

ANALYSIS OF INCOME FROM POLE AND LINE CAPTURE FISHERIES IN SOUTHEAST MINAHASA REGENCY

Analisis Pendapatan Perikanan Tangkap Pole and Line di Kabupaten Minahasa Tenggara

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ABSTRACT

Belang is a sub-district in Southeast Minahasa Regency, North Sulawesi, Indonesia. Most residents work as fishermen because the area is located on the southern coast. Skipjack (*Katsuwonus pelamis*) is a leading economic activity in the North Sulawesi fisheries sector, which is usually caught with pole and line (huhate) fishing gear. This study aims to assess the income of skipjack fisheries using the pole and line method in Belang Harbour, Southeast Minahasa Regency. The research was conducted from October to December 2023. The research method is by conducting interviews and observing the income of pole and line fisheries and analysed using Microsoft Excel. The results showed that the profit sharing system applied in each business unit at Belang Harbour was in accordance with the collective agreement. Sales revenue is reduced by total costs, then divided into 50% for the owner and 50% for the crew. The crew's share of 50% will be divided again according to their role/position on the ship. The skipper receives 30%, the KKM receives 20%, the boy-boy receives 20%, and the angler receives 30%. Variable and fixed costs for each pole and line business unit varied. The average variable cost for the five pole and line businesses in Belang Harbour was IDR 346,470,000, while the average fixed cost was IDR 48,315,000. The average revenue of the pole and line business at Belang Harbour for three months reached Rp 703,500,000, while the average income was Rp 307,815,000.

Key words: Revenue, Pole and Line, Skipjack, Southeast Minahasa

ABSTRAK

Belang adalah sebuah kecamatan di wilayah Kabupaten Minahasa Tenggara, Sulawesi Utara, Indonesia. Penduduk kebanyakan berprofesi sebagai nelayan karena daerah ini terletak di pesisir pantai sebelah selatan. Ikan cakalang (*Katsuwonus pelamis*) merupakan potensi

unggulan di Sulawesi Utara, yang biasanya ditangkap dengan alat tangkap *pole and line* (huhate). Penelitian ini bertujuan untuk mengkaji pendapatan perikanan tangkap ikan Cakalang dengan metode *pole and line* di Pelabuhan Belang, Kabupaten Minahasa Tenggara. Penelitian dilakukan bulan Oktober hingga Desember 2023. Metode penelitian dengan melakukan wawancara dan observasi pendapatan usaha perikanan pole and line dan dianalisis menggunakan microsoft excel. Hasil penelitian menunjukkan bahwa sistem bagi hasil yang diterapkan di setiap unit usaha di Pelabuhan Belang sesuai dengan kesepakatan bersama. Penerimaan hasil penjualan dikurangi dengan biaya total, kemudian dibagi menjadi 50% untuk pemilik dan 50% untuk ABK. Bagian ABK sebesar 50% tersebut akan dibagi kembali sesuai dengan peran/posisi mereka di atas kapal. Nahkoda menerima 30%, KKM menerima 20%, boy-boy menerima 20%, dan pemancing menerima 30%. Biaya variabel dan biaya tetap pada setiap unit usaha pole and line bervariasi. Rata-rata biaya variabel untuk lima unit usaha pole and line di Pelabuhan Belang adalah Rp 346.470.000, sedangkan rata-rata biaya tetapnya adalah Rp 48.315.000. Penerimaan rata-rata usaha pole and line di Pelabuhan Belang selama tiga bulan mencapai Rp 703.500.000, sedangkan pendapatan rata-rata adalah Rp 307.815.000.

