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| **Measurement of Service Quality Using Single Truck Identification Data (STID) on Service User Satisfaction at the Main Port of Tanjung Perak Surabaya**1Widi Arum Wardani, 2Rizqi Aini Rakhman, 3PrimaYudha Yudianto, 4Trisnowati Rahayu*1,2,3,4Politeknik Pelayaran Surabaya**Correspondence email of author:* *widiarum760@gmail.com* |
| *Submitted : \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Revised : \_\_\_\_\_\_\_\_\_\_\_\_ Accepted : \_\_\_\_\_\_\_\_\_\_\_* |

***Abstract***

This study aims to measure how much the quality of service quality of the use *of Single Truck Identification Data* (STID) affects service users at Tanjung Perak Port. The research method used in this study is a quantitative research method, the population in this study is service users who use *the Single Truck Identification Data* (STID) card. The sampling technique used is the census technique, which is a sampling technique in which all members of the population are sampled. The results of the study showed that the quality of STID services had a significant influence on the level of satisfaction of service users, The results of the simple linear regression test showed a significance value of 0.000 (< 0.05) with a determination coefficient (R²) of 0.872, which means that 87.2% of service user satisfaction can be explained by the quality of STID services, while the rest was influenced by other factors that were not studied in this study. From the results of the descriptive analysis, most of the service quality indicators received high ratings from respondents.

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| ***Keywords:*** *Service Quality, Service User Satisfaction, Single Truck Identification Data (STID), Port*  |

# INTRODUCTION

The Port of Tanjung Perak is one of the most important ports in Indonesia because of its strategic location as the gateway to the eastern region and supported by East Java's strong economic growth. This has led to a significant increase in the flow of domestic and international goods (Syarifuddin et al., 2016)

Ports as centers of international and domestic trade need to improve their performance in terms of service, safety, and security. Adequate transportation facilities are very important to support the smooth flow of goods. Effective operation of trucks within the port is crucial to avoid congestion caused by truck congestion (Putri Dwilestari et al., 2024)

In an effort to improve the efficiency of port services, PT Pelabuhan Indonesia in collaboration with the Municipal Affairs Office and the Tanjung Perak Main Port Authority launched the Single Truck Identification Data (STID) system on June 28, 2022. This step is part of the commitment to improve services in the port area and also as an implementation of the recommendations of the National Strategy for Corruption Prevention (Stranas PK) in the context of implementing the National Logistic Ecosystem (NLE) in 10 priority ports.

The implementation of the STID system is based on strong regulations, namely Presidential Instruction No. 5 of 2020 concerning the Arrangement of the National Logistics Ecosystem and the Joint Decision of the Leadership of the Corruption Eradication Commission. Furthermore, the Decree of the Director General of Sea Transportation No. KP-DJPL 513 of 2022 regulates the implementation of this system at ports. The Ministry of Transportation plays an important role in integrating the licensing system and export-import services through the Indonesia National Single Window (INSW) as well as organizing port spaces and goods distribution channels effectively.

The implementation of port services electronically and online at the Main Port of Tanjung Perak Surabaya has had a significant impact on time efficiency, transparency, and ease of the goods service process. With online services, the potential for fraud such as corruption, collusion, and nepotism can be minimized because all processes are carried out digitally without direct interaction between officers and service users (Scott, 2020).

The implementation of STIDs still faces several challenges, such as accessibility issues and data accuracy, which impact user satisfaction. Further evaluation is required to ensure that the system meets the expected quality standards and responds effectively to the needs of users.



