Analysis of management performance index and user satisfaction index in Kutaraja Fishing Port, Banda Aceh, Indonesia

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Abstract. The problems faced by managers and being felt by fishing port users today are the problem of environmental cleanliness and the lack of fishin port management efforts in serving fishermen's needs, this is due to the government's lack of attention in implementing the functions and roles of fishing ports and existing facilities. This study aims to determine the level of performance of the Kutaraja fishing port management and the level of user satisfaction regarding the services of the Kutaraja fishing port. This research was conducted in February 2020. Located at the Kutaraja fishing port. The research method used is the survey method, namely by observing and collecting data directly on the performance of the Kutaraja fishing port management and user satisfaction regarding the services of the Kutaraja fishing port. Data collection was carried out by interview assisted by a list of questions / questionnaires. The results showed that the percentage value of the fishing port performance index was 78.2%. This value shows that the performance of the Kutaraja fishing port is already at a good level. The user decision index value obtained is 94.02%. This shows that the Kutaraja fishing port is still lacking in the provision of facilities, the utilization of the facilities is still low and the management of the facilities does not reflect that overall users are very satisfied with the service performance of Kutaraja fishing port, Banda Aceh, Indonesia.

1. Introduction

Indonesia is a maritime country because 2/3 of its territory is waters or oceans. Therefore, the existence of a fishing port is a necessity in order to support national Fishing development. In an effort to support increased marine fishing production, the availability of fishing port infrastructure has a very important meaning [1]. Utilization of potential fishing resources requires a fishing port that becomes the center of fishing activities for fish resources, development of fishing fleets, handling and processing of catch production and marketing of catches [2].

The function of a fishing port involves various aspects. The main function of a fishing port is as a work environment that carries out public services [3]. Therefore, it is necessary to have a complete arrangement regarding the position, function, objectives, management and users [4]. In carrying out its function as a public service center, the fishing port must be immediately able to fulfill its function properly [5]. However, on the other hand, there are still weaknesses in its utilization, both due to the quality of the manager due to a lack of experience in managing fishing ports, as well as operational
obstacles caused by lack of facilities which result in fishing ports unable to carry out their functions optimally [6]. This can also happen to fishing ports located in strategic locations such as Banda Aceh, namely the Kutaraja Fishing Port. Therefore, improvement and improvement of Kutaraja Fishing Port can be done through analysis of its performance based on these conditions [7]. It is necessary to study the extent to which the manager performance index and user satisfaction index at Kutaraja Fishing Port of Banda Aceh with the hope that in the future Kutaraja fishing port optimally function.

2. Materials and Methods

2.1. Data Collection
This research was conducted from February 2020, the research location is located at the Kutaraja Fishing Port, Banda Aceh. The method used in this research is survey method, and an interview. Researchers conducted observations and collected data directly on the performance of the Kutaraja Fishing Port management and user satisfaction regarding the Kutaraja Fishing Port services. The performance of fishing ports is analyzed using the scoring method. Each parameter was given a score of 5 for the very good category, 4 for the good category, 3 the enough category, 2 the poor category and 1 the very poor category [8]. Respondents used in this study were 4 people namely administration subdivision, port operations, section management of business facilities infrastructure. Meanwhile, the calculation of the customer satisfaction matrix uses the CSI (Customer Satisfication Index) method in order to obtain value information about the level of performance and satisfaction of port users [9, 10]. CSI is used to determine the overall level of port service attributes and devices using the importance score approach and the satisfaction score of the measured attributes. The data collected in this study are primary data and secondary data. Respondents used in this study were 26 people namely boat captains, fish shop owners, fish transport rickshaws and friends who have helped in completing this research. The sampling technique is done by simple random sampling using a percentage 5% of the total population.

| Criteria Performance Level Index Value | Criteria                                      |
|----------------------------------------|-----------------------------------------------|
| 0% ≤ K < 20%                           | Performance of fishing ports is very poor      |
| 20% ≤ K < 40%                          | Poor fishing port performance                  |
| 40% ≤ K < 60%                          | Performance of fishing ports is quite good     |
| 60% ≤ K< 80%                           | The performance of fishing ports is good       |
| 80% ≤ K ≤ 100%                         | The fishing port performance is very good     |

2.2. Data Analysis

2.2.1. Management Level of Kutaraja Fishing Port
To assess and evaluate the performance of a fishing port based on (i) the method of evaluating the performance of a fishing port, (ii) benchmarks for the performance criteria of the assessment based on the Decree of the Director General of Capture Fishing Number 432 / DPT3 / 072.220.D3 / 1 / 2008. The indicators are as follows: Achievement Matrix to simplify port performance analysis, a matrix is created using the achievement parameters of the function, including: 1. Provision of facilities; 2. Improved employee welfare facilities.