Kata Kunci: Pendapatan, *Pole and Line*, Ikan Cakalang, Minahasa Tenggara

INTRODUCTION

The potential of Indonesia's marine resources has been utilized in various economic activities, one of which is capture fisheries. Capture fisheries itself is the most commonly discussed activity compared to other activities in the resource economy. Fish resources are marine potential that is renewable and common property. This allows everyone to have the right to exploit these resources because they believe that capture is not the main factor in the decline in fish populations due to the large stock of fish available (Sudirman & Karim, 2008). The waters in Eastern Indonesia have the potential for a very diverse wealth of fish resources. Generally, the type of fish that is widely caught by fishermen in these waters is skipjack tuna. Skipjack tuna is one of the export commodities, so it is important to pay attention to the process of capture to production, so that the sustainability of skipjack tuna resources can be maintained (Rahmat & Yahya., 2016).

Southeast Minahasa Regency has quite large potential for fishery resources, Belang Waters and the surrounding area are the center of skipjack and tuna fishing activities in the waters of North Sulawesi. The production of skipjack and tuna fishing in North Sulawesi including Belang Waters was recorded at 60,190.3 tons (Kekenusa & Marline, 2016). However, many fishermen still face obstacles in increasing their income. Factors such as the availability of live bait, high operational costs, and changes in market prices often affect fishermen's income. In addition, variations in fishing seasons and uncertainty of catch results add to the complexity of calculating reliable income.

The income of Pole and Line fishermen is greatly influenced by the catch, operational costs, and selling price of fish. Therefore, income analysis is important to evaluate whether this business is economically feasible and to provide an overview of the factors that need to be improved so that fishermen's income can be increased. This study is not only important for the welfare of the fishermen themselves, but also for the local government in formulating more effective fishery resource management policies. Based on the results of the field survey that I conducted, the pole and line fishery business in Belang Port, Southeast Minahasa Regency, this business is still managed simply, although the investment costs in this business are quite large. This study aims to analyze the income of Pole and Line capture fisheries in Southeast Minahasa Regency, and to identify the factors that influence the variation in fishermen's income. This

study is expected to provide deeper insight into the potential of Pole and Line fishery businesses in supporting the economy of coastal communities and as a basis for making more appropriate fishery policy decisions.

RESEARCH METHODS

The implementation of this research activity was in Borgo Village, Belang District, Southeast Minahasa Regency, North Sulawesi Province. It was carried out from October to December 2023 by participating in the Pole and Line ship operation activities at the Belang Fishing Port, Southeast Minahasa Regency. Data collection is an activity carried out in the field to answer research problems according to Makbul (2021). The data collected consists of primary data and secondary data. Primary data was obtained directly from the field through interviews with informants, while secondary data came from previous research studies that discussed pole and line capture fisheries income. Analysis of the use of costs and levels of business income using quantitative descriptive techniques is by using the following formula (Tanamal, 2019):

1. The mathematical formula for analyzing the use of total costs is as follows:

$$TC = FC + VC$$

Information:

TC: Total cost (Rp/trip)

FC: Fixed cost (Rp/trip)

VC: Variable cost

2. Income analysis is carried out based on the equation below:

$$\Pi = TR - TC$$

$$TR = Q \times P$$

Information:

Π : Income (Rp/trip)

TR : Total revenue (Rp/trip)

Q : Production catch (Kg/trip)

P : Price (Rp/trip)

