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Comparative Study of The Traditional Fishing Ship Using *Cantrang* Fishing Gear to be Bottom Longline in *Ujungpangkah* Waters, Gresik

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Abstract

The variety of fishing gear used by fishermen in Indonesia initiates how to choose the most environmentally friendly fishing gear with good efficiency. The Indonesian government bans *cantrang* fishing gear because it endangers fish ecosystems and coral reefs. It was then replaced with a longline. This study employs a case study method with descriptive analysis focusing on a case in detail and intensively. In addition to reviewing the environmental impact of using fishing gear *cantrang* and bottom longline, this study also analyzes the costs required for both tools from manufacture to maintenance, and the revenue of the catch. Based on the research conducted, the capital required for *cantrang* fishing gear is IDR. 29,450,000 and a longline of IDR. 29,030,000. The profit generated by the *cantrang* fishing gear for a year is IDR. 56,012,000 while the longline is IDR. 33,836,000. Therefore, it can be concluded that replacing the *cantrang* fishing gear with a bottom longline is considered simpler, environmentally friendly, inexpensive, and easy to develop.

Keywords: *Cost comparison; traditional fishing boats; Fishing gears (cantrang and bottom longline)*

1.Introduction

Ships are a means of inter-island transportation used in Indonesia, including those used to transport passengers, goods, vehicles, and even a means of earning a living. The need for ferries in Indonesia is enormous. It is because Indonesia is one of the largest archipelagic countries and one of the countries with the world's largest population. Most boats in Indonesia still rely on shipyards/docks, both state-owned and private companies, in the construction of new ships or ship repairs. One type of ship that is commonly used is the traditional fishing boat.

Based on research by Senoaji (2016), traditional fishing boats are made of wood and used by fishing communities along the coast as the main transportation to catch fish in the sea. In the Ujungpangkah area, Gresik, there are three fishing gears commonly used by fishermen to find fish, namely *cantrang*, Purse Seine, and Bottom Longline. Based on the Regulation of the Minister of Maritime Affairs and Fisheries of the Republic of Indonesia Number 2/PERMENKP/2015, there is a prohibition on the use of trawls and seine nets in the fisheries management area of the Republic of Indonesia. So that there will be many fishing boats in the Ujungpangkah area that are not operating because the majority of fishermen in the Ujungpangkah area use *cantrang* fishing gear.

Some previous studies have discussed the efficiency of *cantrang* and longline fishing gear on traditional fishing boats. One of them is the research from Enrico, D. (2017) concerning the Stability Analysis and Movement of Traditional Fishing Boats for the Replacement of *Cantrang* Fishing Gear into Lower Longlines for the Batang Region. The results of this study are that the replacement of *cantrang* fishing gear with a bottom longline does not significantly affect stability and is still in accordance with IMO (International Maritime Organization) criteria. In addition, Setyorini (2009) also conducted a study entitled Comparative Analysis of Productivity of Bottom Set Longline and *Cantrang* (Boat Seine) Fishing Business in Juwana, Pati Regency. From this research, *Cantrang* has a higher level of productivity than longlines. It causes the profits of the *cantrang* business to be greater than the longline. One of the factors that have a significant effect on the productivity of longline and *cantrang* is operational costs.

Based on the background of the study above, this research aims to solve the questions, including the factors that influence the cost comparison of *cantrang* and bottom longline fishing gear and how is the cost comparison of *cantrang* and bottom longline fishing gear. Looking back at the previous research, this study concentrates on knowing more about

the financial analysis of the two fishing gears. This research focuses on the coastal waters of Ujungpangkah by observing the cost comparison between *cantrang* and long-line fishing gear.

Fishing boat

Fishing boats are used for fishing/fishery activities which include the use or activities of catching or collecting marine resources, as well as their use in research activities, training, and inspection of marine resources. Human tendency to communicate and interact is not a phenomenon that emerges recently. These symptoms appear in line with the development of human civilization. Whether for the motive of developing power, politics, survival, and slavery; it has been a long time since humans are out of their closest social environment. This is what leads to the movement of people from one region to another, both in the form of individuals/families and in large waves. According to Mutmainnah (2021), there are four types of vessels used for fishing activities in the waters.

Gerut (payang boat)

Gerut (*payang* boat) is a boat used specifically to catch flying fish with a larger boat than the *kalothok* with a crew of 6-12 people.

