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Analysis Of Ship's Operating Costs For Fuel Distribution In Eastern Indonesia Region

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Abstract

Objective of the study is analyze between operating costs, freight costs and tonnage of ships in fuel distribution in eastern of Indonesia. Data is obtained through interviews and data collection in the field. problem solved by using descriptive qualitative method. From the research can be concluded as follow : 1). The effect of Ship Operating Costs (opex) on the ship's tonnage (GT) with the increase in ship's tonnage will increase ship operating costs, or vice versa. 2). The effect of Freight Cost on the Ship Tonnage (GT) with the increase in the ship's tonnage will increase the ship's transport costs, but the cost of transport per liter will be smaller if the size of the ship increases. 3). the effect of operational costs on freight costs (Freight Cost) with increasing operational costs will increase the freight cost of the ship. Many factors and dimensions affecting operational costs and transport costs in eastern Indonesia, it is necessary to do further research and depth by incorporating factors of ship operating patterns , ship load factors, regulation and best practices in other shipping industry.

Keywords: Oil tanker, operating cost, freight cost, Ship tonnage, Eastern Indonesia.

Introduction

The oil and gas industry in Indonesia is still supporting the needs of the society in carrying out their daily activities; the society's need for fuel oil is still very much needed so that delays or shortage of fuel will cause confusion in the community. On the other hand the challenge faced by the company is to maintain the distribution of fuel oil while maintaining and reducing the cost of fuel distribution so that the company can still compete and get Optimum benefits can be obtained with cost savings. In Eastern Indonesia, there are many small islands. It will require more ships to distribute fuel to each island. In line with government policies related to one price of fuel where the selling, it can be seen in the table below:

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Table 1

Province	Pertamax		Pertalite	
Dated	Dec 6, 2016	Mar 21, 2017	Dec 16, 2016	Mar 21, 2017
East Java	7,750	7,600	7,050	7,350
East Kalimantan	7,750	7,600	7,250	7,350
North Sulawesi	8,350	7,600	7,250	7,350
Maluku	9,200	7,600	-	7,350
North Maluku	10,700	7,600	-	7,350
Papua	10,000	7,600	7,250	7,350
West Papua	10,500	7,600	-	7,350

Source: Author

In order to support the society's need and to distribute fuel oil to remote areas of the air. The wide the existing distribution network, it will cause new problems, the wider the existing distribution network will cause costs on distribution, other major problems and problem in manage of the product. This condition caused transportation costs in many areas to swell. It also causes additional costs associated with an increasingly widespread and effective network. Analyze various problems regarding distribution channels, The companies can provide the right decisions for distribution channels. The right decision that is possible can be made by the manufacturer, with optimal costs that can be used.

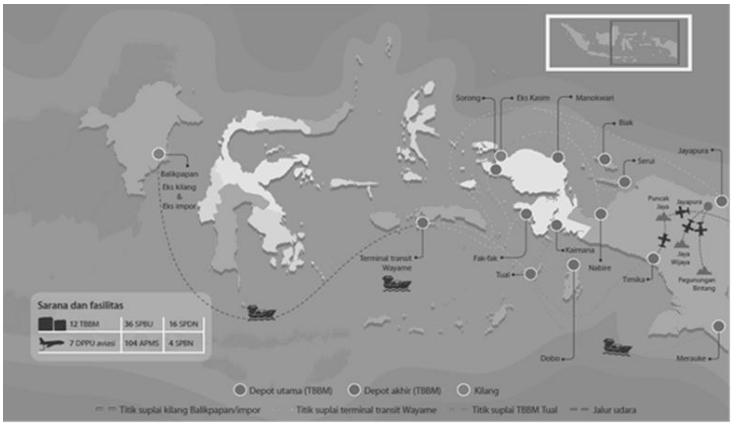

Figure 1

Source: Author

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Based on the author's observation during the discussion and data search as long as it is in the company's supply chain system, including in the eastern regions such as Papua and West Papua, the topography and weather conditions are challenging, this makes the fuel distribution chain very long and multistage. From large to small terminals and ships, the ship used in the distribution can be seen from the following table:

Table 2

No.	Vessel Name	Type	Loading Port	Dish Port	DWT
1.	Ship MR	MR	Balikpapan	Wayame	29,756 T
2.	Ship GP	GP I	Wayame	Sorong	17,781 T
3.	Ship SM II	Small II	Wayame	Tual	6,500 T
4.	Ship SM I	Small I	Wayame	Serui	3,500 T
5.	Ship BL	Bulk Lighter	Kotabaru	PangkalanBun	1,669 T

Source: Author

This condition only occurs in an island country, with an inter-island distribution system that causes the distribution cost burden is difficult to determine with certainty how much the cost of freight costs on each ship, therefore the value needs to be reviewed to see how much the transportation costs are seen from the distance and the size of the ship's tonnage. Based on the background of the problems described above, the authors are interested in researching the Analysis of Ship Operating Costs for the Distribution of Fuel in Eastern Indonesia.