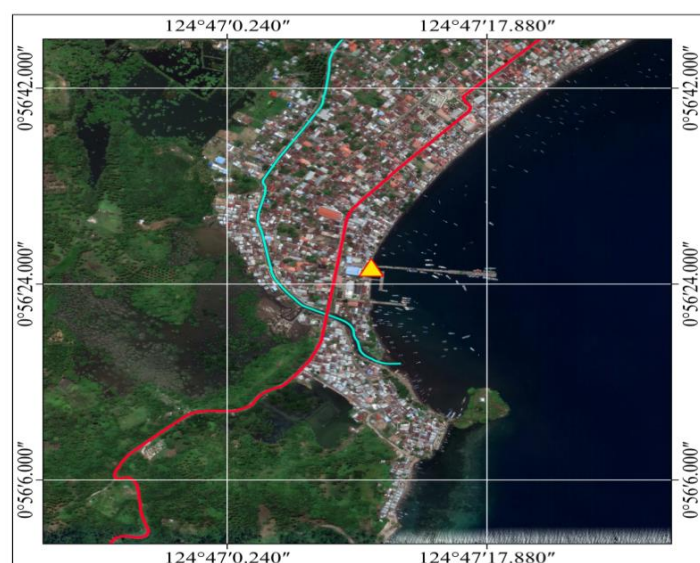


Figure 1. Map of research location

RESULT

Potential of Skipjack Tuna Resources in Belang Waters

Minahasa Tenggara Regency has waters that are potential for fisheries, both marine fisheries and land-based general fisheries. This region has very large fish resources, supported by a wide coastal area, with an ocean area of around 4 miles or 306.39 km² and a coastline length of 102 km. Minahasa Tenggara Regency is included in the Republic of Indonesia State Fisheries Management Area (WPPNRI) 716, which has potential fisheries resources, such as bigeye tuna, yellowfin tuna, and skipjack tuna (*Katsuwonus pelamis*) (North Sulawesi Province Marine Affairs and Fisheries Service, 2011). Every fisherman always tries to ensure that the production or catch he manages can provide maximum results, so that he can meet the needs of his family. Production is the total amount of fish caught by pole and line fishermen during one fishing trip (kg/trip). Pole and line fisheries business promises quite large profits because of its high productivity and has a fairly far range of fishing operations, so it has a great possibility of getting a lot of catches.

The potential catch of skipjack tuna in Belang Waters reaches 6,695 tons. Meanwhile, based on the calculation of the number of catches for three months, the potential for skipjack tuna caught is 167.5 tons, calculated from October to December 2023. Therefore, the utilization of marine biological resources through skipjack tuna fishing activities always receives important attention from the government, education, entrepreneurs, and traditional fishermen. This effort is one of the goals of fisheries development in Indonesia, with the aim of improving the welfare of all Indonesian citizens, especially coastal communities in Southeast Minahasa Regency. Empirically, it can be explained that the amount of skipjack tuna catch obtained by fishermen does not depend on the size of the pole and line vessel used. This is supported by the opinion of the respondent fishermen who said that the size of the pole and line vessel used so far is between 24-30 GT.

Pole and line fishermen in Belang Port generally operate in Belang Waters and the Maluku Sea. Fishing areas are usually located near fish aggregating devices (FADs) or in waters where there are schools of fish, which are usually identified by the presence of birds flying above the sea surface. Based on information from the captain and crew of pole and line vessels in Belang Port, the skipjack tuna fishing area is located around Belang Waters. The coordinates of the first fishing location are at 0°32'44.97"N and 125°17'35.17"E, with a distance of 44.84 miles (83 km) from the port (fishing base). Meanwhile, the coordinates of the second location are at 0°10'15.49"N and 124°47'17.20"E, with a distance of 52.07 miles (96.43 km).

Pole and Line Fishing Vessels and Gear

At Belang Port, there are five pole and line ships operating, namely Km. Nelayan 21, Km. Arvina Majo, Km. Belvania 01, Km. Belvania 02, and Km. Aldira 36. These ships are between 20 GT and 30 GT and are made of wood coated with fiberglass. These ships have several differences compared to pole and line ships in general. In particular, the ships at Belang Port are modified at the stern to be used as a seat for anglers. On the stern wall, a few centimeters below the angler's seat, there is a water sprayer. Meanwhile, on the ship's deck there are two bait hatches located in the middle. This hatch is equipped with water circulation to increase oxygen levels, which works by opening the flow of seawater at the bottom of the bait hatch. In addition, the stern of the ship has a special design that allows the stern to be lifted when the live bait storage hatch is filled, so that the caught fish can slide to the middle of the ship, near the fish storage hatch.