Jukhong (jukung)

Jukhong is a ship that is used when carrying out fishing activities located at the edge of the sea and only uses one crew member. This ship is made of whole logs which are hollowed out in the middle to make boats. The stages of making this boat begin with selecting good wood and then cutting it according to the size needed (N.A.D. Riansah:2015). After that, the perforation process is carried out using the tools provided.

Kalotok (Kalotok)

Kalothok is a boat like the *Gerut* boat but smaller in size and carries two crew members in its fishing activities. Kapal klotok is a small boat made of wood and how used with a diesel engine. This ship can also carry two-wheeled vehicles so that it becomes an alternative crossing. The *Klotok* boat can accommodate around 15 to 20 people. People use this ship as a means of transportation. In addition, *klotok* boats are used to cross and transport goods.

Konteng (kursin)

Konteng is a boat that uses the help of big lights when sailing. This boat cannot go under the full moon because it relies on big lights and will be covered by the moonlight. The cargo of this ship consists of 12-15 people. The *Kursin* boat, or what is commonly called the purse seine boat, is specifically designed to catch fish using purse seine-type fishing gear. In addition, this ship is used to accommodate, store, cool, and transport catch. Purse boat vessels are operated specifically to catch fish (Nelwan, 2010).

Cantrang fishing gear

Cantrang is a bag net pulled behind the ship when the ship sails along the bottom surface of the waters with the aim of catching fish, shrimp, and other types of demersal (J. Results: 2017). The *cantrang* fishing gear is used by fishermen on the coast of northern East and Central Java. They use it based on its flexibility and flexibility. Also, most fishermen can operate this fishing gear (S.E.D. Listiana: 2013). However, the *cantrang* ban regulation caused controversy because most of the fishing community used it to go fishing. This tool is considered more efficient than other fishing gear.

The *cantrang* fishing gear has the shape of a large bag that looks like a cone which becomes increasingly conical at the back (I. Nugroho Aji: 2013). According to Wardhani, the use of *cantrang* is divided into four stages including preparation, setting, towing, and hauling. *Cantrang* fishing gear is made of net material that resembles a bag that looks like a cone which is increasingly conical at the end (Wardhani: 2013). *Cantrang* does not have a tool to open the mouth of its net in the form of a goal (beam) or board (otter board) and to pull the rope sembar using a captain's winch from the ship (Wardhani: 2013). *Cantrang* fishing gear is usually used on sandy bottom waters that do not have shells. This tool consists of some parts, including wings, body, and pockets. The function of the wings is to lead the fish into the body. Later, they will put it into the bag. This part of the pocket then becomes a place to store the caught fish (Wardhani: 2013).

Bottom Longline fishing gear

According to Enrico, Rawai (Long-Line) is a series of long fishing line units. This tool consists of the main line, branch lines tied hanging on the main rope with intervals of certain distances, and hooks of different sizes (number), tied to each lower end of the branch lines (each branch consists of one hook) (Enrico: 2017). Based on its use, the Bottom Longline is considered simpler, environmentally friendly, inexpensive, and easy to catch fish in the bottom waters (J. W. Malau:2020). According to Sutoyo (2017), Bottom Longline fishing gear has several components which are

Mainline

The material used for the main rope made of Polyethylene (PE) with a diameter of 5 mm. The overall length of the main rope is about 200 meters, and at 5 meters, a branch line is attached. According to Sentosa, several branch lines are shorter and smaller in diameter. There is a baited book at the end of the branch line (Sentosa:2016)

Branch Line

The material used for branch ropes is made of polyethylene (PE) with a diameter of 3mm. The length is 1 meter, and they are knotted at the ends of the branch using a dead knot. A branch attached to the main rope using a fisherman's knot. The end of the branch rope next to it is made of a fixed eye (Eye splice) which is used for fishing. According to Ginting, the longline fishing gear has a line that stretched horizontally and consists of branch lines and hooks. The branch line is tied to the main rope with the same number of hooks (Ginting:2022).

Lifeline

The material used for the branch line is polyethylene (PE) with a diameter of 7 mm. The length of each 75-meter buoy line is following the depth of the water. There are four buoy ropes used. Each buoy has three branch lines from the length of the main rope. The distance from one buoy to another is 15 meters. It connects the main rope, weights, buoys or flags, and lights.