**Figure 1.** Truck Registration Data at Tanjung Perak Port Surabaya as of May 31, 2024

Source : Data from the Tanjung Perak Main Port Authority and Kesyahbandaran Office (2024)

Data shows that of the 13,607 trucks registered at the Port of Tanjung Perak Surabaya, as many as 8,608 units are still in the status of "conditional approved" because they have not met some of the requirements, while 4,803 units have met all requirements and 118 units have not met all requirements. This indicates that there are obstacles in the implementation of the system, such as a lack of understanding of STID and inadequate preparation from trucking companies. To overcome this, technical guidance and socialization related to the use of the STID system are needed to truck drivers and freight transportation companies (Djari & Adilano, 2023)

The STID system, which uses RFID technology or electronic cards, has several important functions, namely as the identity of the truck at the port and the means of payment for the port pass. The system is also designed to provide an integrated database that makes it easier to identify entities at the port, monitor revenue from vehicle passes, and support the application of new technologies such as the Auto Gate System to manage truck entry and exit schedules more efficiently and flexibly. It also reduces bureaucracy and minimizes corruption, controls traffic at the terminal and maintains a smooth container loading and unloading process.

Research on the quality of STID services at Tanjung Perak Port is still limited, so there is a knowledge gap on how customers rate these services and the extent to which these systems meet their expectations. Therefore, this study aims to measure the relationship between STID service quality and customer satisfaction at Tanjung Perak Port. The results of this study are expected to provide strategic recommendations to improve service quality, support the development of STID systems, and improve port operational efficiency. Based on the above background description, the author will research about "Measuring the Quality of Service for Making *Single Truck Identification Data* (STID) on Service User Satisfaction at the Port of Tanjung Perak Surabaya".

# METHOD

This study uses a quantitative method, which involves collecting and analyzing data systematically to test the hypothesis that has been determined. Based on Sugiyono (2015), the quantitative method is based on the philosophy of positivism and is used to research a specific sample with statistical data analysis. Quantitative research allows for generalization of results to a wider population because samples are usually taken at random.

In this study, the independent variable used was Quality of Service (X), which was measured through a questionnaire given to respondents. Service quality is defined as the customer's perception of the performance of the services provided. Meanwhile, the bound variable is Service User Satisfaction, which is interpreted as a comparison between the perceived quality of service and customer expectations

# RESULTS AND DISCUSSION

**Research Results**

**Validity Test**

 To determine the validity of the variables of service quality and service user satisfaction, a significance level criterion of 5% (α = 0.05) was used. With a sample of 30, the table r value of 0.361 was obtained. A variable is considered valid if the value r of the calculation is greater than the r of the table (r count > r of the table). The following are the results of the validity test for the variables of Service Quality (X) and Service User Satisfaction (Y):

Table 1. Validity Test Results

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Items | r count | r Table  | Conclusion |
| Quality of Service (X)  | X1 | .701\*\* | 0,361 | Valid |
| X2 | .767\*\* | 0,361 | Valid |
| X3 | .521\*\* | 0,361 | Valid |
| X4 | .604\*\* | 0,361 | Valid |
| X5 | .713\*\* | 0,361 | Valid |
| X6 | .733\*\* | 0,361 | Valid |
| X7 | .487\*\* | 0,361 | Valid |
| X8 | .694\*\* | 0,361 | Valid |
| X9 | .675\*\* | 0,361 | Valid |
| X10 | .817\*\* | 0,361 | Valid |
| X11 | .591\*\* | 0,361 | Valid |
| X12 | .693\*\* | 0,361 | Valid |
| X13 | .723\*\* | 0,361 | Valid |
| X14 | .775\*\* | 0,361 | Valid |
| X15 | .891\*\* | 0,361 | Valid |
| X16 | .619\*\* | 0,361 | Valid |
| X17 | .877\*\* | 0,361 | Valid |
| X18 | .658\*\* | 0,361 | Valid |
| Service User Satisfaction (Y) | Y1 | .653\*\* | 0,361 | Valid |
| Y2 | .674\*\* | 0,361 | Valid |
| Y3 | .559\*\* | 0,361 | Valid |
| Y4 | .713\*\* | 0,361 | Valid |
| Y5 | .640\*\* | 0,361 | Valid |
| Y6 | .827\*\* | 0,361 | Valid |
| Y7 | .576\*\* | 0,361 | Valid |
| Y8 | .665\*\* | 0,361 | Valid |
| Y9 | .821\*\* | 0,361 | Valid |
| Y10 | .766\*\* | 0,361 | Valid |

Source: Data Processed by Researchers

 Based on Table 1, the validity test results show that all statements in the questionnaire are valid because the r-calculated value is greater than the r-table. Thus, the entire question can be used as a basis for further analysis in this study.

