Study of Customer Satisfaction on Construction Company Performance in the Scope of Public Works Office in Ternate City

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Abstract. The construction business world is a world of competition, whose intensity is getting tougher from day to day. One of the factors causing low loyalty is the lack of customer satisfaction with products and services so far. This study aims to determine what factors influence satisfaction (Owner) of the performance of construction companies (Contractors) that are within the scope of the Ternate City Public Works Department. Based on the analysis of the Weigh Mean Method used to measure the performance of contractor companies in Ternate City. The results of the analysis at the level of satisfaction with the highest mean value is 3.5641, namely (K3 and K11), namely the Quality of the Bag in Accordance with Technical Specification and the Conformity of the Project Report to Actual Conditions in the Field.

Keywords: performance, contracting companies and public works.

1. Introduction
The construction business world is a world of competition, the intensity of which is getting tighter or sharper day by day. To excel in competing, each construction company is required to be able to show their respective competitive advantages through creative, innovative, working effectively and efficient efforts, so that the products or services produced become the customer's choice, which in turn the customer is expected to become loyals. The development is inseparable from the large role of the construction industry which involves many parties to cooperate with one another to form a good construction organization. With so many construction companies, of course the performance of these companies is different from one another. In connection with this, the authors are interested to make a research about "Study of Customer Satisfaction of Construction Company Performance in the Scope of Public Works Office in Ternate City".

2. Fundamental Theory
2.1. The performance
Performance comes from the word job performance or actual performance which means work performance or actual achievement achieved by someone[1]. Parameters that are often used to assess the performance of a company are carried out using an approach where information is taken from reports or other reports.
2.2. Performance Measurement
Performance measurement is the process by which the organization sets the outcome parameters to be achieved by the program, investment, and acquisition carried out. The process of measuring performance often requires the use of statistical evidence to determine the level of progress of an organization's level in achieving its goals.

2.3 Performance Factors
The factors that affect performance are as follows:

- Individual factors (personal factors) individual factors related to expertise, motivation, commitment and others.
- Leadership factors (leadership factors) leadership factors related to the quality of support and direction given by the leader manager.
- Group or coworkers factors (team factors) Group or coworkers factors relate to the quality of support provided by coworkers.

2.4 Customer Satisfaction
The word satisfaction comes from the Latin satis (means good enough, adequate) and facio (do or make). Satisfaction can be interpreted as an effort to do or make something quite good / adequate[2]. Quality products or services have an important role to form customer satisfaction is getting quality products and services rendered, then the satisfaction felt by the customers are getting high[3].

2.5 Measurement of customer satisfaction
Some methods of measuring customer satisfaction are as follows:
- Complaints and suggestions system
- Customer satisfaction survey
- Ghost shopping
- Lost customer analysis

2.6 Consultant Planner and supervisor
Consultant planner is a person / body that makes a complete building planning both in the fields of architecture, civil and other fields that are closely attached to form a building system. Supervisory consultant is a person / body appointed by the service user to assist in managing the implementation of development work from the beginning to the end of the work[4].

2.7 Weight Mean Method
Mean is a group explanatory technique that is based on the average value of the group. The mean (mean) is obtained by adding up the data of all individuals in the group, then divided by the number of individuals in the group.

2.8 Internal Class Modifications
Modified interval class

\[
\begin{array}{c|c|c|c}
\text{High Value} & \text{Low Value} & \text{The number of class} \\
\hline
5\% & 1\% & 0.80\% \\
\end{array}
\]

Modify class intervals \( \frac{5\%-1\%}{5} = 0.80\% \) (2)

The categories of performance satisfaction for each item are[5]:

3. Methodology of Research

3.1. Population and Research Samples
The population of this study is construction customers, namely the users of contractor services at the Ternate City Public Works Department. Of the total population there were 39 respondents including 1 Project Manager, 1 Site Manager, 28 Field Supervisors and 9 Others.