Float or umbul

Buoys that have lights or buoys are flagged. The material for pennant buoys is made of cork which is given a light or a clamp, then eqquipped by bamboo with a flag. The bottom of the buoy is weighted so that the flag on the surface can stand upright. At both ends of the combination of the main line and branch rivets, buoy lines and cork buoys are attached with flags made of cloth with bright colors to make it easier for fishermen to find the location of the longline that has been installed. Between the buoys are then connected with the buoy rope and the main rope where along the main rope several branch ropes are attached.

Ballast

This ballast material is made of stone or cement weights of 3 kg each. This ballast is attached to each time the buoy rope is at the end which is at the bottom of the water, 4 pieces of ballast are carried. This ballast is used to make it easier to increase the ballast. Firdaus stated that one method of operating the longline fishing gear is the process of lowering the fishing gear (setting). In this process, after all the components are ready and the ship arrives at the predetermined fishing area, the unloading process will be carried out. This process begins with lowering the flag buoy and removing the ballast, and then spreading the baited line according to the fishing order [20].

Swivel (Swivel)

The material of the swivel (swivel) is made of brass or iron. The swivel is attached to the main rope and buoy rope. Each main rope is 450 meters long and has pairs of swivels and so on.

Fishing line (hooks)

The site uses the number 7, the type of fishing line used is good, and as many as 200 seeds are used. At the bottom longline, each end of the branch line is tied with a fishing line (No. 5 or 8) which is equipped with a swivel (swivel) and weights.

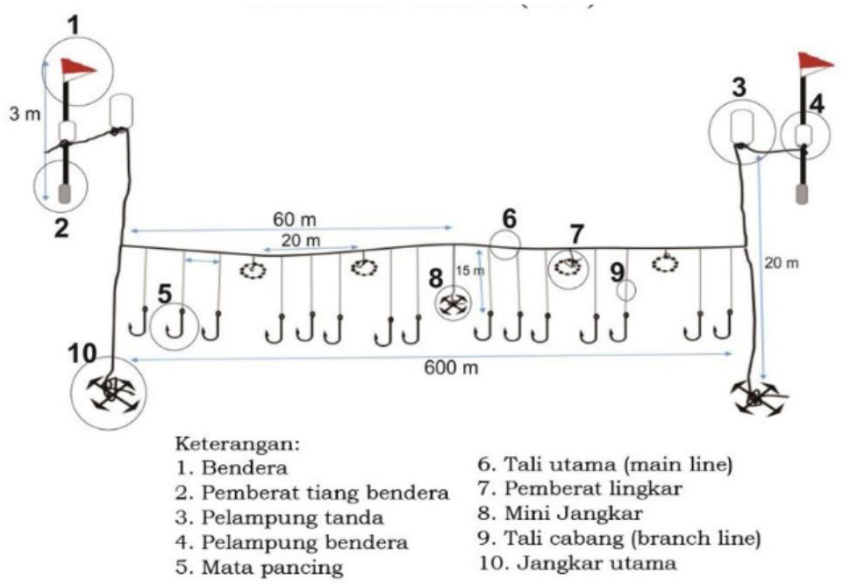

Figure 2.8. Longline fishing gear installation structure according to Kholis (2017)

Cost comparison

Syahputra stated that economic studies can be carried out to determine investment plans by calculating expected costs and benefits by analyzing economic aspects and comparing costs and returns, such as availability of funds, cost of capital, and the project's ability to repay. funds within a certain time, regardless of whether the project continues growing use each gear. Economics is calculated and tabulated, including Capital costs incurred by the Tancap fishing unit, including the cost of purchasing generators, lighting, and other equipment (I. Putu: 2019). Fixed cost includes maintenance costs, which include machinery, fishing gear, and other equipment. Variable costs include operating costs i.e. fuel and consumables. Of course, *cantrang* and bottom longline fishing gear have different costs. Total costs result from the sum of fixed costs and variable costs. This amount of income is the production value from the sale of the catch for each fishing trip. The advantage is a decrease in sales due to overall costs.

2.Method

This research is research that uses the case study method as a guideline. In addition, this research uses the descriptive analysis method where the study focuses on a case in detail and intensively. This method aims to create a systematic, factual, and accurate description and description of the facts, characteristics, and relationships between the phenomena investigated (Arikunto:2002). This research is a case study that pays attention to details in a particular case. The research sample focuses on detailed case studies of fishermen using *cantrang* and bottom longline fishing gear.

