customer satisfaction (Y) simultaneously.

Table 8a
THE CALCULATION OF THE EFFECT OF X1, X2 ON Y SIMULTANEOUS SUMMARY MODEL

Model Summary				
Model	R	R Square	Adjusted R Square	Std. The error of the Estimate
1	0.446a	0.199	0.169	3.59650

a. Predictors: (Constant), SERVICE, TIMELINESS

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Table 8b
CALCULATION OF THE EFFECT OF X1, X2 ON Y SIMULTANEOUS ANOVA MODEL

ANOVAa

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	170.492	2	85.246	6,590	.003b
1 Residual	685.547	53	12,935		
Total	856,039	55			

a. Dependent Variable: CUSTOMER_SATISFACTION
b. Predictors: (Constant) SERVICE, TIMELINESS

Based on the Table 8 (a & b) above in the ANOVA section, it can be seen that the p-value sig. 0.003 < 0.05 and F count 6.590 > F Table 3, 17 (Ftable is seen from table F with dk value of denominator=56–2 – 1=53 and dk of numerator=2 at 5% significance level). While the correlation R = 0.446, which means that there is a moderate correlation between Service and Timeliness of Customer Satisfaction.

The decision of the simultaneous hypothesis test is H0 is rejected and Ha is accepted, meaning that service and punctuality affect customer satisfaction. The magnitude of the simultaneous effect is 19, 90 % (R2 = 0.199). While the remaining 80, 10% are influenced by other factors not examined.

2. The results of the calculation of the effect of service (X1) and timeliness (X2) on customer satisfaction (Y) partially in Table 9.

Table 9
CALCULATION OF THE EFFECT OF X1, X2 ON Y PARTIAL COEFFICIENT MODEL

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11,331	4.960		2.284	.026
	SERVICE	.383	.168	.287	2.276	.027
	PUNCTUALITY	.564	.250	.284	2.256	.028

a. Dependent Variable: CUSTOMER_SATISFACTION

To partially test the hypothesis, for the service variable (X1) p-value 0.027 < 0.05 or thitug 2, 276 > Table 2, 003. Then the product quality variable (X2) p-value 0.028 < 0.05 or thitug 2, 256 > t Table 2, 003.

The decision of the partial hypothesis test is:

H_1: *H0 is rejected and Ha is accepted, meaning that Service (X1) has a partial effect on Customer Satisfaction (Y)*

H_2: *The second hypothesis: H0 is rejected and Ha is accepted, meaning that punctuality (X2) has a partial effect on customer satisfaction (Y).*

Based on the results of the above calculations, the coefficient value of the revised model path of the influence of Service (X1) and Timeliness (X2) on Customer Satisfaction (Y) is as follows:

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Table 10 PATH CALCULATION RESULT TABLE	
Variable	***Path Coefficient***
Service (X1)	0.287
Punctuality (X2)	0.284

Source: The results of statistical calculations using spss

The Table 10 above describes the results of the path calculation, that the X1 variable has a path coefficient of 0.287, X2 has a path coefficient of 0.284. The results are described in the path equation as below.

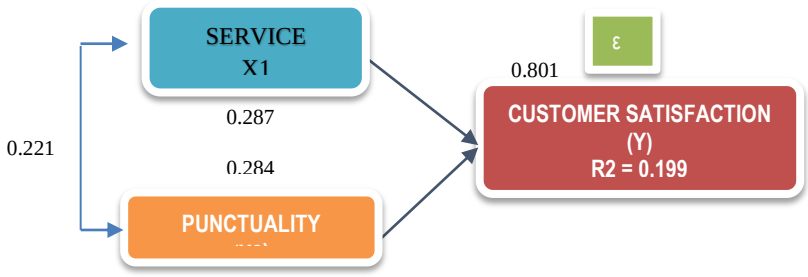

FIGURE 2
PATH EQUATION IMAGE

Direct influence (Direct Effects) with path analysis can be calculated through the results of the influence of the calculation of the regression (X1 and X2) and then squared (a2). While an indirect effect on Y can be calculated service (X1) on customer satisfaction (Y) through the precision (X2). And delay (X2) on customer satisfaction (Y) through the Service (X1).

