The Effect of Logistics Process Quality And Logistics Outcome Quality in Logistic Letter and Package Services to Customer Satisfaction

(Case study at PT. Pos Indonesia (Persero) Palembang Post Office 30000)

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Abstract - This research aimed to find out the effect of logistics outcome quality and logistics process quality to customer satisfaction in palembang post office. The dimensions used for the logistics process quality variable are (procedure, contact quality personnel, information quality, and order discrepancy handling) while the dimensions used for logistics outcome quality variables are product availability, accuracy & condition order, and timeliness. The sample in this study is 100 respondents with the sampling technique using the census method. The data analysis used in this study is multiple linear regression analysis using the SPSS 15.0 program. The results of this study indicate that logistics outcome quality and logistics process quality have a positive and significant influence to customer satisfaction.

Index Terms - Customer Satisfaction, Logistics Outcome Quality, Logistics Process Quality, Post Office.

I. INTRODUCTION

The Indonesian Logistics Association (ALI) in 2018 estimates the growth of the logistics market in Indonesia in 2019 to be in the range of 10-12 percent, as well as from Data Fost & Sullivan in 2018 estimated that the Indonesian logistics industry will grow 15.4 percent with a value of Rp. 4396 trillion in 2020. This significant growth is driven by consumption of the population, improvement in infrastructure and foreign investment.

Consumer satisfaction is a basic concept in marketing and business strategies [9]. Consumer satisfaction consists of feelings of pleasure or disappointment resulting from comparisons between buyer expectations and perceptions of performance (or results) of a product [28]. Consumer satisfaction arises when companies manage to provide logistics services that meet or exceed consumer expectations [40]. Quality of logistics services (Logistics Services Quality) can affect customer satisfaction [33].

Logistics Service Quality has two concepts, Logistics Outcome Quality (LOQ), which refers to the determination of the extent to which the promised core benefits or results are delivered, and Logistics Process Quality (LPQ) that addresses the service delivery process [33]. the separation of dimensions of LOQ and LPQ service quality in a comprehensive model is an important step in our understanding of how Consumer Perceptions of quality services are formed. The dimensions of Logistics Process Quality (LPQ) are Ordering Procedures, Contact Quality Personnel, Information Quality, and Order Discrepancy Handling. The dimensions of Logistics Outcome Quality (LOQ) are Product Availability, Accuracy, Condition Order, and Timeliness.

Research Problem
- Does Logistics Process Quality and Logistics Outcome Quality effect Customer Satisfaction In Palembang Post Office?

II. LITERATURE REVIEW

A. Consumer Satisfaction

Consumer satisfaction is an emotional response to experience related to the product or service purchased. As for the factors that influence consumer perceptions and expectations, among others, needs and desires related to the things that consumers feel when trying to make transactions with product manufacturers, and past experience when consuming products from companies and competitors, and experience from friends [47].

B. Logistics Service Quality

Research by Millen et al. (1999) identified a significant increase in customer satisfaction as a key benefit of Logistics Service Quality (LSQ). Logistics Service Quality is a scale used to measure logistics service quality [47]. Logistics Service Quality has two concepts, Logistics Outcome Quality (LOQ), which refers to the determination of the extent to which the promised core benefits or results are delivered and the Logistics Process Quality (LPQ) that addresses the service delivery process. The separation of dimensions of LOQ and LPQ service quality in a comprehensive model is an important step in our
understanding of how consumer perceptions of quality services are formed. The dimensions of Logistics Process Quality (LPQ) are Ordering Procedures, Contact Quality Personnel, Information Quality, and Order Discrepancy Handling. The dimensions of Logistics Outcome Quality (LOQ) are Product Availability, Order Accuracy, Timeliness, and Order Condition.

C. Logistics Process Quality

The dimensions of Logistics Process Quality (LPQ) are four sub-dimensions, namely Ordering Procedure, Contact Quality Personnel, Information Quality, and Order Discrepancy Handling [5]. Ordering procedures discuss the efficiency and effectiveness of the procedures made by the company. It is important for companies to make order placement procedures to be effective and easy to use by consumers [43]. Personnel Contact Quality, refers to the consumer orientation of contact people from the company's logistics department. Specifically, consumers see about whether customer service staff are knowledgeable, empathize with the consumer situation, and help consumers solve their problems [43]. Information Quality, The ability of courier providers to enter relevant product and service information. It is important to attract consumers to pay attention to the special services and promotions provided to meet their needs [43]. Order Discrepancy Handling, refers to how well the company handles mismatches in orders that occur after orders arrive at consumers [43].