The data collection research was carried out by direct observation and interviews with fishermen. Interviews were carried out following the guide list of questions arranged in the form of a questionnaire. The data collected in this study included primary data obtained directly by interviewing fishermen who use *cantrang* and Bottom Longline users around the Ujungpangkah area and secondary data obtained from fisherman group organizations related to this research. In addition to interviews, the instrument used in this research is direct observation of the field, namely visiting a target fisherman and observing conditions directly in the waters of Ujungpangkah, Gresik. The puIDRose of this observation is to conclude the data to be taken using the five senses to facilitate the collection process data. Financial analysis that covers this research including Payback period, Net Present Value (NPV), Internal Rate of Return (IRR), B/C (Benefit Cost Ratio),

3. Findings and Discussion

Ngimboh Village is one of the villages located in the north sea waters of Gresik Regency. This village has a geographic location bordering the villages of Raci Wetan and Gumeng in the north. The south border is Abar Abrir and Sidokumpul Village. To the east, it is bordered by Kisik Village and Pegundan Village to the west. This geographical location has an important role in the community's economy. One of the livelihoods of the majority of the population is fishing. According to statistical data, out of a total of 1,581 male residents, there are 150 people who work as fishermen. They start their fishing activities in the morning from 04:30 to 11:00. Communities use fishing gear to assist in fishing activities. One of the fishing gear used by the fishing community in Ngimboh Village is longline and *cantrang* fishing rods.

Investment is the initial cost incurred by fishermen for *cantrang* and longline fishing gear. This capital is used to purchase business equipment and expedite the operational activities of fishermen. *Cantrang* fishing gear requires

equipment such as *cantrang*, machine, board and iron, sembar rope, span rope, boat, and 30-liter tremors, as well as crew salaries. As for the longline, it requires 20 sets of longline fishing rods, machines, foam boxes, and the crew's salary.

Table 1. Investment of each of the fishing gear

Deskripsi Modal	Fishing gear	
	Cantrang	*Longline*
Fishing gear	IDR. 1.500.000	IDR. 2.500.000
Board and iron	IDR. 800.000	-
Selambar Rope (40 m)	IDR. 300.000	-
Bentang Rope (2 buah)	IDR. 150.000	-
5 GT Boat	IDR. 20.000.000	IDR. 20.000.000
18 PK machine	IDR. 6.500.000	IDR. 6.500.000
Tremos (30 liter)	IDR. 200.000	-
Box foam	-	IDR. 30.000
TOTAL	IDR. 29.450.000	IDR. 29.030.000

Fixed cost

Fixed costs in the *cantrang* and longline fishing gear business include costs for depreciation of vessels, engines, gill nets, longline lines, etc. These costs tend not to change and tend to be constant.

Table 2. Fixed cost of *cantrang* and Bottom Longline

Description	Fishing gear	
	Cantrang	*Longline*
Boat maintenance	IDR. 120.000	IDR. 120.000
Machine maintenance	IDR. 56.000	IDR. 56.000
Boat shrink	IDR. 7.500.000	IDR. 7.500.000
Fishing gear	IDR. 600.000	IDR. 1000.000
Total	**IDR. 8.276.000**	**IDR. 8.676.000**

Variable cost

Variable costs include departure costs (fuel, oil, food) and maintenance costs such as ships, machinery, etc. The following is a breakdown of the variable costs of the *cantrang* and longline fishing gear in Ngimboh Village.

Table 3. Variable cost of *cantrang* and Bottom Longline

Description	Fishing gear	
	Cantrang	*Longline*
BBM (Solar)	IDR. 256.200.000	IDR. 256.200.000
Oli	IDR. 56.000	IDR. 56.000
Food	IDR. 41.472.000	-
Cigarette	IDR. 18.144.000	IDR. 12.096.000
Ice cube	IDR. 1.440.000	-
Total	**IDR. 317.312.000**	**IDR. 268.352.000**

Income

Cantrang and Longline fishery businesses have income from the sale of catches. The caught fish is not further processed and are taken directly to collectors or markets. The income value depends on several factors, such as the type and total weight of fish caught and sold.

The fisherman's monthly income for one year also follows the catch. Thus, it can be concluded that their income fluctuates. Tables and diagrams of the average monthly income of fishermen can be seen below. Variable costs include departure costs (fuel, oil, food) and maintenance costs such as ships, machinery, etc. The following is a breakdown of the variable costs of the *cantrang* and longline fishing gear in Ngimboh Village.

