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Fishermen's perception of the boat fuel CONs version program from fuel oil (BBM) to fuel gas (BBG) in Semayang village Kenohan district Kutai kartanegara regency Indonesia

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Article Info

Abstract

The research aims to determine public perceptions of the ship fuel conversion program from fuel oil to fuel gas in Semayang Village. Primary data collected through interviews with respondents using a list of questions prepared according to the research objectives. The sampling technique used non probability sampling method, so the number of respondents is 14 people. The results showed that: energy diversification policy in the fisheries sector is expected that fisher's can switch from fuel oil to LPG, but in fact he still use BBM as fuel for their boat engines. Cumulatively, the class interval obtained for fishermens perceptions of the use BBM to BBG conversion machine assistance in Semayang Village is 27,3. So the length of the interval class indicator for the use of BBM conversion engine assistance to BBG as fuel for fishing boats in Semayang Village is in the range of 25,01-35,01 with a medium category.

Keywords: Fisherman, Fuel, Conversion, Fisherman Perception

Introduction

Kutai Kartanegara Regency has an area of 27,263.10 km^2 and a water area of approximately 4,097 km^2 which is geographically located between 115026′28″ BT - 117036′43″ BT and 1028′21″N – 1008′06″ LS. Administratively, Kutai Kartanegara Regency is divided into 18 subdistrict areas which overall consist of 193 villages and 52 urban villages. Kenohan Subdistrict is one of the sub-districts in Kutai Kartanegara Regency located in the interior of the Belayan River, which is a tributary of the Mahakam River. Geographically, this subdistrict located on the equator is located in a position between 0º11′ N - 0º12′ LS and 115º57′ BT-116º33′ BT (Kutai Kartanegara.com, 2019).

The role of the government in improving the welfare of fishing communities is basically carried out by issuing policies that have a positive impact on the welfare of the fishing community itself. One form of policy carried out by the Ministry of Energy and Mineral Resources is the provision of boat engine assistance for conversion from fuel oil (BBM) to fuel gas (BBG) to fishermen throughout Indonesia. The government hopes that the assistance of converter kits for fishermen from the fuel to BBG conversion program can be a solution to overcoming fuel scarcity by providing alternative fuels, namely the use of LPG as fuel for boat engines, and help the fishing community's economy prosper (Wibowo 2016) [10].

According to Nono (2017) [6], due to the long-term unavailability of large amounts of oil reserves in nature, stakeholders are forced to anticipate this. The energy diversification policy in the fisheries sector, in the form of providing and distributing liquefied petroleum gas for small-scale fishing vessels, is one of the government's efforts, as stated in the Presidential Regulation of the Republic of Indonesia Number 126 of 2015 concerning the provision, distribution, and pricing of LPG for fishing vessels for small fishermen.

According to Mairista and Eriyanti, F (2020), in order to increase marine and fisheries potential, the government has regulated policies related to the empowerment of small fishermen through the distribution of LPG regulated in the Presidential Regulation of the Republic of Indonesia number 126 of 2015, which means that there is a guarantee of availability in the distribution of LPG as fuel gas for fishing boats. In its distribution, the city of Padang is one of the areas that receives LPG for fuel assistance for small fishing boats. The distribution of LPG was carried out in 2017 for as many as 525 packages in Padang City, especially in Pasia Nan Tigo Village, where 176 packages were distributed. The Ministry of Energy and Mineral Resources in collaboration with the Padang City government, especially the Padang City Fisheries Marine Service and Pertamina, which is an LPG distributor, empowers fishermen in the form of LPG distribution for small fishing boats. The LPG distribution program designed by the government and stakeholders is not running well due to the lack of participation from fishing communities and the incompatibility of LPG provided with the established LPG function, so that the distribution of LPG in Pasia Nan Tigo Village is ineffective.

According to Wahyudi (2019) [9], based on preliminary observations in the field with some fishermen receiving converter kit packages in August 2018, most fishermen receiving converter kit packages in Sukabumi Regency are reluctant to use LPG. Fishermen still use fuel oil as fuel for their boat engines. Evaluation of fishermen's responses based on previous explanations is very necessary. Fishermen are target audiences that play an important role in the implementation of the fuel oil to fuel gas conversion program for fishermen. Good fishermen's acceptance of the fuel oil to fuel gas conversion program, especially the use of LPG as fuel in boat engines, will have a good impact on the success of the program, and vice versa. Evaluation can be done by measuring fishermen's understanding or perception of the use of LPG as fuel in boat engines.