D. Logistics Outcome Quality

The dimensions of Logistics Outcome Quality (LOQ) are Product Availability, Order Accuracy, and Timeliness [5]. Product Availability, Refers to customer ability to choose products that are with the conditions of the package [39]. Order Accuracy, refers to the truth of service information and the accuracy of delivery to consumers [46]. Timeliness, refers to arrived time package to receiver location by the promised time. Timeliness also refers to the time needed between order placement and acceptance by consumers [43]. Order Condition, refers to damage condition that can occur while deliver to receiver. If the goods are damaged, consumers cannot use them and must wait for compensation from the company or they could use other service [43].

III. RESEARCH FRAMEWORK

Based on the above explanation, the theoretical framework is as follows:

IV. METHODOLOGY

This study intends to measure the relationship between research variables. This study is useful for modeling and measuring the relationships between research variables or useful for analyzing and seeing the effect of independent variables (X) on the dependent variable (Y). The design of this study is as follows:

1. Variable X (Free Variable), namely Logistics Process Quality and Logistics Outcome Quality
2. Variable Y (Bound Variables), namely Customer Satisfaction

In this study, respondents in this study were all customers Palembang post office 30000 with 100 samples customers. the research use Multiple Linear Regression as a research hypothesis testing technique to look for the model regression. On this research, the calculations were assisted by SPSS for Windows Version 15 software [8].

V. RESULT AND DISCUSSION

A. Validity Test Results

Intrument (Questionnaire Question) are called valid if there is significant correlation with the total score. In this research validity is tested using the Pearson Correlation method. The value of r table by significance level 0.01, two-way test, by N = 30 is 0.30. If the value of $r \geq 0.30$ then the statement items in questionnaire are valid. If the value of $r \leq 0.30$ then the statement items in questionnaire are invalid. The test results show that all indicators used to measure the variables in this research have $r$ value greater than the $r$ table value. This means all indicators are valid as research instruments.

B. Reliability Test Result

The Cronbach Alpha method is used to test the reliability of the instrument. Instruments are considered to have a high level of reliability if the value obtained is $\geq 0.60$. The table below is the result of reliability testing:
Table-1: Reliability Test Result

<table>
<thead>
<tr>
<th>No.</th>
<th>Variabel</th>
<th>Cronbach Alpha</th>
<th>Parameter</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Logistics Process Quality (X₁)</td>
<td>0,899</td>
<td>0,6</td>
<td>Reliabel</td>
</tr>
<tr>
<td>2</td>
<td>Logistics Outcome Quality (X₂)</td>
<td>0,847</td>
<td>0,6</td>
<td>Reliabel</td>
</tr>
<tr>
<td>3</td>
<td>Customer Statisfation (Y)</td>
<td>0,911</td>
<td>0,6</td>
<td>Reliabel</td>
</tr>
</tbody>
</table>

Source: SPSS version 15 output processed, 2019

Table-1 above shows the Cronbach Alpha values for each statement is greater than 0.6, which means each indicator variable is reliable.

Demographic Variables

Through table-2, the number of respondents who filled out the questionnaire in this research were 100 consumer, consist of 65 male customer (65%), and 35 female customer (35%).