Table 4. Income each of the fishing gear

Description	Income	
	Cantrang	*Longline*
Maximum	IDR. 504.000.000	IDR. 345.600.000
Minimum	IDR. 259.200.000	IDR. 276.480.000
Averages	IDR. 381.600.000	IDR. 345.600.000

Within 12 months, the average income of *cantrang* fishing gear was IDR. 381,600,000 and a long line of IDR. 79,000,000. Overall, longline fishing gear revenue is lower than *cantrang*. *Cantrang* fishermen usually go on fishing trips (trips) 3-5 times a day. Fishermen in Ngimboh Village go out to sea every day except Friday. In one trip, they get an income of IDR. 300,000. So that their income is at least IDR. 259,200,000 and their biggest income can reach IDR. 504,000,000 in a year if they go to sea five times a day.

The average income of longline fishermen is less than that of *cantrang* because longline fishing gear only focuses on certain fish, while the scope of catches for *cantrang* is wider so that the catch is also higher than longline. The fishermen in Ngimboh Village make 1-3 fishing trips using the long line a day. In one trip, fishermen get an income of IDR. 480,000 - 500,000. On average, fishermen go to the sea every day except Friday. The total income of fishermen is at least IDR. 345,600,000 whereas if they travel twice day, their income can reach IDR. 276,480,000 in one year.

Profits

The profits obtained by fishermen from the two fishing gears are influenced by several factors. One of them is including the costs incurred. Therefore, fishermen try to catch fish as much as possible and reduce expenses. That way, they can still benefit from the fishing gear business. The benefits of *cantrang* and longline fishermen can be seen in the following table:

Table 5. Profit each of the fishing gear

Description	Result	
	Cantrang	*Longline*
Income	IDR. 381.600.000	IDR. 345.600.000
Total cost	IDR. 325.588.000	IDR. 277.204.000
Profit	**IDR. 56.012.000**	**IDR. 33.836.000**

The table above shows the advantages obtained by fishermen using *cantrang* and longline fishing gear. It can be seen that the average profit obtained by the *cantrang* is greater than that of the longline. The average profit of *cantrang* is IDR. 56,012,000 while the longline is IDR. 33,836,000. It is because the acceptance of the *cantrang* is greater than the longline. These results are following research conducted by Suherman which states that the benefits of *cantrang* are greater than longlines.

The advantages of each fishing gear are influenced by several factors, one of which is the fishing ground [34]. In a day, fishermen can travel four times. The fishermen in Ngimboh Village do not use assistance to find fish catchers and they tend to use their feelings and intuition.

NPV Analysis

Net Present Value is operating income in the t-th "n" years later deducted by expenses in year t with the interest rate prevailing in that year. The NPV calculation serves to compare the amount of income and expenses at a certain interest rate each year. This study uses interest rates from Bank Indonesia for a certain period of time. 10 years from 2018-2022 according to research from Muttaqin (2021) which compared longline financial analysis. The following is a table NPV calculation of fishing gear business in Ngimboh Village.

$$NPV = \frac{R_t}{(1+i)^t} \ldots\ldots\ldots\ldots\ldots (2)$$

$$NPV(Cantrang) = \frac{56.012.000}{(1+7.5\%)^2} \qquad NPV(Longline) = \frac{33.836.000}{(1+7.5\%)^2}$$

$$NPV = \frac{56.012.000}{1,15562} \qquad NPV = \frac{33.836.000}{1,15562}$$

$$= 48.469.010 \qquad = 29.279.394$$

Table 6. NPV each of the fishing gear

NPV dalam 10 Tahun			
NPV Tahun ke-	Suku Bunga Tahun ke-	$NPV = \frac{R_t(cantrang)}{(1+i)^t}$	$NPV = \frac{R_t(Longline)}{(1+i)^t}$
0	5.75%	-IDR. 29.450.000	-IDR. 29.030.000
1	5.75%	IDR. 52.966.430	IDR. 31.996.217
2	7.5%	IDR. 48.469.010	IDR. 29.279.394
3	7.5%	IDR. 45.087.451	IDR. 27.236.645
4	6.75%	IDR. 43.086.153	IDR. 26.027.692
5	4.75%	IDR. 44.453.968	IDR. 26.853.968
6	4.25%	IDR. 41.185.294	IDR. 24.879.411
7	6%	IDR. 37,341,333	IDR. 22.557.333
8	4.5%	IDR. 47.068.907	IDR. 28.433.613
9	3.5%	IDR. 41.185.294	IDR. 24.879.411
10	3.5%	IDR. 30,607,650	IDR. 18.489.617
NPV		IDR. 402.001.490	IDR. 310.287.840

