



Identification of wage distribution and wage gaps for purse seine crew members

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ABSTRACT

Even though the government has established regulations regarding wages, the reality is that the wages received by crew members of fishing vessels are still not in accordance with regulations. Therefore, the purpose of this study is to identify the distribution of wages on purse seine vessels and to find out the gap between the wages received by crew. To achieve this goal, this study uses catch data for three fishing trips from March to May 2022, as well as crew wages from selling catches on the purse seine vessel PT Hasil Laut Sejati. The secondary data used is the productivity of the annual catch of purse seine vessels as well as supporting data from references related to the topics discussed. The data obtained were then analyzed using descriptive analysis, income analysis, and gap analysis. The average wage received by purse seine vessels crew is around Rp. 677,649.67 – Rp. 1,190,134.00, the wages received are far below the City Minimum Wage, with a gap of 71.57% - 83.81%. The wages of Batam City purse seine crew are not in accordance with the City Minimum Wage of Batam City. Economic conditions and wages for crew members significantly require crew to continue working, to make ends meet.

Introduction

Wages are an important component in supporting the economy, one of which is the economy of fishermen/vessel crew (ABK). The amounts of wages received by crew in various regions is different, depending on the agreement with the ship owner. The amounts of wages received by hand line crew at Hila Village Central Maluku District is IDR. 7,697,674 (Saiful, 2022); The income of fishermen in Gebang District, Cirebon Regency is IDR. 1,000,000 – IDR. 3,000,000 per month (Sukono *et al.*, 2021), the income of crew in Kulonprogo, East Java is IDR 2,840,000 per month (Pramono and Sutono, 2018). The difference in wages received by crew is also influenced by the catch they get.

Research related to the income of crew/fishermen has been carried out a lot. For example, Guilen *et al.* (2017) using the remuneration compilation method and bio-economy states that crew wages can be increased through remuneration; Outeiro *et al.* (2018) using the operating cost calculation method states that the wages of fishermen/crew in several countries

are still below the state minimum wage. Fishermen in Cirebon also still live below the poverty line with an average income below the Regional Minimum Wage (UMR) (Sukono *et al.*, 2021). Furthermore, Pramono and Sutono (2018) using a descriptive method stated that the income of Kulonprogo fishermen per month is greater than the Regional Minimum Wage (UMR) of Kulonprogo Regency. This is different compared to other regions, where fishermen's income is generally lower than their minimum wage. Another study was conducted by Rikayana and Susilawati (2021) using the multiple linear regression method. The results showed that fishermen's income was affected by catches and labor costs, and Agunggunanto (2011) using the descriptive method stated that low fishermen's income causes them to live in poverty. Fishermen's lifestyle is influenced by nature, and fishermen's economic level is at a low social level (Rusdiana *et al.*, 2020; Gao *et al.*, 2021). Little income, great need also causes fishermen in Malaysia to be in a critical level and need government assistance (Solaymani and Kari, 2014). Fishermen

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have more optimistic thoughts about a better life in the future (Anna et al., 2019).

Although many studies related to income have been carried out, most of the research is limited to small fishermen. Even though big fishing is also a risky, dangerous job that needs attention. Because industrial-scale fishermen/crew are fishermen whose welfare and safety need to be considered, considering that the work they do is very risky (Pramuditya et al., 2020).

Ridha (2017) stated that what has a big influence on the income of outboard motor boat fishermen in Idi Rayeuk District is the price of fish and the amount of catch. Leasiwal (2017) also believes that the factor that influences fishermen's income specifically is the use of the type of fishing gear (fishing technology). Safa'ah et al. (2018) states that the price of fish received and the amount of operational costs influence fishermen's income. Laapo et al., (2021) increasing catches must be followed by improvements in transportation infrastructure to fisheries production centers to increase fish prices for fishermen. One of the bases for providing crew wages is Minister of Maritime Affairs and Fisheries Regulation Number 42 of 2016 article 26 which states that the minimum salary for fishing vessel crew is at least twice the standard provincial or regional minimum wage.

The aim of this research is to identify the distribution of wages on purse seine vessels and to find out the gap between the wages received by the crew and the regulations relating to the fishery sharing system. The novelty of this research is the object that discussed is industrial scale fishermen/crews as well as a combination of gap analysis and catch wage analysis, so that more comprehensive and informative results are obtained. Because generally the objects discussed are small-scale fishermen. Companies should pay more attention to the welfare of crew, which is still far below the minimum wage, so that the economy of crew is getting better.