From the above data, it can be seen direct and indirect effects by path analysis the independent variable on the Y as the dependent variable. For more details on the calculation of the effect of the above variables, see the calculation table below:

The influence of service (X1) on customer satisfaction (Y) is:

Table 11 EFFECTS OF X1 ON Y			
Variable	**Path analysis interpretation**	**Calculation Process**	**Amount of Influence**
X1	Direct influence on Y	0.287 x 0.287	0.082
	Indirect effect via X2 to Y	0.287 x 0.221 x 0.284	0.018
	Amount		0.100

Source: Primary data reprocessed

From the Table 11 above, it can be seen that the direct influence of service on customer satisfaction is 0.082 through Punctuality of 0.018, and overall is 0.100.

2. The effect of Timeliness (X2) on Customer Satisfaction (Y) is:

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Table 12 EFFECT OF X2 ON Y			
Variable	**Path analysis interpretation**	**Calculation Process**	**Basis of Influence**
X2	Direct influence on Y	0.284 x 0.284	0.081
	Indirect effect via X1 to Y	0.284 x 0.221 x 0.287	0.018
	Amount		0.099

Sources of data processed by researchers (2021)

From the Table 12 above, it can be seen that the effect of Direct Timeliness on Customer Satisfaction is 0.081 through Service Quality of 0.018 and overall of 0.099.

Table 13 Effect of X1 and X2 on Y				
Variable	**Customer Satisfaction (Y)**			
	Direct Influence	**Indirect Influence**		**Total Influence**
		X_1	**X_2**	
Service (X1)	8.20%	-	1.80%	10.00%
Punctuality (X2)	8.10%	1.80%	-	9.90%
Total Influence	16.30%	1.80%	1.80%	19.90%

Source: Results of data processing

Based on the Table 13 above, it can be seen that the Service variable (X1) has a direct effect of 8.20%, the indirect effect is through its relationship with Timeliness (X2) is 1.80%, so the total effect is 10.00%. Meanwhile, the time accuracy variable (X2) has a direct effect of 8.10%, the indirect effect through its relationship with the service (X1) is 1.80% so that the total effect is 9.90%. So that the total effect of overall service (X1) and punctuality (X2) on customer satisfaction (Y) is 19.90%. Meanwhile, other factors that were not examined and also influenced the customer satisfaction of Tanjung Priok Port were shown by the value of Pyε = 0.801 or 80.10%. With the following calculation: = 1-R2(0.199) = 0.801 or 80,10 %.

CONCLUSION

Based on research on users of the Transportation and Logistics Ferry Port and the people of Tanjung Priok Jakarta. To see the effect of the important elements of user service consisting of Service Quality, Timeliness, on the satisfaction of port service users, several conclusions can be drawn, including: There is an effect of Service on Tanjung Priok Port User Satisfaction with a magnitude of 10.00%. There is an effect of Punctuality on Tanjung Priok Port User Satisfaction with the magnitude of the effect of 9.90%. There is an effect of Service and Timeliness together on Tanjung Priok Port User Satisfaction with the magnitude of the effect of 19.90%. The quality of service is further improved for users of logistics transportation services and people, Addition of facilities in the port area so that customer satisfaction is always fulfilled. Ship arrival and departure schedules are further improved so that there are no long queues inside and outside the port. Research has limitations on the use of service factors in determining customer satisfaction, while many others can influence it. For this reason, future research is recommended to expand other factors that can determine customer satisfaction, for example; fares, travel security and

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safety, and accurate information

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Citation Information: Widiyanto, P., Jaya Sakti, R.F., Setiawan, E.B., Manfaluthy, M., Suryaningsih, L., Ricardianto, P., Kamar, K., & Endri, E. (2021). Academy of Entrepreneurship Journal, *27*(6), 1-10.