Based on the table above, within 10 years, the average calculation of the NPV value of fishermen in Ngimboh Village is IDR. 402,001,490 for *cantrang* and IDR. 310,287,840 for longlines. The NPV value shows a positive value. It means that both fishing gears have the feasibility to run. The following research from Karningsih which compared *cantrang* and payang fishing gear. Where the NPV value for *cantrang* is positive so that the business is feasible to run (Karningsih: 2014). NPV values of both gears can be seen in the diagram below:

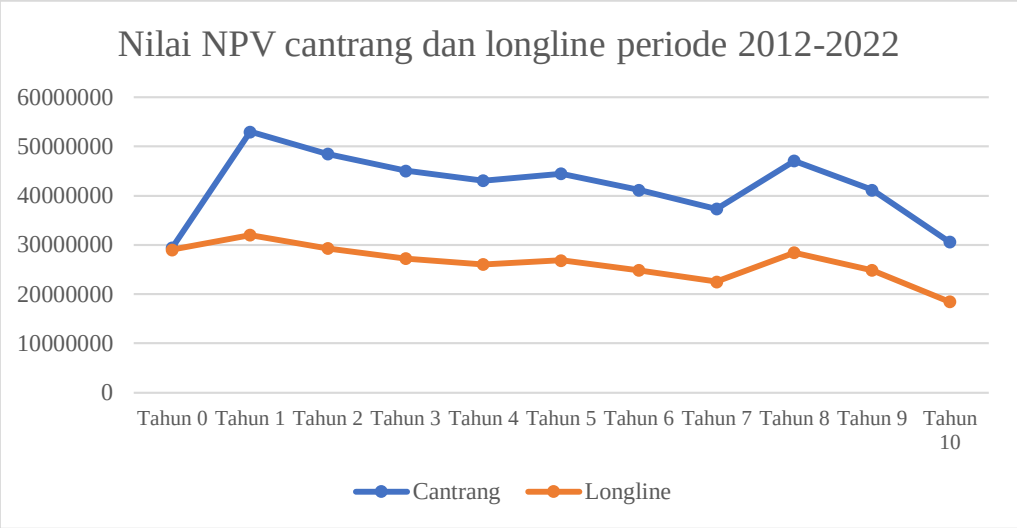

Figure 1. Graph of NPV

In year 0, the business is still just starting so it still doesn't get results or income. From year 1 to year 10, the fishermen do their business. The costs incurred for this business consist of fixed and variable costs, as well as their efforts starting to get results (income). This NPV value calculation helps fishermen to find the annual profits progress for each invested capital.

IRR Analysis

IRR (Internal Rate of Return) is an average calculation analysis used to determine the ability of a business to generate revenue or profits every year. IRR also provides an overview of the interest rate received has a constant value with the present value of the initial capital outlay or investment (Puspitasari: 2021).

$$IRR = i_1 \frac{NPV_1}{NPV_1 - NPV_2} \; x \; (i_2 - i_1) \; \ldots\ldots\ldots\ldots\ldots (3)$$

$$IRR\,(cantrang) = i_1 \frac{NPV_1}{NPV_1 - NPV_2} \; x \; (i_2 - i_1)$$

$$IRR\,(cantrang) = 5,75\% \frac{29.450.000}{30.607.650 - 29.450.000} \; x \; (5,75\% - 3,5\%)$$

$$= 62,9\%$$

$$IRR\,(longline) = i_1 \frac{NPV_1}{NPV_1 - NPV_2} \; x \; (i_2 - i_1)$$

$$IRR\,(longline) = 5,75\% \frac{29.030.000}{29.030.000 - 18.489.617} \; x \; (5,75\% - 3,5\%)$$

$$= 65,3\%$$

The value of IRR in each fishing gear can be seen in the table below:

Table 7. Value of IRR each fishing gear

Nilai IRR			
NPV tahun ke-	Suku bunga Tahun ke-	NPV *Cantrang*	NPV *Longline*
0	5.75%	IDR. 29.450.000	IDR. 29.030.000
10	3.5%	IDR. 30.607.650	IDR. 18.489.617
IRR		62,9%	65,3%