Materials and Methods

Location and time of research

The research was conducted from February to May 2022, on 8 purse seine vessels owned by PT. Hasil Laut Sejati, which is located in Batam City, Riau Islands. The research location is shown in Figure 1. The materials used in the study were primary data in the form of purse seine catches, crew wages, selling price of fish caught, and City Minimum Wage of Batam, Riau Islands Province. Primary data was

obtained after the operation of the purse seine vessel was completed. Secondary data used in this study is the productivity of purse seine vessels at PT Hasil Laut Sejati, journals and supporting references related to wages, profit sharing systems, and purse seine.

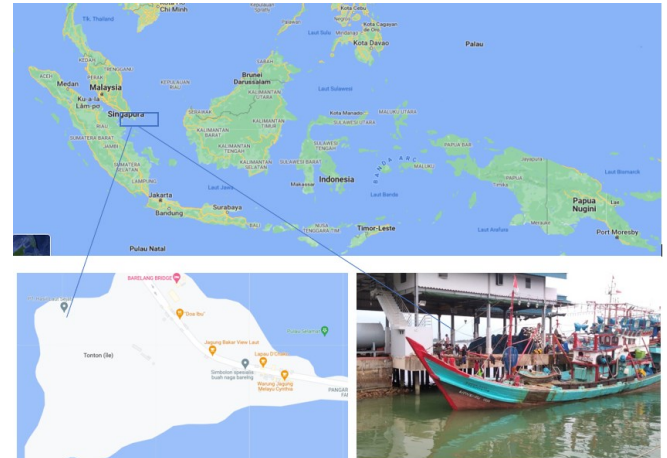


Figure 1. Research Location

Source of Method

Data collection is done by observation, interviews and documentation. Observations were made by observing the activities on board from the operation to the handling of the catch. Interviews were conducted with the crew and the ship's captain using a questionnaire relating to wages, catches, and the division of tasks on the ship. Another collection method used is documentation. Documented activities are activities of operating purse seine, preparation for departure and documentation of catches. Data collection was carried out during 3 trips to catch purse seine vessels at PT Hasil Laut Sejati. Data collection began with identifying catches during three fishing trips, interviews with crews, and the percentage of wage given based on position on the vessel.

Data Analysis

Data analysis used is descriptive analysis, income analysis, and gap analysis. Descriptive analysis is supported and clarified by the existence of graphs and tables that support research. Descriptive analysis is used to describe the operational activities of purse seine fishing gear and the operational areas of purse seine vessels in Batam, Riau Islands Province; the author also describes the organizational structure and wage distribution for purse seine vessels at PT. Hasil Laut Sejati. Catch data is obtained after operating purse seine. The relationship between catch and wages, the relationship between wages, total income and the number of crew who work, as well as the

distribution of wages on purse seine vessel in Batam, Riau Archipelago Province are also described by the authors. Data supporting descriptive analysis, obtained from PT. Hasil Laut Sejati.

The second data analysis is income analysis. The catch of fishermen is usually influenced by the amount and type of catch used (Lein & Setiawina, 2018). In addition, the fishing season also affects the catch of fishermen (Sudarmo et al., 2015). Analysis of the income of crew on Batam purse seine vessels, based on the total catch obtained for each fishing trip. The amount of wages received by crew on the Batam purse seine vessel is based on AMPERA (proof of salary slip) with the following equation:

$$\text{Yield} = \frac{\text{(Total sales of catch)}}{\text{Total value of share}}$$

$$\text{Crew wage} = \text{Distribution results} \times \text{part value}$$

The amount of wages earned by crew is influenced by the catch and the type of fish caught in fishing activities. The catch obtained by the PT. Hasil Laut Sejati selling price of fish is determined by the company. All proceeds from the sale of these catches are then received by the crew, including the crew, in the form of wages for one fishing trip.

Gap analysis to find out the gap between crew wages and the City Minimum Wage (UMK) in Batam. Conformity level analysis (TKi) is used to determine the level of conformity between the perceived satisfaction variable (Xi) and the expectations of employees/ABK (Yi) (Pangaribuan and Sihombing, 2021). The formula for calculating the suitability level is:

$$TK_i = \frac{\sum Xi}{\sum Yi} \times 100\%$$

Gap analysis is used to determine the gap between the wages received by the crew of the purse seine boat PT. Hasil Laut Sejati and the expectations of the crew. Crew's hope is that the income that crew receives is adjusted or close to the City Minimum Wage in Batam. The data needed in this gap analysis is the City Minimum Wage in Batam City and the income or wages received by crew members during 3 fishing trips. The gap value obtained is then made in a graph, to be further discussed, how is the gap between the wages received by crew and the City Minimum Wage in Batam City. Another gap analysis analyzed by the author is to compare the wages received by crew members on the purse seine PT.