The weighting of the scores for each parameter was repeated 5 times. The number of repetitions is based on the number of respondents who were interviewed by means of a questionnaire. The data from each iteration is averaged. The comparison of the total average value with the total target score can show the percentage of the performance of the Kutaraja Fishing Port, with the following formula [8].

...
\[ Y = \frac{\text{Aktual score}}{\text{Target score}} \times 100\% \]

Where: \( Y = \) Performance percentage of Kutaraja Fishing Port; Aktual score = Total average score based on actual data; Target score = Total score based on maximum target.

The level of performance of fishing port management as a whole can be seen from the criteria for the operational level of fishing ports, with the following criteria [11].

2.2.2 Customer Satisfaction Index
Measuring the consumer satisfaction index or the Customer Satisfaction Index (CSI) is needed because the results of the measurement can be used as a reference for determining targets in the coming years because this index is directly proportional to service quality [12]. CSI is used to determine the overall level of port service attributes and devices using the importance score approach and the satisfaction score of the measured attributes [13, 14].

The CSI measurement method includes the following steps:
1. Calculating the Weighting Factor (WF), which is changing the average value of importance to a percentage of the total average importance of all tested attributes, so that a total WF of 100% is obtained.
2. Calculating the Weighted Scored (WS), which is the multiplication value between the average value of the performance level of each attribute with the WF of each attribute.
\[ WS = RSK \times WF \]

Where: \( WS = \) Weighted Score (%), \( RSK = \) Average score of satisfaction,
3. Calculating the Weighted Total (WT), which is the sum of the WS of all service quality attributes.
4. Calculating the Satisfaction Index (SI), namely the WT divided by (L) the maximum scale used (in this study the maximum scale used is 5), then multiplied by 100%.
\[ SI = \frac{WT}{L} \times 100\% \]

Where: \( SI = \) Satisfication Index, \( L = \) maximum score (scale).

Based on the overall level of customer satisfaction can be seen from the criteria for the level of customer or consumer satisfaction, with the following criteria [15]:
1. 0.00-0.34: Dissatisfied (service does not meet user needs)
2. 0.35-0.40: Less Satisfied (service does not meet user needs)
3. 0.51-0.65: Quite Satisfied (sufficient service to meet user needs)
4. 0.66-0.80: Satisfied (the service meets user needs)
5. 0.81-1.00: Very Satisfied (the service really meets user needs)

3. Results and Discussions

3.1 Performance Index of Kutaraja Fishing Port Management
Based on the Director General of Capture Fishing Number 432/DPT3/OT.220.D3/I/2008 concerning Guidelines for Performance Evaluation of Fishing Port Technical Implementation Units, the performance analysis of the Kutaraja Fishing Port is carried out through an assessment using the parameters of providing facilities and improving employee welfare [16, 17]. The two parameters are arranged in the form of a matrix by giving a scale score of 1 to 5. Each parameter has a percentage weight which indicates how much influence the parameter has on the performance index assessment of the Kutaraja Fishing Port. The parameter of provision of facilities has a weight of 50% and an increase in employee welfare has a weight of 50%.

The results showed that the total score obtained was 3.91, thus the value produced by the performance index was 78.2%. This value indicates that the performance of the Kutaraja Fishing Port is good [18]. The performance of Kutaraja Fishing port is in accordance with observations in the field and the data obtained. The facilities and infrastructure at Kutaraja Fishing port are maximized, but at this time efforts to repair and construct several facilities as an increase in Kutaraja Fishing port continue to be maximally
improved and efforts to improve these facilities are expected to increase the performance index of the Kutaraja Fishing Port to reach 100%

3.2 Provision of Facilities at the Kutaraja Fishing Port

The results of research on port performance in the form of providing facilities at the Kutaraja Fishing Port such as pool conditions, dock conditions, breakwaters, road conditions, TPI, clean water, fuel, ice, port cleanliness, and security [19, 20]

The performance of Kutaraja Fishing Port, seen from the condition of several existing facilities, ranges from poor to very good. The results of observations through questionnaires distributed to 4 Kutaraja Fishing Port managers obtained an average score of 3.5. This score is close to number 4, which means that the performance of Kutaraja Fishing Port is considered good, even though there are some facilities that do not come from Kutaraja Fishing Port but from the private sector. Based on the graph, we can see that from several performance indicators of fishing ports, ice and fuel installations get the lowest scoring values [21, 22-23].

Fishing port anchoring pond, index value is 5. This proves that the facility is very good in terms of providing a anchoring pond capacity that suits the needs of all sizes of vessels, dredging the anchoring pond when sedimentation occurs, ship mooring operational services and mooring pond cleaning. From this value, the anchoring pond has also been considered very satisfying as seen from the number of ships measuring 51-100 GT totaling 71 units, while ships measuring 101-200 GT totaled 5 units. From the number of vessels <50 GT, we can see that the anchoring pond facilities are very good because the increasing number of ships <50 GT entering the Kutaraja Fishing Port means that the utilization of this anchoring pond has been maximally utilized.