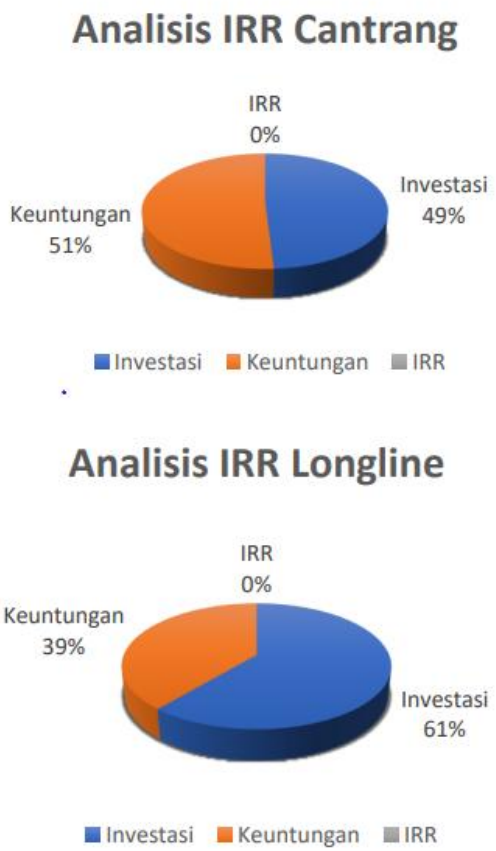

Figure 2. IRR analysis

The IRR value of Ngimboh Village for *cantrang* and longline fishing gear is 65.3%. This means that the IRR value of the two fishing gears is greater than the specified discount rate, which is 3.5% or the amount of the prevailing interest rate. With this it can be concluded that the longline fishing effort is feasible to run.

Payback Period

$$PP = \frac{Investasi}{Kas\ bersih\ per\ tahun}\ x\ 1\ tahun \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

$$PP(Cantrang) = \frac{Investasi}{Kas\ bersih\ per\ tahun}\ x\ 1\ tahun$$

$$PP = \frac{29.450.000}{56.012.000}$$

$$= 0{,}52$$

$$PP(Longline) = \frac{Investasi}{Kas\ bersih\ per\ tahun}\ x\ 1\ tahun$$

$$PP = \frac{29.030.000}{33.836.000}$$

$$= 0{,}85$$

Table 8. Payback period each fishing gear

Analisis PP		
Keterangan	*Cantrang*	*Longline*
Investasi (Modal)	IDR. 29.450.000	IDR. 29.030.000
Keuntungan	IDR. 56.012.000	IDR. 33.836.000
PP	0,52	0,85

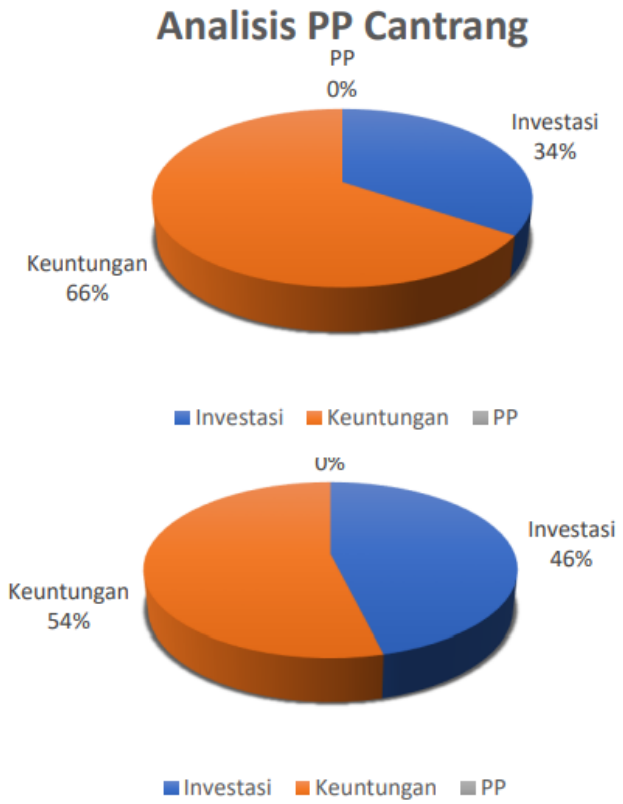

Figure 3. graphic PP analysis

Net B/C (Benefit Cost Ratio)