**Reliability Test**

The reliability of a variable is determined by comparing Cronbach's Alpha value with a threshold value of 0.6. If Cronbach's Alpha value exceeds 0.6, then the variable is considered reliable and reliable for further analysis.

Table 2**.** Reliability Test Results

|  |  |  |
| --- | --- | --- |
| Variable | Cronbach's Alpha | Conclusion |
| Quality of Service (X) | 0,938 | Reliable |
| Service User Satisfaction (Y) | 0,874 | Reliable |

Source : Data Processed by Researchers

 The results of the reliability analysis showed that all variables had a Cronbach's Alpha value above 0.6, which means that all variables in the questionnaire were declared reliable and reliable as a measuring tool in this study.

**Normality Test**

The normality test aims to find out whether the data is distributed normally. Good data is data that has a pattern like normal distribution. In this study, the normality test analyzes the significance value with the test criterion if the significance value > 0.05, then the regression model meets the normality assumption.

Table 3. Normality Test Results

|  |
| --- |
| **One-Sample Kolmogorov-Smirnov Test** |
| N | 30 |
| Kolmogorov-Smirnov Z | .414 |
| Asymp. Sig. (2-tailed) | .995 |

Source : Data Processed by Researchers

 The results of normality analysis using the Kolmogrov-Smirnov Test showed a significance value of 0.995 which was greater than the alpha of 0.05. With the above significance values, it can be concluded that the regression model is normally distributed.

**Simple Linear Regression Analysis**

 To test the research hypothesis, a simple linear regression model is used. This is because in this study the researcher wanted to examine the influence of one independent variable on one bound variable. The following are the results of a simple linear regression analysis:

**Table 4.** Results of Simple Linear Regression Analysis

|  |
| --- |
| **Coefficient** |
| Type | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 5.281 | 2.448 |   | 2.157 | .040 |
| Quality of Service | .484 | .035 | .934 | 13.809 | .000 |

Source : Data Processed by Researchers

 Based on the table of results of the simple linear regression test above, a linear regression equation can be made as follows:

Y = 5.281 + 0.484 X

 The results of the calculation that have been carried out produce an equation which is interpreted as follows:

1. The value of the customer is 5.281, which means that if the variable is free of service quality (X) in a constant state or (0), then the customer satisfaction value (Y) is 5.281.
2. The service quality regression coefficient of 0.484 means that for every increase in one service quality variable (X), the value of the customer satisfaction variable (Y) will increase by 0.484

 From the above statement, it can be concluded that there is a positive relationship between the quality of STID use services and User Satisfaction. In other words, the better the implementation and service of the STID system, the higher the level of satisfaction felt by service users at Tanjung Perak Port.

**T Test**

 The purpose of the T test is to find out whether the independent variable (X) partially affects the dependent variable (Y), provided that the significance level is < α (0.05). The following is a table of the results of the t-test:

Table 5. T Test Results

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| --- |
| **Coefficient** |
| Type | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 5.281 | 2.448 |   | 2.157 | .040 |
| Quality of Service | .484 | .035 | .934 | 13.809 | .000 |

Source : Data Processed by Researchers

 Based on the results of the T Test above, it can be known that the significance value is 0.000. The decision-making provisions for a hypothesis to be accepted or rejected based on the magnitude of the significance value. If the significance is less than or equal to 0.05 then the hypothesis is accepted. The results of the study obtained a significance value of 0.000 < 0.050. The number 0.05 is set as the standard threshold to determine whether the results of a statistical test are significant or not. Therefore, it can be concluded that Ha, which states that there is an influence of service quality (X) on customer satisfaction (Y), is accepted.