Fish landing dock, the average port index value is 4. This proves that the facility is good in terms of guaranteeing the accuracy of operational time (loading and unloading), arrangement / management of ship parking lots and maintenance of dock buildings. Periodic maintenance of the pier building on the damaged part. From the results of the interview, pond A pier will be made improvements next year. Meanwhile, in terms of procurement of loading and unloading tools there is no port side. From the results of an interview from one of the port respondents, he did not provide loading and unloading aids because each ship had loading and unloading aids from fishermen

Street, the average road index value for the port complex is 5. This proves that the facility is very good in terms of providing asphalt roads, providing roads in and out, roads that are not potholes and not muddy.

Fish auction, the average index value of the fish auction is 5. This proves that the TPI facility is very good in terms of providing optimal TPI capacity, procurement and maintenance of auction / marketing facilities, implementation of TPI functions accordingly even though not optimal and the provision of cleaning facilities and cleaning workers at TPI. The TPI facility is cared for by cleaning it every afternoon by watering the TPI by 6 TPI cleaning workers.

Clean water installation, the average index value of clean water installations is 4. This proves that the facility is good in terms of procuring water sources from boreholes, the quality of clean water provided is good, namely drinking and water supply net sufficient for the needs of Kutaraja Fishig Port facilities. From this value, water installations are also considered unsatisfactory because clean water is not sufficient for fishing. So the fishermen have to order water from the PDAM.

The current need for fresh water in Kutaraja Fishig Port is 27.37 tons / day is filled with Regional Drinking Water Companies (PDAM), apart from that, it also uses well water and river water. Water sources from wells and rivers cannot be used for daily needs, as a result of the quality of the brackish taste, but are used for washing facilities such as pier equipment, floors of auction buildings and ice factories. The fresh water facility available at Lampulo Fishing port is a fresh water reservoir with an installed capacity of 100 m³, which is currently still being used for activities at Lampulo Fishing Port, another facility is a water pump machine which is usually used for cleanliness of facilities. Drinking water facilities are obtained from the PDAM, both for office, housing or warungs located at Lampulo.
Fishing Port. If there is a shortage of drinking water due to the inoperability of the PDAM or the minimum water discharge, drinking water is sold using jerry cans [24].

Place of supply of fuel, the average fuel installation index value is 1. This proves that the facilities are very lacking because the procurement of fuel sources comes from the private sector, namely by PT. Tuah Sejati is not from the port. The fishermen refueling station (SPBN) located at the old port has a tank capacity of 50 tons. From the calculation of the fuel requirement required in one fishing trip is 64,633.90 liters with a utilization rate of > 100%. This explains that the fuel tank is very much utilized and the capacity of the tank has exceeded so that there is a need for additional tanks to meet the needs of fishermen in carrying out fishing activities [25].

Provision of ice, the ice installation facility performance index value 1. This proves that the facility is very lacking. This is because the supply of ice comes from the private sector, not from the port. The ice supplies needed for fishing operations at Kutaraja Fishing Port are 7,781.1 tons or around 129,685 ice sticks/month. Ice production at Kutaraja Fishing Port is 1,899 tons or around 30,600 sticks/month, ice production is provided by the Karya Nusa Jaya ice factory and PT. Aceh Lampulo Jaya Bahari. Provision by the two ice factories located at Kutaraja Fishing Port is still insufficient because the need for supplies at sea is so large that distribution is carried out by ice factories located outside the port area. The amount of ice needed is covered by the shortage through distribution carried out by the ice factory outside the port of 5,882.1 tons/month. If the need for ice with vessels <5 GT is not calculated because many fishermen do not bring ice supplies, the shortage will be 5,838.6 tons/month [26].

Cleanliness of Fishing Port, Cleanliness the port cleanliness performance index value is 4. This proves that the cleanliness of the port is good. The port has provided temporary shelter, procurement of clean drainage and functional waste management (IPAL) [27]. The smell of fish waste water can be reduced by the presence of this IPAL. Fish waste water that comes from fish auctions before being discharged into the sea, is neutralized beforehand until the danger of contamination is below 100 percent standards. It's just that the port has not created a good sanitation system. This can be seen from the condition of the fish auction place where there is still garbage, both in the auction building or in the surrounding area such as at the pier, so that it affects the quality of the catch landed.

Security of fishing port, the security performance index value is 1. This proves that security at the port is very lacking. From this value, we can also know that the security system at the port is very lacking due to the absence of security of the PPS area with a fence, the absence of providing port guards, the existence of acts of violence and also acts of theft.