3.2. Data Analysis Techniques

- Validity test

\[
r = \frac{\text{N} \varepsilon_{xy} - (\varepsilon_{x})(\varepsilon_{y})}{\sqrt{\text{N} \varepsilon_{x}^{2} - (\varepsilon_{x})^{2}} \sqrt{\text{N} \varepsilon_{y}^{2} - (\varepsilon_{y})^{2}}}
\]

- Reliability test

\[
r' = \frac{2\varepsilon_{b}}{1 + \varepsilon_{b}}
\]

- Weight Mean Method

\[
\text{Me} = \frac{\sum \text{x} \text{i}}{n}
\]

4. Results and discussions

| NO | Category                                                                 | r Calculate | r Table | Conclusion |
|----|--------------------------------------------------------------------------|-------------|---------|------------|
| 1  | Fulfillment of building functions                                       | 0.551       | 0.325   | valid      |
| 2  | The scope of work is in accordance with the contract documents          | 0.655       | 0.325   | valid      |
| 3  | Building quality according to technical specifications                  | 0.357       | 0.325   | valid      |
| 4  | Niceness (Aesthetics) results of the end of the building                | 0.547       | 0.325   | valid      |
| 5  | Realistic Work Plans (Scheduling)                                       | 0.841       | 0.325   | valid      |
| 6  | Provision of Project Completion Time                                    | 0.577       | 0.325   | valid      |
| 7  | Routine and Orderly in Administration                                   | 0.786       | 0.325   | valid      |
| 8  | Ease of Services Provided (Cooperative)                                 | 0.760       | 0.325   | valid      |
| 9  | Handling Problems / Disorders (Cost, Quality, Time, Conflict, And So On At Work) | 0.760       | 0.325   | valid      |
| 10 | Shop Drawing Submitted Before Construction Implementation               | 0.643       | 0.325   | valid      |
| 11 | Conformity of Project Reports with Actual Conditions in the Field       | 0.540       | 0.325   | valid      |
| 12 | Provisions in Choosing Suppliers and Subcontractors                      | 0.675       | 0.325   | valid      |
| 13 | Speed Handling Problems (Cost, Quality, Time, Conflict, Etc.) That Occur In The Field | 0.776       | 0.325   | valid      |
| 14 | Speed in Responding to Project Owner Requests                           | 0.766       | 0.325   | valid      |
| 15 | Occupational Safety and Health (K3) System During Construction           | 0.791       | 0.325   | valid      |
The Rtable value was sought at significant 0.05 (5%). With the provision df = N-2. Then obtained N = 39-2 = 37 so that the rtable value obtained is 0.325. The calculated value of each question item, there are invalid questionnaire and there are valid. From this validity test also explained that from the research conducted on 39 respondents all declared valid. This can be seen from the validity testing data obtained.

| NO | Category                                                                 | r Calculate | r Table | Conclusion |
|----|--------------------------------------------------------------------------|-------------|---------|------------|
| 16 | The Project Manager’s Ability to Communicate Both Verbally and Writing   | 0.750       | 0.325   | valid      |
| 17 | Inform the Possible Risks During Construction                           | 0.657       | 0.325   | valid      |
| 18 | Integrated Communication Between Contractors, Subcontractors And Suppliers.| 0.593       | 0.325   | valid      |
| 19 | Security Handling / Socialization in Project Environment                | 0.604       | 0.325   | valid      |
| 20 | Lack of Rework (Repair / Rework) During Project Implementation           | 0.615       | 0.325   | valid      |
| 21 | Complete Project Processing Organization Structure                       | 0.606       | 0.325   | valid      |
| 22 | Competent / Quality Human Resources                                     | 0.836       | 0.325   | valid      |
| 23 | Paying Attention to Environmental Problems in the Construction Process  | 0.811       | 0.325   | valid      |
| 24 | Provision of Construction Work Methods Used                             | 0.770       | 0.325   | valid      |
| 25 | Cleanliness on the Field During the Construction Period                 | 0.789       | 0.325   | valid      |
| 26 | Project Supervision And Control Is Done Regularly                       | 0.619       | 0.325   | valid      |

Source: Calculation Results

Table 2. Reliability test results
From the results obtained from the reliability test explained that all items of questions or categories are reliable, the test can be seen in the table above, because the calculated value is also greater than the value of the table. This proves the question is quite clear and can be understood by respondents.