Method

To apply a theory to a problem, a method that is considered relevant and helps solve problems is needed. The method used in this study is descriptive analysis method with a qualitative approach, namely research with qualitative data which is then processed and analyzed for conclusions. The definition of descriptive method according to Sugiyono is "The method used to describe or analyze a research result but not used to make broader conclusions." The other meaning of descriptive method according to Moh.Nazir is "Descriptive method is a method of researching a group of people, a set of conditions of a system of thought or a class of events in

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the present to make a descriptive, systematic, factual and accurate description or painting of facts, traits and relationships the connection to the phenomenon being investigated. "

Judging from the type of data the research approach used in this study is a qualitative approach. As for what is meant by qualitative research, namely research by obtaining numerical data or qualitative data which is assumed, qualitative research is based on the philosophy of positivism which emphasizes objective phenomena and is examined qualitatively. This research was conducted using numbers, research methods that can be incorporated into non-experimental qualitative research, namely descriptive method, descriptive research is research conducted to determine the value of independent variables, either one variable or more (independent) without making comparisons. , or connecting with other variables (Sugiono, 2003: 11). Based on the above understanding, then in the implementation of this research carried out using qualitative descriptive method which is a form of research based on data collected during a systematic study of the facts and properties of the object under study, then interpreted based on theories and literature which are related. This type of research uses qualitative research methods. This study is intended to obtain information about the operational costs of ships in fuel distribution in the Eastern Indonesia Region. In addition, the qualitative approach is expected to reveal the situation and problems faced in the operational costs of the ship.

Discussion and Result

The study was conducted using qualitative methods obtained through in-depth interviews. limitations in this study include the subjectivity that exists in the researcher. This research is very dependent on the researchers' interpretation of the meaning implicit in the interview so that the tendency to bias still exists. To reduce bias, a tringulation process is carried out, namely the source and method. Source triangulation is done by cross checking data with facts from different informants

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and from other research results. While triangulation method is done by using several methods in data collection, namely in-depth interview method and observation. Another limitation is the limited time for research, when the interview will be conducted the subject is not in place so to get information the researcher chooses to interview the subject at a later time. In responding to each statement submitted, the researcher partially understands the intent of the statement submitted so that the researcher needs to explain the purpose of the statement again From the data analysis then get as follows:

Table 3

Source: Author

Vessel	Gross Ton (Ton)	Operating expenses (USD)	Freight Cost USD
Ship MR	24,167	9,647.84	272,964.29
Ship GP	14,262	7,941.90	118,747.04
Ship SM II	5,263	4,299.26	65,821.87
Ship SM I	2,660	4,123.97	69,654.64
Ship BL	1,487	3,373.10	38,330.94

From the results of in-depth interviews with respondents and supported field data presented in the table above that ships with a larger size then the transportation costs will be even greater, but if referring to the table of calculation of freight cost / KL that transport costs per Kilo liter compared inverse to the size of the ship. Ship operating costs are greatly updated by the components of Depreciation, maintenance / repair costs and Crew costs, with the percentage of Depreciation costs from 2016 – 2017 is 33% - 32%, maintenance and repair costs with a percentage of 34% - 31% then Crew costs with percentage of 27% - 30%.

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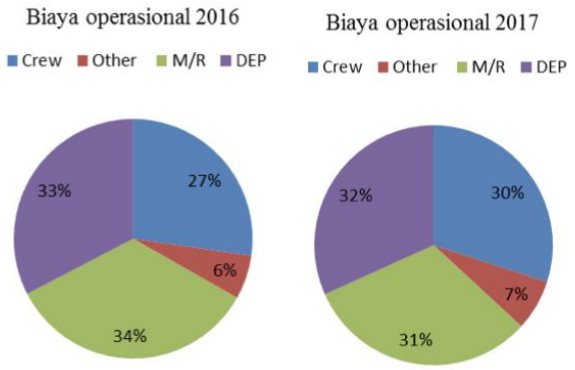