The use of pole and line can be seen from several elements including ship facilities, equipment and supplies, handling techniques on board and the role of the crew team (Rossarie et.al. 2019). The description of the Pole and Line fishing gear used in one unit of fishing gear at Belang Port consists of a fishing rod, main line, secondary line and fishing hook. According to Kein & Al Ayubi, (2022) Pole and line is a fishing gear consisting of bamboo as a fishing rod, string (fishing line), and a hook that is not hooked so that the fish can quickly escape from the fishing line, in the operation of this fishing gear is equipped with live bait to adjust to the habits of skipjack tuna that snatch their prey. Skipjack tuna is a large pelagic and can migrate far (highly migratory) throughout Indonesian waters (Firdaus, 2018; Agusliana, 2019). The fishing operation area of pole and line fishermen at the Bitung Ocean Fisheries Port is around WPP 716 (Sulawesi Sea). (Sutrisno *et al.*, 2017). The success of a skipjack tuna fishing operation using Pole and line fishing gear depends on the availability of bait. Live bait is very important, because live bait functions as an attractant to attract schools of skipjack tuna closer to the boat (Jamal, 2011). The description of the fishing gear used is as follows:

1. Fishing Rod
 Joron or pole: This part is made of old bamboo that has good elasticity. The bamboo used is 2–2.5 m long and 3–4 cm in diameter. The length of the tip is approximately 1–1.5 cm.
2. Main line
 Usually made from 4-5 mm Polyethylene synthetic material with a length of around 1.5–2 m which is appropriate to the length of the rod used.
3. Secondary line
 A white rope made of 3-4 mm monofilament material is used as a secondary rope with a length of about 20 cm. This aims to prevent the main fishing line from breaking due to being bitten by skipjack tuna.
4. Hook
 The model of the fishing hook is not hooked back like most fishing hooks. The fishing hook number used is 2.5–2.8. A small hose measuring 2 cm to 2.5 cm long and 8 mm in diameter is placed on the hook. In addition, on the outside of the hose there is a ring that can be used to tie a secondary rope. The fishing hook is decorated with colorful pearl feathers, tassels, and raffia rope wrapped around the hook.

Operational Costs

Fixed Costs

Fixed costs are costs that do not change even if the amount of production increases or decreases, as in the study (Bidul *et.al.*, 2022). Fixed costs are costs that remain constant over time and are not affected by production volume. The fixed costs of fishing efforts with pole and line in Belang Port include maintenance costs, licensing costs and post-production Non-Tax State Revenue costs which are calculated by referring to PERMEN-KP No. 38 of 2021 with a rate for fishing fleets of 5-60 GT of 5% all included in the fixed costs of the five pole and line vessels. Fixed costs from October to December on the 5 pole and line vessels can be seen in Table 1.

Table 1. Fixed Costs of Pole and Line Vessels at Belang Port in October-December 2023

Unit	Fixed Costs			Total Fixed Costs
	Maintenance	Licensing	Non-tax Revenue 5%	
1	Rp.7.500.000	Rp.1.500.000	Rp.21.525.000	Rp.30.525.000

2	Rp.12.000.000	Rp.1.500.000	Rp.37.275.000	Rp.50.775.000
3	Rp.15.000.000	Rp.1.500.000	Rp.30.450.000	Rp.46.950.000
4	Rp.8.700.000	Rp.1.500.000	Rp.28.350.000	Rp.38.550.000
5	Rp.15.000.000	Rp.1.500.000	Rp.58.275.000	Rp. 74.775.000
Total	Rp.58.200.000	Rp.7.5000.000	Rp.175.875.000	Rp.241.575.000
Average	Rp.11.640.000	Rp.1.500.000	Rp.35.175.0000	Rp.48.315.000

Source: Data Primer, 2024

Variabel Costs

Variable costs are costs that must be incurred every time a fishing operation is carried out (Lexon *et al.*, 2020 in Marasabessy., 2023). In this study, the variable costs of each pole and line business unit in Belang Port include components of fuel prices (bio solar), ice block prices, bait purchases, and crew consumption purchases, as stated by Bidul *et al.*, (2021). Variable costs or operational costs are costs that are directly related to the production process. Variable costs are costs incurred during fishing operations. Variable costs for fishing equipment include consumption costs, fuel (BBM), ice, drinking water. Variable costs can be seen in Table 2.