Table-2: Identity Distribution of Respondents

<table>
<thead>
<tr>
<th>No.</th>
<th>Karakteristik</th>
<th>Jumlah</th>
<th>Persentase</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Laki-laki</td>
<td>65</td>
<td>65,00%</td>
</tr>
<tr>
<td>2</td>
<td>Perempuan</td>
<td>35</td>
<td>35,00%</td>
</tr>
<tr>
<td>B.</td>
<td>Customers Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>17 – 20 Years</td>
<td>6</td>
<td>6,00%</td>
</tr>
<tr>
<td>2</td>
<td>21 – 30 Years</td>
<td>24</td>
<td>24,00%</td>
</tr>
<tr>
<td>3</td>
<td>31 – 40 Years</td>
<td>33</td>
<td>33,00%</td>
</tr>
<tr>
<td>4</td>
<td>41 – 50 Years</td>
<td>27</td>
<td>27,00%</td>
</tr>
<tr>
<td>5</td>
<td>≥ 51 Years</td>
<td>10</td>
<td>10,00%</td>
</tr>
<tr>
<td>C.</td>
<td>Last Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Elementary School</td>
<td>9</td>
<td>9,00%</td>
</tr>
<tr>
<td>2</td>
<td>Junior High School</td>
<td>25</td>
<td>25,00%</td>
</tr>
<tr>
<td>3</td>
<td>Senior High School</td>
<td>32</td>
<td>32,00%</td>
</tr>
<tr>
<td>4</td>
<td>Diploma</td>
<td>20</td>
<td>20,00%</td>
</tr>
<tr>
<td>5</td>
<td>Bachelor</td>
<td>14</td>
<td>14,00%</td>
</tr>
<tr>
<td>D.</td>
<td>Customer Jobs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Student / College Student</td>
<td>11</td>
<td>11,00%</td>
</tr>
<tr>
<td>2</td>
<td>Government employees</td>
<td>24</td>
<td>24,00%</td>
</tr>
<tr>
<td>3</td>
<td>Private Employees</td>
<td>31</td>
<td>31,00%</td>
</tr>
<tr>
<td>4</td>
<td>Entrepreneur</td>
<td>24</td>
<td>24,00%</td>
</tr>
<tr>
<td>5</td>
<td>House wife</td>
<td>10</td>
<td>10,00%</td>
</tr>
<tr>
<td>E.</td>
<td>Products Used</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Pos Internasional</td>
<td>26</td>
<td>26,00%</td>
</tr>
<tr>
<td>2</td>
<td>Pos Express</td>
<td>25</td>
<td>25,00%</td>
</tr>
<tr>
<td>3</td>
<td>Paket Kilat Khusus</td>
<td>35</td>
<td>35,00%</td>
</tr>
<tr>
<td>4</td>
<td>Paket Pos Biasa</td>
<td>14</td>
<td>14,00%</td>
</tr>
</tbody>
</table>

Based on age, the customers is dominated by customer aged 31-40 years with 33 people (33%). Based on education level, respondents is dominated high schoolar graduated with 32 people (32%), followed by junior high scoolar graduated with 25 people (25%). Then, the previous work was dominated by private companies with 31 people (31%). Logistics Product dominated by Paket Kilat Khusus product with 35 people (35%) the highest than other product. Based on how often customers use post office service per month, 51 people (51%) used this service 3 times per month.

C. Multiple Regressions Analysis

Before the test was carried out, the researchers conducted normality, multicollinearity, and heteroscedasticity tests to ensure that the regression equation had accuracy in estimation, unbiased and consistent. The test results show that the regression model was feasible because it met the assumptions of normality, there was no multicollinearity, and there was no problem of heteroscedasticity in the regression model. Following tables are the results of multiple regression analysis by SPSS version 15 for Windows:

The Proposed Hypothesis

1. Logistics Process Quality (LPQ) has a significant positive effect on Customer Satisfaction at the Pelembang Post Office.
2. Logistics Outcome Quality (LOQ) has a significant positive effect on Customer Satisfaction at the Pelembang Post Office.
3. Logistics Process Quality (LPQ) and Logistics Outcome Quality (LOQ) simultaneously have a significant positive effect on Customer Satisfaction at the Pelembang Post Office.

Table-3: The Results of Multiple Linear Regression Analysis

<table>
<thead>
<tr>
<th>Variabel</th>
<th>(B)</th>
<th>Std Error</th>
<th>Beta</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>8,617</td>
<td>5,793</td>
<td>0,140</td>
<td></td>
</tr>
<tr>
<td>Logistics Process Quality</td>
<td>0,123</td>
<td>0,047</td>
<td>0,196</td>
<td>0,011</td>
</tr>
<tr>
<td>Logistics Outcome Quality</td>
<td>0,518</td>
<td>0,055</td>
<td>0,703</td>
<td>0,900</td>
</tr>
</tbody>
</table>

Based on the data analysis, the regression equation is obtained:

\[ Y = 8,617 + 0,123 (X₁) + 0,518 (X₂) \]
The above equation can be explained by below:
1. Logistics Process Quality variables have a positive effect on the Consumer Satisfaction variable.
2. Logistics Outcome Quality variable has a positive effect on the Consumer Satisfaction variable.