Figure 2. Percentage of Operating Costs 2016-2017

Source: Author

From the cost of 32% - 33% of maintenance and repair costs in accordance with the table of operational costs above that the purchase of materials or spare parts accounted for 11% of the cost of expenses, then the purchase of lubricants is 7% and repairs 4%. This shows that when it is able to do efficiency in the process of purchasing spare parts, operational costs can also be pressed. Crew costs account for 27% - 30% of ship operating costs, the number of crew on board affects the amount of crew expenses. For example, MR ships are manned with 29 Crew of the same size, ships of this type, which are managed by other companies, are only managed by 24 Crew, which means fewer than 5 crew on the MR ship so as to reduce operating costs The crew on the MR ship, it can be reduced while still paying attention to the regulations and safety operation of the ship. Referring to the Freight Cost Calculation that the components of the cost of transportation with cost components include: operational costs, port costs, fuel costs, with a percentage of operational costs of 40% of freight costs, then 55% is fuel costs and the remaining 5 % is port fees.

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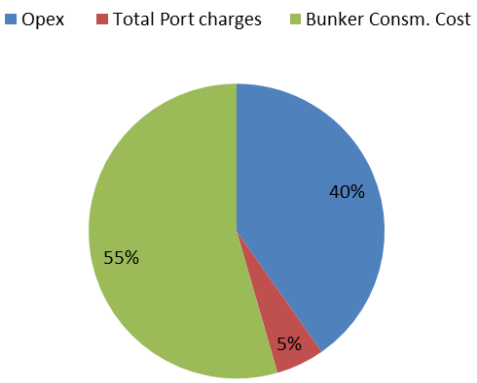

Figure 3. Pie Chart of Freight Cost
Source: Author

Fuel costs are the largest component of costs on each ship, it can be seen in the figure below. Freight Cost calculation, with a percentage ratio between 47% - 64% with details in the notes below.

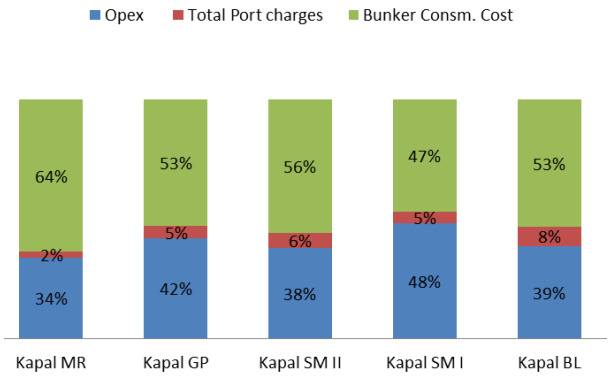

Figure 4

Source: Author

If able to optimize or make efficient use of fuel freight costs can be optimally significantly.

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Conclusion

The conclusions obtained from the analysis and discussion of the previous chapter regarding Ship's costs for fuel distribution in eastern Indonesia are as follows:

1. Ship Operating Costs are costs incurred in connection with the operation of a vessel on a voyage, which is grouped as follows: Salary crew, Computer, Fresh water, Material transportation, Maintenance costs (Material / Spare parts, Service / repairs), Lubricants, Paint, Chemical, insurance, certificates, Class Survey, Catering, Depreciation (Capital & Docking costs), Over Head, Telephone.
2. Increased ship tonnage will increase ship operating costs, or vice versa. Increased ship tonnage will increase ship transport costs, but transport costs per liter will be smaller if the size of the ship gets bigger and increased operating costs will increase freight costs (freight costs) ship.
3. Ship operating costs are greatly updated by the components of Depreciation, maintenance / repair costs and Crew costs, with the percentage of deprecation costs from 2016 – 2017 is 33% - 32%, maintenance and repair costs with a percentage of 34% - 31% further costs Crew with a percentage of 27% - 30%. From the cost of 32% - 33% the cost of maintenance and repairs for the purchase of materials or spare parts accounted for 11% of the total maintenance costs, then the purchase of lubricants for 7% and repairs 4%. This shows that when it is able to do efficiency in the process of purchasing spare parts, operational costs can also be pressed. Crew Costs Contributing 27% - 30% of ship operating costs, the number of crew on board affects the amount of crew expenses, so in order to reduce operating costs, the number of crew on board MR can be reduced while still paying attention to the regulations and safety of the ship.
4. Freight Cost are operational costs arising from operations in accordance with the number of round trip days of the ship plus the cost of fuel and seaport or total freight cost: (Operational Cost x RTD) + (2x Port Chargers) + Bunker's

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Consumption. That the freight cost component includes: operational costs, port costs, fuel costs, with a percentage of operational costs of 40% of freight costs, then 55% is fuel costs and the remaining 5% is port costs.

5. Fuel costs are the largest cost component on each vessel, with a percentage ratio of 47% - 64%.

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