Based on the description above, researchers are interested in studying how fishermen perception the ship engine fuel conversion program from fuel oil (BBM) to fuel gas (BBG) in Semayang Village, Kenohan District, Kutai Kartanegara Regency.

Research Methodology
The research location will be carried out in Semayang Village, Kenohan District, Kutai Kartanegara Regency. This research will be carried out for 9 (nine) months starting from February to November 2021 and ending in March 2023. The research method used by the author is the survey method. According to Sugiyono (2012) [7] the definition of the survey method is: "Research conducted using questionnaires as a research tool carried out on large and small populations, but the data studied is data from samples taken from these

populations, so that relative events, distribution, and relationships between variables, sociological and psychological are found". Based on the data sources obtained in this study, namely using primary data and secondary data. The data used in this study was obtained from a questionnaire, namely by conducting direct interviews with fishermen in Semayang Village.

Sampling methods
Based on preliminary observations, it is known that there are 319 fishing populations that actively carry out fishery activities, such as fishing, in Semayang Village. In 2020, there were 14 fishermen who owned 5 GT boats and received assistance in the form of fuel to BBG conversion machines. Thus, the sampling method is carried out with the selected non-probability sampling technique, namely, saturated sampling (census), where all fishermen receiving assistance become respondents. According to Supriyanto and Machfudz (2010) [8], saturated sampling (census) is a method of sampling when all members of the population are used as samples. This is often done when the population is small less than 30 people.

Data analysis methods
This type of research is qualitative and descriptive. Qualitative descriptive research is research that intends to understand the phenomenon of what the subject of research experiences, for example, behavior, perception, motivation, action, and others holistically and by means of description in the form of words and language in a special natural context and by utilizing various natural methods (Moleong, 2007) [5]. Measuring people's perceptions using the Likert Scale method. The Likert scale is a measurement method used to measure the attitudes, opinions, and perceptions of a person or group of people about social phenomena. The data processed from the results of the questionnaire collection are given weight in each alternative answer to data processing the results of the questionnaire using a likert scale, where the variables to be measured are described as variable indicators and used as a starting point for compiling instrument items that use a likert scale and have a graduation from positive to very negative (Sugiyono, 2012) [7]. The summation results are then made into a frequency distribution in three (three) categories, namely: high, medium, and low. Then a classification is carried out to find out the number of interval classes. The highest and lowest score scores of each indicator are obtained on the basis of the multiplication between the lowest and highest score values in the questionnaire with the specified number of categories. The lowest score given is 1 (one), the highest score given is 3, and the number of specified categories is 3. See the table below to determine the scoring value:

Table 1: Scores and Class Intervals of Indicators of LPG Use as Fuel

No.	Indicator	Lowest Score	Highest Score	Class Intervals	Category
1.	LPG Availability	4	12	4,0-6,6	Low
				6,7-9,3	Medium
				9,4-11,9	High
2.	LPG acquisition locations	3	9	3,0-5,0	Low
				5,1-7,1	Medium
				7,2-9,0	High
3.	LPG Price	2	6	2,0-3,3	Low
				3,4-4,7	Medium

No.				4,8-6,1	High
				3,0-5,0	Low
4.	Socialization of the use of LPG as fuel	3	9	5,1-7,1	Medium
				7,2-9,0	High
				3,0-5,0	Low
5.	Safety factors	3	9	5,1-7,1	Medium
				7,2-9,0	High
	Total Score	15	45		

Source: Primary data processed, 2021.

The class interval obtained for the degree of perception of the use of LPG as fuel for ship engines is 10 with the following calculations:

$$I = \frac{\text{Maximum Score} - \text{Minimum Score}}{\text{Multiple Interval Classes}} = \frac{45-15}{3} = 10$$

As a result, a class interval was obtained about the level of perception of fishermen toward the conversion program of the use of LPG as fuel for ship engines, as shown in Table 2.