3.3 Improvement of Employee Welfare Facilities

The improvement in employee welfare, the performance of Kutaraja Fishing Port in improving the provision of employee welfare facilities is good. This can be seen from the average value of 4.3. This result can also be seen from the number of factors that support the need for public facilities.

The state of the work space, the average value of the state of the workspace is 5. This proves that the condition of the workspace is very good in terms of comfortable tables and chairs, good air and lighting because good lighting is very important for employees so that stay focused and inspire. Meanwhile, bad lighting can cause eye damage, headaches and irritation. Dark rooms can even cause depression in employees. A clean and odorless workspace because a clean workspace guarantees health. With a healthy and comfortable workspace, employees can work optimally. The state of the workspace also has work equipment according to office standards such as stationery and computers.

Office building, the average value of the state of the office building is 5. This proves that the condition of the Kutaraja Fishing Port office building is very good in terms of a clean environment, a clean work environment greatly affects employee productivity, the location of the office building is strategic because it is located inside the fishing port location area, a comfortable office and well-maintained building.

Work device, the average value of work equipment is 5. This proves that the work equipment at the Kutaraja Fishing Port is very good in terms of comfortable tables and chairs, the availability of computers because computers provide convenience for employer office in completing work, the
existence of stationery and clean work tools will make the work device durable and will make us more comfortable using it.

Meeting room, the average value of work equipment is 5. This proves that the meeting room at the Kutaraja Fishing Port is very good in terms of cleanliness because a clean meeting room is guaranteed to be healthy. Meeting room with good lighting due to lighting good employees are very important to stay focused and provide inspiration. Meanwhile, bad lighting can cause eye damage, headaches and irritation. Dark rooms can even cause depression in employees. Prayer room, the index value of 1 proves that the facility is very lacking.

Toilet, the average value of toilets in the Kutaraja Fishing Port is 5. This proves that the toilets in the Kutaraja Fishing Port are very good in terms of area and sufficient ventilation because through the air ventilation in and out, so that fresh air always enters bathroom. Windows are also very useful so that sunlight can enter the toilet. So, the bathroom is always bright during the day. Sunlight also keeps the bathroom from being damp, thus minimizing bad odors. Lack of ventilation and airways can lead to tuberculosis (TB) and respiratory infections. So, make sure the toilet gets a smooth ride. The Kutaraja Fishing port toilet has clean water that is sufficient both in quantity and quality to prevent diseases such as scabies, diarrhea, and hepatitis.

Based on the results of interviews with 26 users regarding services at the Kutaraja Fishing Port, regarding the perceived performance of the users and user expectations of service attributes, it can be calculated the amount of overall user satisfaction. Measurement of the level of service satisfaction is carried out on 16 service attributes, individual assessments of the attributes of the Kutaraja Fishing Port services reflect user satisfaction and interests. If seen in general, the level of suitability of each attribute is still below 100%, this means that the service has not maximally satisfied the user.

The user satisfaction index value is obtained of 0.94 (94.02%), this reflects that overall users are very satisfied with the service performance at the Kutaraja Fishing Port because the value is in the range of 0.81-1.00 (based on the consumer satisfaction survey guidebook PT. Succofindo), which means that users are satisfied with the performance of the Kutaraja Fishing Port. Users hope that other efforts must also be improved so that the satisfaction index of users at the Kutaraja Fishing Port reaches 100%.

Each service attribute has a different average of importance and performance. The importance score needs to be measured to find out what attributes are considered the most important in influencing user satisfaction. Through the concept of an interest score, the port providing services can more easily understand the perceptions of its customers and then can find out the expectations of the users. The tool used to analyze importance scores and performance scores is the Importance-Performance Analysis. The creation of a good service in a fishing port is an absolute thing and must be endeavored, because service is one of the factors that determines fishermen's satisfaction is the fishermen's perception of service attributes.

User expectations for service needs at sea focus on six service variables, namely reliability, responsiveness, certainty, empathy, physical appearance and satisfaction. The expectations of users for service attributes become a benchmark for the port in providing services according to the needs and desires of users [8]. The satisfaction index score of 94.02 is a very high achievement for Kutaraja Fishing Port but this is not enough. Kutaraja Fishing Port must continue to improve and increase user satisfaction,

4. Conclusion

The conclusions that can be drawn from research regarding the Manager Performance Index Analysis and User Satisfaction Index are as follows:

1. This study uses 2 parameters of the performance index, namely: the parameter of providing facilities and improving employee welfare facilities. Of all the parameters get a performance index score of 78.2%. This value indicates that the performance of Kutaraja Fishing Port is good.
2. User satisfaction index with variables such as: reliability, responsiveness, certainty, empathy, physical appearance, and customer satisfaction. From all the satisfaction index variables, the user
satisfaction index score is 94.02%. This shows that all users are very satisfied with the service performance at Kutaraja Fishing Port.

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