Hasil Laut Sejati with City Minimum Wage fishery areas in Indonesia.

Results

Purse Seine Vessels in Batam

Purse seine is a fishing gear that targets pelagic fish. Purse seine operations usually use a fishing aid called a power block/robot. Power block serves to facilitate the process of raising fishing gear onto the vessel. The purse seine vessels at PT Hasil Laut Sejati consist of 8 vessels engaged in the fishing industry. The tonnage of ships sat PT Hasil Laut Sejati ranges from 54 – 186 GT. The tonnage of purse seine at PT Hasil Laut Sejati is shown in Figure 2 and documentation of purse seine vessels owned by PT Hasil Laut Sejati in Figure 3.

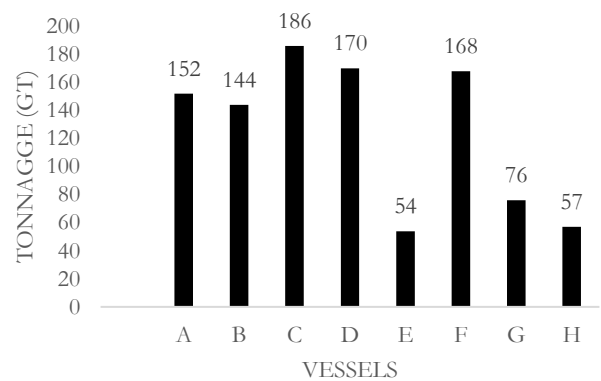


Figure 2. The tonnage of purse seine at PT Hasil Laut Sejati



Figure 3. Purse Seine Vessels at PT Hasil Laut Sejati

The productivity of purse seine vessels at PT Hasil Laut Sejati shows the total catch of purse seine vessels from 2016-2020. Purse seine vessel productivity is shown in Figure 4.

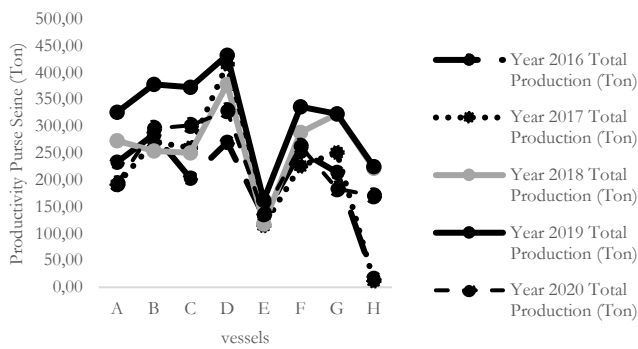


Figure 4. Purse Seine Vessels Productivity at PT Hasil Laut Sejati

The productivity of catches on vessel E and vessel H based on Figure 4 is less than that of other vessels, due to the tonnage of the vessel and the smaller size of the hatch compared to other vessels. The size of the vessel's tonnage has a significant effect on the carrying capacity or catch capacity. The larger the size of the ship, the greater the storage capacity of the hold. This statement is in accordance with (Rumpa A and Najamuddin, 2017) which states that vessel size and tonnage have a significant effect on catches.

The productivity of purse seine vessels from 2016 – 2020 is fluctuating. A high productivity value indicates a large catch, so it has an impact on increasing fishermen's income (Muzayanah et al., 2022). The productivity of purse seine vessels has decreased, especially in 2020. Almost all purse seine vessels at PT Hasil Laut Sejati have experienced a decrease in the number of catches. This decrease was due to the reduced fish stocks at the fishing location, resulting in decreased catches of fishermen (Libre et al., 2015). It is necessary to limit the number of catches if the productivity value exceeds the regulatory standard value (Tsitsika & Maravelias, 2008).

Organizational Structure on Vessels and Wage Sharing of Catches

The organizational structure on the purse seine vessel is not much different from other fishing vessels in Indonesia, with the highest position holder on board the vessel being the skipper (Ministry of Transportation, 2022). The organizational structure on the purse seine ship PT Hasil Laut Sejati is shown in Figure 5. The division of duties on the purse seine vessel PT Hasil Laut Sejati is as follows:

1. Skipper

Skipper is the highest position or position on the ship. The captain is responsible for the safety of the ship and all crew members, cargo, environment and

fishing gear. The skipper is also responsible for optimizing the catch and the quality of the catch. In addition, the skipper has an obligation to provide a daily catch report to the company.