**Coefficient Determination Test**

 The determinant coefficient (R) is a coefficient that indicates how large the percentage of independent variables is. The results of this Coefficient of Determination test can be seen in the Adjusted R Square section of the Summary model table. The following are the results of the Coefficient of Determination in this study:

Table 6. Determination Coefficient Test Results

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| --- |
| **Model Summary** |
| Type | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .934a | .872 | .867 | 2.178 |

Source : Data Processed by Researchers

 Based on table 6 above, it can be seen that the correlation coefficient (R) is 0.934 which means that there is a significant relationship between the independent variable and the dependent variable because the value of R is close to 1. This shows that the greater the value of X, the greater the value of Y. The value of R² is 0.872 which means that 87.2% of customer satisfaction is influenced by service quality variables. The remaining 12.8% was influenced by other variables that had not been studied in this study.

**Discussion**

 Based on the results of research conducted on service users at the Tanjung Perak Main Port, it was found that the quality of service *Single Truck Identification Data* (STID) has a significant effect on the level of satisfaction of service users. This is shown through simple linear regression analysis with a significance value of 0.000 < 0.05, which means that the alternative hypothesis (Ha) is accepted and there is a positive and significant influence between the quality of service on user satisfaction. The regression coefficient of 0.484 shows that every one unit increase in STID service quality will increase user satisfaction by 0.484 units. Meanwhile, a constant value of 5.281 indicates that when there is no improvement in service quality, the base value of user satisfaction remains at a fairly high level. This reinforces that the service quality factor plays an important role in influencing satisfaction.

 The value of the determination coefficient (R²) of 0.872 shows that 87.2% of the service user satisfaction variable can be explained by the service quality variable, while the remaining 12.8% is influenced by other factors that have not been studied, such as service prices, external logistics systems, or other external factors. The results of the descriptive analysis of the respondents' answers stated that, where most of the service quality indicators received a mean score above 3.5 with the highest statement being that communication with STID officers ran clearly and smoothly, this was shown by an average score of 4.26. And the level of accuracy of the STID system in identifying satisfactory and well-integrated trucks is shown with a mean score of 4.43. This shows that service users assess the quality of STID services quite high, especially in terms of communication clarity and system accuracy.

 However, there are also several aspects that need further attention, such as the STID identification process completed within a reasonable time which obtained a mean score of 3.37 which shows that some respondents feel that the STID identification process is still not optimal. In addition, technical obstacles and understanding of the use of STID systems are still obstacles that need to be fixed. Overall, this study proves that the implementation of STID at Tanjung Perak Port has had a positive impact on service user satisfaction, but improvements in terms of process time and user education are still needed to achieve optimal service quality.

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# CONCLUSION

Based on the results of the research conducted on the effect of the quality of service quality using Single Truck Identification Data (STID) on the satisfaction of service users at the Main Port of Tanjung Perak Surabaya, an important conclusion was obtained, namely that the quality of STID services has a significant influence on the level of satisfaction of service users. The results of the simple linear regression test showed a significance value of 0.000 (< 0.05) with a determination coefficient (R²) of 0.872, which means that 87.2% of service user satisfaction can be influenced by the quality of STID services, while the rest is influenced by other factors that were not studied in this study. This can be aimed at the aspect of communication between officers and service users obtaining the highest scores, which shows that users really appreciate the openness and clarity of the information provided. In addition, the accuracy level of the STID system shows that the system is quite reliable in detecting vehicle identity.

Although the implementation of STID is considered good, there is still room for improvement, especially in terms of speed of service and education to users. Overall, it can be concluded that the STID system has made a positive contribution to the smooth running of services at the port and the satisfaction of service users.

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