**Table 3.** Conclusion of company (contractor) performance of the City of Ternate Public Works Office

| NO | Category                                                                 | Average Value (Mean) | Conclusion      |
|----|--------------------------------------------------------------------------|----------------------|-----------------|
| 1  | Fulfillment of building functions                                       | 3.4872               | Satisfied       |
| 2  | The scope of work is in accordance with the contract documents          | 3.4872               | Satisfied       |
| 3  | Building quality according to technical specifications                  | 3.5641               | Satisfied       |
| 4  | Niceness (Aesthetics) the final result of the building                  | 3.3590               | Satisfied       |
| 5  | Realistic Work Plans (Scheduling)                                       | 3.3846               | Quite satisfied |
| 6  | Provision of Project Completion Time                                     | 3.5385               | Satisfied       |
| 7  | Routine and Orderly in Administration                                    | 3.2821               | Quite satisfied |
| 8  | Ease of Services Provided (Cooperative)                                  | 3.3846               | Quite satisfied |
| 9  | Handling Problems / Disorders (Cost, Quality, Time, Conflict, And So On At Work) | 3.3077               | Quite satisfied |
| 10 | Shop Drawing Submitted Before Construction Implementation                | 3.4103               | Satisfied       |
| 11 | Conformity of Project Reports with Actual Conditions in the Field       | 3.5641               | Satisfied       |
| 12 | Provisions in Choosing Suppliers and Subcontractors                      | 3.1795               | Quite satisfied |
| 13 | Speed Handling Problems (Cost, Quality, Time, Conflict, Etc.) That Occur In The Field | 3.4359               | Satisfied       |
| 14 | Speed in Responding to Project Owner Requests                            | 3.3077               | Quite satisfied |
| 15 | Occupational Safety and Health (K3) System During Construction           | 3.1795               | Quite satisfied |
| 16 | The Project Manager's Ability to Communicate Both Verbally and Writing   | 3.5128               | Satisfied       |
| 17 | Inform the Possible Risks During Construction                           | 3.4103               | Satisfied       |
| 18 | Integrated Communication Between Contractors , Subcontractors And Suppliers. | 3.3590               | Quite satisfied |
| 19 | Security Handling / Socialization in Project Environment                 | 3.3590               | Quite satisfied |
| 20 | Lack of Rework (Repair / Rework) During Project Implementation           | 3.3590               | Quite satisfied |
| 21 | Complete Project Processing Organization Structure                       | 3.4359               | Satisfied       |
| 22 | Competent / Quality Human Resources                                     | 3.3846               | Quite satisfied |
| 23 | Paying Attention to Environmental Problems in the Construction Process   | 3.3333               | Quite satisfied |
| 24 | Provision of Construction Work Methods Used                              | 3.4103               | Satisfied       |
| 25 | Cleanliness on the Field During the Construction Period                  | 3.2308               | Quite satisfied |
| 26 | Project Supervision And Control Is Done Regularly                        | 3.5385               | Satisfied       |

Source: Calculation Results

From the table above shows that the performance of the construction company (contractor) of the City of Ternate Public Works Department is at a level with an average value (mean) between 3.1795 in categories 12 and 15, up to 3.5641 in categories 3 and 11, which means that according to respondents the performance of construction companies is at the level of being quite satisfied until satisfied when doing a project.
5. Conclusions
The results of this study indicate that the performance of construction companies in the Department of Public Works in the city of Ternate is at the level of quite satisfied and satisfied with an average value (mean) of 3, 1795 to 3.5641. The category that obtained the highest average (mean) is category 3 "Quality of buildings according to technical specifications" with an average value (mean) of 3.5641 and category 11 "Conformity of Project Reports with Actual Conditions in the Field" with an average value (mean) 3.5641.

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