2. Chief Engineer

Chief engineer is responsible for the smooth operation of the machines used on the ship and for maintaining and caring for the machines on the ship.

3. Chief Officer

Chief Officer commonly known as Apit. Chief Officer has the responsibility to assist the captain in carrying out his duties. Chief Officer carries out work on the deck, and is tasked with recording all the catches.

4. Second Engineer

Second engineer is in charge of assisting the KKM, besides that the second engineer is also responsible for observing the Air Blast Freezer, as well as helping carry out fishing operations.

5. Boatswain

Boatswain has important tasks in operating the fishing gear. Boatswain is divided into three parts. The first boatswain is responsible for the purse seine floats, the second boatswain is responsible for the purse seine settings and the third boatswain is responsible for the purse seine sinker. In addition, boatswain also assists the pilot in operating the fishing gear and maintaining the fishing gear.

6. Chef

Responsible for all groceries on board and cutlery. The cook is also in charge of cooking food for all crew.

7. Vessels's crew

Vessels's crew is tasked with assisting the operation of fishing gear, carrying out fishing activities on board and handling catches.

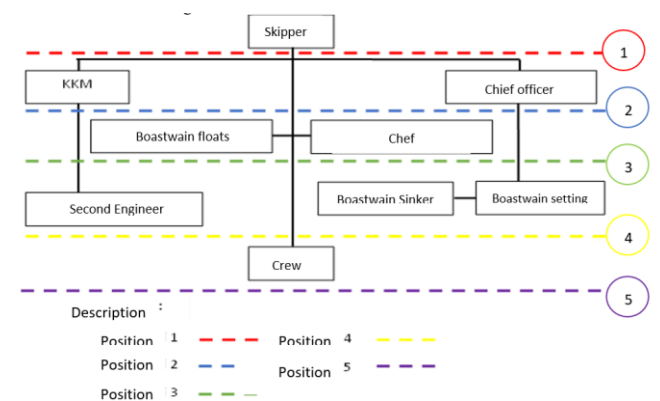


Figure 5. Organizational Structure on the Purse Seine Vessel PT Hasil Laut Sejati

The distribution of wages on the purse seine vessel PT Hasil Laut Sejati is shown in Table 1.

Table 1. Determination of the Basis for Distribution of Wages for the Catch of the Purse Seine Vessel in PT Hasil Laut Sejati

No	Job Position	Position Class	Results section
1	Skipper	1	3
2	Chief Engineer (KKM)	2	2,5
3	Chief Officer	2	2,5
4	Boatswain floats	3	2
5	Chef	3	2
6	Second Engineer	4	1,5
7	Boatswain setting	4	1,5
8	Boatswain sinker	4	1,5
9	Vessel's crew	5	1
10	Fish unloader (Robot)	-	1,5

The distribution of wages received by the crew is determined by the position of each position. The distribution is divided into five division positions, with the details of a skipper getting 3 parts of the catch, the chief engineer and chief officer get 2.5 parts, boatswain floats and the chef get 2 parts, the second engineer, boatswain setting and boatswain sinker get 1.5 parts of the yield, The crew members get 1 share, and the fish unloading team gets 1.5 parts.

Catches of Purse Seine

The catch of the purse seine vessels at PT. Hasil Laut Sejati is dominated by small pelagic fish, in accordance with target catch of purse seine vessels PT Hasil Laut Sejati. The catch is stored in the hold with the ABF (Air Blast Freezer) cooling system to maintain the freshness of the fish. The catches of the purse seine vessels at PT Hasil Laut Sejati are shown in Figure 6.

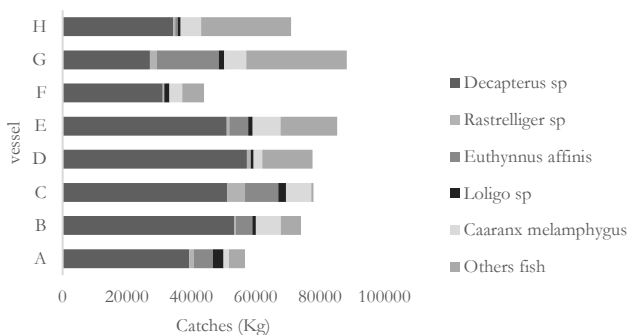


Figure 6. Composition of Catches on Purse Seine Vessel Vessel PT Hasil Laut Sejati

The purse seine catches shown in Figure 6 are the five dominant catches caught on purse seine. The catch of the purse seine were carried out during three fishing trips, starting from February to June 2022.