Table 2. Variable costs (variables) of pole and line vessels in Belang Port.

Unit	Variabel Costs
1	Rp 313.3000
2	Rp 331.000.002
3	Rp 377.350.000
4	Rp 312.100.000
5	Rp 398.600.00
Average	Rp 346.470.000

Source: Data Primer, 2024

Pole and Line Business Revenue

The total revenue value is obtained from the multiplication of the catch production by the selling price (Kg), expressed in rupiah (Mimiatin *et al.*, 2016). The total revenue of the capture fisheries business using pole and line vessels during October to December 2023 can be seen in Table 3.

Table 3. Total revenue of Pole and Line business at Belang Port.

Unit	Production (kg/3 month)	Price (Rp/kg)	Revenue (Rp/3 bulan)
1	20.500	21.000	430.500.000
2	35.500	21.000	745.500.000
3	29.000	21.000	609.000.000
4	27.000	21.000	567.000.000
5	55.500	21.000	1.165.500.000
Total	167.500	105.000	3.517.500.000
Average	33.500	21.000	703.500.000

Source: Data Primer, 2024

Pole and Line Business Income

Income from pole and line is calculated as the difference between total revenue and total operational costs. The amount of income is determined by the amount of total revenue and total operational costs incurred each month. According to (Waileruny *et al.*, 2022) income is the result of what an entrepreneur does. The goal of every business activity is to earn income, as is the case with pole and line businesses in Belang Port, every fisherman wants income from the sale of production. The results of pole and line business income from October to December 2023 can be seen in Table 4.

Table 4. Pole and Line Business Income in Belang Port

Unit	Tota Costs	Revenue	Income
1	Rp. 343.825.000	Rp. 430.500.000	Rp. 86.675.000
2	Rp. 381.775.000	Rp. 745.500.000	Rp. 363.725.000
3	Rp. 424.300.000	Rp. 609.000.000	Rp. 184.700.000
4	Rp. 350.650.000	Rp. 567.000.000	Rp. 216.350.000
5	Rp. 477.875.000	Rp. 1.165.500.000	Rp. 687.625.000
Total	Rp. 1.978,425.000	Rp. 3.517.500.000	Rp.1.539.075.000
Average	Rp. 395.685.000	Rp. 703.500.000	Rp. 307.815.000

Source: Data Primer, 2024

Profit Sharing System

According to Loupatty, (2017), the profit sharing system in fisheries, especially capture fisheries, occurs due to the utilization of production factors (capital and labor) from two perspectives, namely fishermen (ship owners) and crew. Based on the results of research on five pole and line ships in Belang Port, the profit sharing system implemented has been in accordance with the agreement. The proceeds from sales are reduced by the total cost, then divided into 50% for the owner and 50% for the crew. The 50% portion of the crew will be rounded up and divided again according to their role/position on the ship. The profit sharing of the five ships at the research location can be seen in Table 5 and Table 6.

Table 5. Distribution of pole and line business revenue at Belang Port in October-December 2023

Unit	Income	Owner 50%	Crew 50%
1	Rp 86,675,000.	Rp 43,337,500.	Rp 43,337,500.
2	Rp 363,725,000.	Rp 181,876,000.	Rp 181,876,000.
3	Rp 184,700,000.	Rp 92,350,000.	Rp 92,350,000.
4	Rp 216,350,000.	Rp 108,175,000.	Rp 108,175,000.
5	Rp 687,625,000.	Rp 343,812,500.	Rp 343,812,500.
Total	Rp 1,539,075,000.	Rp 769,551,000.	Rp 769,551,000.
Average	Rp 307,815,000.	Rp 153,910,200.	Rp 153,910,200.