The B/C ratio is one of the financial analyzes that functions of the comparison between receipts and costs resulting from the division of revenue (business profits) with expenses. Based on Regina's research which focuses on the feasibility of capturing fisheries on slerek boats, the B/C ratio is 4.74. It shows that effort is feasible because the value is greater than 1. As for research tools, another catch is the hand-line which was carried out by Rahmawati, the value of the B/C ratio less than 1, namely as much as 0.07. It means that the business is not feasible to continue because the value is small.

$$(B\ /\ C\ Ratio) = \frac{Total\ Penerimaan}{Total\ Biaya} \quad \ldots\ldots\ldots\ldots\ldots\ldots (4)$$

$$(B/\ C\ Ratio)cantrang = \frac{Total\ Penerimaan}{Total\ Biaya}$$

$$(B/\ C\ Ratio)cantrang = \frac{381.600.000}{325.588.000}$$

$$(B/\ C\ Ratio)cantrang = 1,17$$

$$(B/\ C\ Ratio)longline = \frac{Total\ Penerimaan}{Total\ Biaya}$$

$$(B/\ C\ Ratio)cantrang = \frac{345.600.000}{277.204.000}$$

$$(B/\ C\ Ratio)cantrang = 1,24$$

The counting process of B/C ratio can be seen in the table below:

Table 9. B/C ratio

Analisis B/C *ratio*		
Keterangan	*Cantrang*	*Longline*
Pendapatan	IDR. 381.600.000	IDR. 345.600.000
Total biaya	IDR. 325.588.000	IDR. 277.204.000
B/C *Ratio*	1,17	1.24

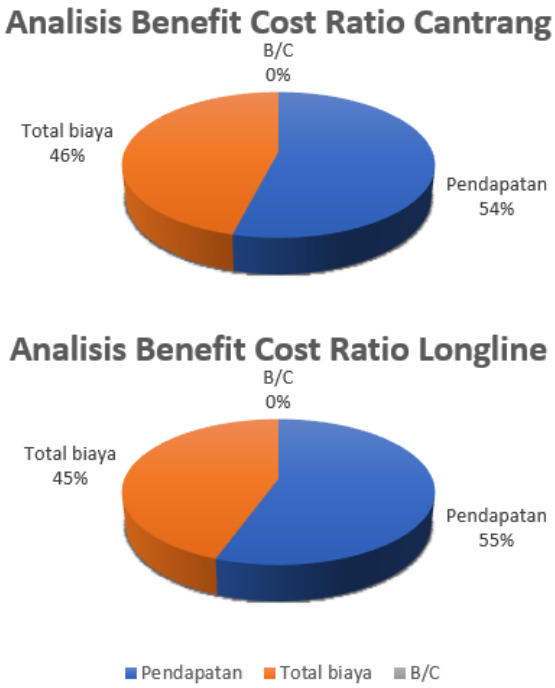

Figure 4. Analysis graphic of B/C ratio each fishing gear

The results of the B/C ratio of each fishing gear in Ngimboh Village have different values. In the longline fishing gear, the B/C value is 1.24, it means that every 1 rupiah spent will generate an income of 1.24 rupiah. This value is high, and it can be concluded that the B/C ratio of longline capture fisheries in Ngimboh Village is good. The next fishing gear is *cantrang* which has a B/C ratio value of 1.17. It can be inteIDRreted that every 1 rupiah issued can be 1.17. So it can be concluded that this value is high because it is more than 1. The comparison of the calculations of the two fishing gears can be seen in the table below.

4. Conclusion

The results of the financial analysis of the *cantrang* and longline fishing gear businesses in Ngemboh Village in general are feasible to develop and fast for capital returns. It is based on the profits of the *cantrang* business worth IDR. 56,012,000 and a longline of IDR. 33,836,000; NPV value *cantrang* in 10 years of IDR. 402,001,490 and a long line of IDR. 310,287,840; The *cantrang* IRR value is 62.9%, while the longline IRR value is 65.3%; The *cantrang* B/C value is 1.17, while the longline B/C value is 1.24; PP value (Payback Period) of both fishing gear is less than one year so that the *cantrang* and longline fishing gear businesses are feasible to develop.

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