Table 2: Interval Class Length

No.	Interval Class Length	Category
1.	15,00-25,00	Low
2.	25,01-35,01	Medium
3.	35,02-45,02	High

Source: Primary data processed, 2021.

Results and Discussion
Overview of Research Locations
Kenohan Subdistrict is one of the sub-districts in Kutai Kartanegara Regency and is located in the interior of the Belayan River, which is a tributary of the Mahakam River. Geographically, the subdistrict located on the equator is located in a position between 0º11'LU and 0º12'LS and 115º57'BT and 116º33'BT. The district, which has an area of 1,302.20 km², has a population of 10,291 people (as of 2019) spread across 8 villages, namely Semayang, Tubuhan, Teluk Muda, Tuana Tuha, Kahala, Teluk Bingkai, Lamin Telihan, and Lamin Pulut. Kenohan Sub-district has great potential in the field of fisheries. Semayang Village is one of the villages in Kenohan District that has the greatest fishery potential. The village, which is surrounded by Lake Semayang, has a village area of 10,000 km2 and a village forest area of 252,878 km2.Semayang village has a population of 1,423 people, divided into 670 women and 753 men. The index data of religious villages adopted by the community in Semayang Village is Islamic. People in Semayang Village earn a wide range of incomes, with 369 working as fishermen being the most numerous. (Building the village index, 2021).

Description of Fishermen in Semayang Village
Generally, the type of boat used by the respondent fishermen in Semayang Village is a traditional boat. Traditional ships in the form of ships made of wood with a length of about 3–4 meters are equipped with wooden paddle tools and ketinting machines. The types of fishing gear used by respondent fishermen in Semayang Village are various, such as ringgis, fishing rods, bubu, and trawls, which are generally used depending on the water conditions in a particular season. During droughts, fishermen use trawls that are operated in groups between fishermen. Other fishing gear is used individually, not in certain water conditions, and does not depend on the season, as is the case during the dry season.

Respondent fishermen fished at fishing locations, namely around Lake Semayang. Lake Semayang is surrounded by several lakes, namely Lake Melintang and Lake Pela. Each lake has territorial boundaries and fishing zone boundaries, so that respondent fishermen and general fishermen in Semayang Village are prohibited from crossing these boundaries and only fishing in the Semayang Lake area.

The types of fish caught by respondent fishermen in Semayang Village are very diverse. Because of the diversity of fish in Lake Semayang, the catch of respondent fishermen is diverse. Haryono's research (2006) [2] in the central Mahakam River area (Lake Semayang-Melintang) found 15 species of fish. Furthermore, the research of Nasution *et al*. (2008) in the Muara Kaman River and Lake Semayang found 19 and 24 species of fish, respectively. Some types of fish caught are fresh water fish such as Biawan fish (Helostoma temminckii), Snakehead fish (Channa striata), Papuyu fish (Anabas testudineus), Lais fish (Kryptopterus bicirrhis), Catfish (Pangasius pangasius), Toman fish (Channa micropeltes), Tilapia (Oreochromis niloticus), and various other types of freshwater fish. Respondent fishermen distribute their fish catches directly to middlemen or traders in Semayang Village. Some fishermen have a patron-client relationship in the form of borrowing money, capital, and some fishing gear so that the fish catch is only distributed to collecting merchants who provide capital money and fishing gear.

Description of the BBM to BBG Conversion Program
In 2020, fishermen received assistance at the Semayang Village Office, and briefings were conducted directly by the fisheries office of the Kenohan sub-district. According to Moh's research, Ahsan S. Mandra (2016) found that in order for a gasoline-fueled motor to use LPG gas, an LPG converter kit is needed. An LPG converter kit consists of an LPG tube, regulator, gas valve, and LPG carburetor. The nearest gas refueling location (SPBU) from the research site is in Kota Bangun. Gas refueling is performed by large agents, who are then redistributed to the nearest small stalls, resulting in a significant price difference from the official price set by Pertamina. For the size of 3 KG of LPG used by residents at the research site, in general, the market price of the nearest stall is 30,000 rupiah per LPG tube. Of course, in every program carried out by the government, the beneficiary community feels the impact both positively and negatively. The positive and negative impacts felt by the beneficiary community, namely the positive impact of the community seeing the assistance as a new thing and providing new options in using fuel other than fuel oil, and the negative impact of concern about the use of BBG due to the large number of cases of gas cylinders exploding, causing the beneficiary community to be concerned if they use BBG as a substitute for fuel.