Source: Data Primer, 2024

The amount of income sharing received by owner fishermen and ABK fishermen in pole and line fishing businesses is influenced by the applicable profit-sharing system and the number of fishermen involved in the fishing business, where the applicable profit-sharing system has been institutionalized in community life. The profit-sharing system applied to pole and line fishermen is 50% for ABK fishermen, and 50% for ship owners from the net income

received in one fishing trip. The income received by ABK fishermen is 50%, which will then be divided according to the number of fishermen and the positions of each fisherman, where the highest positions are Captain, KKM, and boy-boy (Mimiatin *et al.*, 2016).

Table 6. Profit sharing for each pole and line business unit at Belang Port in October-December 2023

Unit	Position	Amount (people)	Part	Value (Rp/3 Month)
1	Captain	1	30%	13.001.100.
	KKM	1	20%	6.067.180.
	Boy-boy	1	20%	4.853.744.
	Angler	14	30%	5.824.492.
<i>Total</i>		<i>17</i>	<i>100%</i>	<i>29.746.516.</i>
2	Captain	1	30%	54.558.750.
	KKM	1	20%	25.460.750.
	Boy-boy	1	20%	20.368600.
	Angler	16	30%	24.442.320.
<i>Total</i>		<i>19</i>	<i>100%</i>	<i>124.830.420.</i>
3	Captain	1	30%	27.705.000.
	KKM	1	20%	12.929.000.
	Boy-boy	1	20%	10.343.200.
	Angler	14	30%	12.411.840.
<i>Total</i>		<i>17</i>	<i>100%</i>	<i>63.389.040.</i>
4	Captain	1	30%	32.452.500.
	KKM	1	20%	15.144.500.
	Boy-boy	1	20%	12.115.600.
	Angler	14	30%	14.538.720.
<i>Total</i>		<i>17</i>	<i>100%</i>	<i>74.251.320.</i>
5	Captain	1	30%	103.143.750.
	KKM	1	20%	48.133.750.
	Boy-boy	1	20%	38.507.000.
	Angler	20	30%	46.208.400.
<i>Total</i>		<i>23</i>	<i>100%</i>	<i>235.992.900.</i>

Source: Data Primer, 2024

DISCUSSION

Fixed Costs

The table above shows that the average maintenance cost of the five pole and line business units in Belang Port is IDR 11,640,000, the average licensing cost is IDR 1,500,000 and the average cost of non-tax state revenue post-production is IDR 35,175,000. So the average fixed cost of the five pole and line business units in Belang Port is IDR 48,315,000. The highest fixed cost is in unit 5 at IDR 74,775,000 and the lowest is in unit 1 at IDR 30,525,000.

The different fixed costs in the five pole and line business units are due to differences in ship size and costs such as maintenance, licensing and PNBP which are not the same for each ship. Based on research by Haulussy, (2019) and also Gandaria *et al.*, (2023) this

difference is due to differences in ship dimensions so that the costs incurred are also not the same.

Variable Costs

In the Pole and Line fishing business, variable costs are a very important component because they directly affect the net income of fishermen. Variable costs include expenses incurred every time fishermen carry out fishing activities, and can vary depending on factors such as the number of fishing trips, weather conditions, availability of resources, and fluctuations in raw material prices.

For the variable costs of pole and line fishing gear, it can be seen in Table 6 that the variable costs of each pole and line business unit are different. The average variable cost at Belang Port is IDR 346,470,000. The cost of fishing for pole and line fishing gear at Belang Port is relatively different because the fishing areas are different, the number of ship trips is not the same, ship needs such as fuel, ice blocks, bait and other basic materials. Similarly, in the study (Haulussy, 2019), it was stated that the variable costs of each pole and line business unit can vary because the number of trips for each unit is not the same, ship needs such as fuel, ice blocks, bait and other basic materials. Variable costs in economic theory are expenses that change along with changes in production or operation volume. In the context of fisheries, this theory applies to factors that change based on fishing frequency, such as fuel, bait, and labor. The theory also suggests that optimizing variable costs can increase profits by reducing expenses without reducing catches. In addition, the success of variable cost management is highly dependent on external factors such as the availability of natural resources and market conditions.