Table-3 also contains the value of t which can be a reference to whether the Logistics Process Quality and Logistics Outcome variables effect the Consumer Satisfaction.

D. Determination Test (R²)

Determination test in multiple linear regression is used to determine the percentage contribution of the influence of independent variables simultaneously on the dependent variable. This coefficient shows how much the percentage variation of the independent variables used in the model is able to explain the variation of the dependent variable. Based on the results of calculations with SPSS for Windows version 15.00, the results of the determination test are obtained as follows:

**Table-4: The Results of Determination Test (R²)**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>0.689</td>
<td>0.475</td>
<td>0.464</td>
<td>2.917</td>
<td>2.473</td>
</tr>
</tbody>
</table>

Source: SPSS version 15 output processed, 2019

Based on Table-4 above, the coefficient of determination has a value of 0.475 (47.5%). This can state that the Logistics Process Quality and Logistics Outcome variables can explain the Consumer Satisfaction variable by 47.5%, while the remaining 52.5% is influenced by other independent variables other than the variables in this study.

E. Model Test (F Test)

The results of this test are to find out whether the regression model can be used to predict the dependent variable or not, in addition to knowing whether the independent variables together have a significant effect on the dependent variable. Significant means that the relationship that occurs can apply to the population (can be generalized).

**Table-5: The Results of F Test**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>747,232</td>
<td>2</td>
<td>373,616</td>
<td>43.906</td>
<td>0.000*</td>
</tr>
<tr>
<td>Residual</td>
<td>825,424</td>
<td>97</td>
<td>8,510</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1572,656</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SPSS version 15 output processed, 2019

Regression Parameter Coefficient Test

This test is to test whether the parameters (regression coefficients and constants) to estimate the equation / multiple linear regression models are already the right parameters or not. The right intention here is that these parameters are able to explain free behavior in influencing the dependent variable. In this section, the t test is focused on the regression coefficient. The t test is known as a partial test, which is to test how the influence of each independent variable individually on the dependent variable. This test can be done by comparing t count with t table or by looking at the column of significance in each t count

This study was conducted with a significance of 0.05 (α = 5%) as shown in Table-6 below.

**Table-6: The Results of t Test**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>8,617</td>
<td>5,793</td>
<td>1,488</td>
<td>0,140</td>
</tr>
<tr>
<td>Logistics Process Quality</td>
<td>0,123</td>
<td>0,047</td>
<td>0,196</td>
<td>2,603</td>
</tr>
<tr>
<td>Logistics Outcome Quality</td>
<td>0,518</td>
<td>0,055</td>
<td>0,703</td>
<td>9,346</td>
</tr>
</tbody>
</table>

Source: SPSS version 15 output processed, 2019

VI. CONCLUSION AND RECOMMENDATION

Conclusion

Based on the research problem formulation proposed, then referring to the data analysis model that has been done, and various discussions that have been put forward in the previous chapter, we can draw some conclusion as follow:

1. Descriptively it is found that the indicator of shipping costs when the order process gets the value of satisfaction under other indicators.
2. Logistics Process Quality has a positive and significant effect on the Customer Satisfaction variable at PT. Pos Indonesia (Persero) Palembang Post Office 30000.
3. Variable Logistics Outcome Quality has a positive and significant effect on the Customer Satisfaction variable at PT. Pos Indonesia (Persero) Palembang Post Office 30000.
4. Logistics Process Quality and Logistics Outcome Quality simultaneously have a positive and significant effect on Customer Satisfaction PT. Pos Indonesia (Persero) Palembang Post office 30000.

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Recommendation

Based on the results of research, discussion and conclusions, the suggestions that can be given are as follows.

PT. Pos Indonesia (Persero) Palembang Post Office 30000

Logistics Process Quality and Logistics Outcome Quality is a quality that must always be applied and maintained in Companies. On the point of question the cost of order indicator gets quite good respond. Therefore, PT. Pos Indonesia (persero) Palembang Post Office 30000 is recommended to provide competitive prices with competitors by recalculating the prevailing prices with the highest frequency of delivery to the destination, so that for this purpose prices can be lowered by comparing freight rates compared to per kilogram.

Further research

For the next researcher, it is expected to add other research variables and indicators, so that they can answer in more detail in explaining the research on customer satisfaction.

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