Fishermen's Assessment of Assistance Programs

The results of the study on respondent fishermen at the study site showed that 14 respondents, or 100% of beneficiaries, did not use the assistance program because the community felt that the use of converter kits was too difficult, the operation was difficult, and the retail price of gas cylinders was too expensive. For these reasons, fishermen who received assistance at the study site only used their aid engines without converter kits and continued to use fuel oil (BBM) as their fuel. According to Mahnep's research (2019) [3], 100% of respondents in the two districts of Pringgabaya and Keruak sub-districts did not use converter kits for the reason that this assistance program has advantages and disadvantages, and the advantages of this fuel oil (BBM) to fuel gas (BBG) conversion assistance program are very economical, while the disadvantage of this assistance program is that fishing communities claim to be difficult to operate. The reason that the converter kit was not used was because the respondent had brought various supporting equipment in the form of a 3 KG gas cylinder, and a gas cylinder that had been exposed to water made it difficult to start the engine. The respondent was worried that there was an engine jam in the middle of the sea as a result of a technical error in the converter and its device.

Fishermen's Perceptions of the Use of LPG as a Fuel for Fuel Conversion Machine Assistance to BBG

The score and class intervals of fishermen's perceptions of the use of LPG as fuel for fuel conversion machines to BBG in Semayang Village can be seen in detail in the following table:

Table 3: The score value and class interval of fishermen's perceptions of the use of LPG as fuel for fuel conversion engines to BBG in Semayang Village

No.	Indicator	Lowest Score	Highest Score	Class Intervals	Total Score	Category
1.	LPG Availability	1,3	2,2	4,0-6,6 6,7-9,3 9,4-11,9	6,6	Low
2.	LPG acquisition locations	1,6	2,3	3,0-5,0 5,1-7,1 7,2-9,0	6,2	Medium
3.	LPG Price	1,4	2,6	2,0-3,3 3,4-4,7 4,8-6,1	4	Medium
4.	Socialization of the use of LPG as fuel	1	1,3	3,0-5,0 5,1-7,1 7,2-9,0	3,6	Low
5.	Safety factors	1,1	2,9	3,0-5,0 5,1-7,1 7,2-9,0	6,9	Medium
	Total Score				27,3	

*Source***:** Primary data processed, 2021

The length of the class interval for the use of fuel for BBG conversion engines as fuel for fishing boats in Semayang Village can be seen in detail in the following table:

Table 4: The large class interval of fishermen's perceptions of using LPG as fuel for fuel conversion engines to BBG in Semayang Village

No.	Interval Class Length	Category	Total Score	Category
1.	15,00-25,00	Low		
2.	25,01-35,01	Medium	27,3	Sedang
3.	35,02-45,02	High		

*Source***:** Primary data processed, 2021

The score of 27.3 is obtained from the calculation results of each predetermined perception category. The score of 27.3 is in the medium category.

Conclusion

The energy diversification policy in the fisheries sector is expected to allow fishermen to switch from fuel oil to fuel gas, but in fact, fishermen still use fuel oil for their boat engines. Cumulatively, the class interval obtained for the fishermen's perception of the use of fuel oil for fuel gas conversion engine assistance in Semayang Village is 27,3. As a result, the length of the interval class indicator of the use of fuel oil conversion engine assistance to fuel gas as fuel for fishing boats in Semayang Village is in the range of 25,01-35,01 which is considered moderate. This value can mean that the fishermen's perception of the use of LPG as fuel for fuel conversion engines in Semayang Village is quite good.

Suggestion

There needs to be periodic assistance and training by the Marine and Fisheries Service of Kutai Kartanegara Regency in order to increase fishermen's understanding of the use of LPG as fuel in boat engines, guarantee high product safety based on the Indonesian National Standard (SNI), ensure the availability of LPG, which is always guaranteed, and ensure the location of LPG acquisition is close to fishermen's activities

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