Pole and Line Business Acceptance

The table above shows that the total monthly income received by the ship unit varies. The total income of the pole and line business is IDR 3,517,500,000, with an average income of the pole and line business of IDR 703,500,000. Meanwhile, the highest income is in unit 5 of IDR 1,165,500,000 and the lowest income is in unit 1 of IDR 430,500,000. The difference in total income is influenced by the different amount of catch in each pole and line business unit. Based on research (Bidul *et al.*, 2022) states that the total income of each ship varies due to differences in the amount of catch per trip during a month, as well as differences in fishing areas.

Pole and Line Business Income

The table above shows that the monthly income received by the ship unit varies. This is influenced by the total costs and total receipts that are different in each pole and line business unit. The total income of the fisheries business was recorded at IDR 1,539,075,000, and the average business income was IDR 307,815,000. Meanwhile, the highest income was obtained by unit 5 of IDR 687,625,000 and the lowest income was in unit 1 of IDR 86,675,000. This income has been reduced by the total income and total costs. The difference in income in each pole and line business unit on average each month is thought to be influenced by the catch production per trip. Based on a quote from (Mimiatin *et al.*, 2016) that the low income obtained was due to the low production of fish catches which resulted in a decrease in the number of catches.

Profit Sharing System

Based on Table 6, it can be seen that the income value of each unit is good for the business, owner, and crew. This is due to the difference in the amount of catch and also the number of fishing operations or fishing trips during October-December. In addition, the profit-sharing system is also a mutual agreement between the owner and the crew. Income for each crew is divided according to the stratification of positions on the ship. Just as Syafril et al., (2022) said citing Saleh et al., (2022) from the income, the ship owner gets 50%, which has been received net, while the remaining 50% is rounded up again to 100% and will then be divided for the crew according to their role and position on the ship. Table 6 shows the results of the division for each crew in five different units, depending on income, position, and number of crew in each unit. Each unit consists of one captain, one KKM, and one boy-boy. The captain receives 3 parts (30%), the KKM receives 2 parts (20%), the boys receive 2 parts (20%), and the anglers receive 3 parts (30%). The profit sharing system or wages for the handline fishing business in Arakan Village is the income minus the operational costs, then the remainder is divided by 2 between the owner and the workforce which is done once a week. The profit sharing for the owner is 50% and the workforce is 50%, then the results of the workforce are divided equally according to the number of workers, which is two people in each handline fishing business. The business owner also gets a share because the owner is included in the workforce calculation (Antarini et al., 2018). The profit sharing system that applies to pole and line fishing gear at the research location is 50:50, namely the ship owner gets 50% and the crew 50% of the results obtained for one month with an average of 15 fishing trips (Syafril, 2022).

CONCLUSION

Based on the results of the study, it can be concluded that the variable costs and fixed costs of each pole and line business unit are different. The average variable cost for five pole and line business units in Belang Port is IDR 346,470,000, while the average fixed cost is IDR 48,315,000. The average income of pole and line businesses in Belang Port for three months reached IDR 703,500,000, while the average income was IDR 307,815,000. The profit sharing system implemented has been in accordance with the mutual agreement. The income from sales is reduced by the total cost, then divided into 50% for the owner and 50% for the crew. The crew's share is divided again for the captain by 30%, the KKM receives 20%, the boys receive 20%, and the anglers receive 30%. The study shows that the pole and line fishing method in Southeast Minahasa Regency produces stable and significant income. Consistent catches and competitive selling prices for fish support good income potential for fishermen

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