The dominant catches obtained by the purse seine PT Hasil Laut Sejati are *Decapterus* sp, *Rastrelliger* sp, *Euthynnus affinis*, *Loligo* sp, and *Caranx melamphygus*. The most dominant catch on the purse seine in PT Hasil Laut Sejati is kite fish as much as 364,632 kg, followed by *Euthynnus affinis* as much as 53,508 kg, *Caranx melamphygus* 50,678 kg, *Loligo* sp as much as 13,048 kg, and *Rastrelliger* sp as much as 12,624 kg.

Distribution of Wage Catches

The wages received by the crew are strongly influenced by the catch they get. The wages earned by the crew is one part, which has been agreed between the ship owner and the crew. The wages or money received by the crew comes from the total sales of fish caught. All catches must be sold to PT Hasil Laut Sejati. The amount of wages and profit sharing received by the crew in each region is different, depending on the agreement between the ship owner/company and the crew.

The income of the crew is affected by the revenue from the sale of their catch, operating costs per trip and also the number of crew in the lift net fishing unit (Nurlette, 2022). The link between the catch and the wages received by the crew is shown in Figure 7.

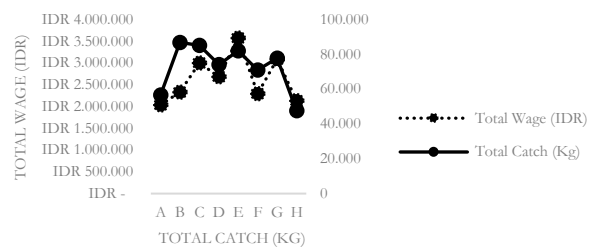


Figure 7. Linkage between total catch and total wages for crew members

Figure 7 explains that the highest total catch was the total catch by vessel B of 86,761 kg with the total wages received during the three fishing trips of IDR. 2,328,464, - while the lowest catch was the H vessel of 47,525 kg with the total wages received by the crew for three trips amounting to IDR. 2.130.000,-. Vessel C caught 85,000 kg with a total revenue of IDR. 2,996,000, - and ship G caught 77,674 kg with a total wage received by the crew of IDR. 3,084,000. The catch on vessel C and G is not as much as the catch on vessels B, but the wages received by crew on vessel C and G are greater than the wages of crew on vessel B. This is because the catches on vessel C and G are dominated by economically important fish with a higher selling price compared to the catch on vessel B. The selling price of fish has been set by the

company. The comparison between the number of the crew, the total wages of the crew and the total catch is shown in Figure 8.

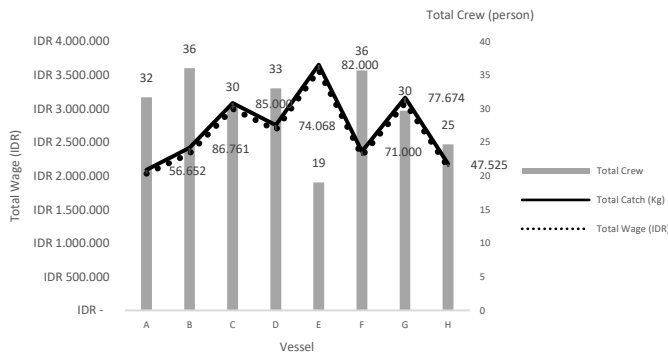


Figure 8. The relationship between the number of the crew, the total wages of the crew and the catch

The crew who works on the purse seine vessels ranges from 19 to 36 people. The number of crew working on vessels E is the least compared to the crew on other vessels. This is due to the relatively smaller size of the vessel E compared to other vessels owned by PT Hasil Laut Sejati, thus causing less number of the crew working. Most of the crew at PT Hasil Laut Sejati are on vessels B and F with 36 crew. The minimum number of the crew has a positive impact, namely the total wages earned by the crew is higher than that of other purse seine vessels. The second largest is the wages earned by the crew on vessel G of IDR. 3,084,000, - with a crew of 20 crew and a total catch of 77,674 kg.

The link total income, catch and total wages is shown in Figure 9.

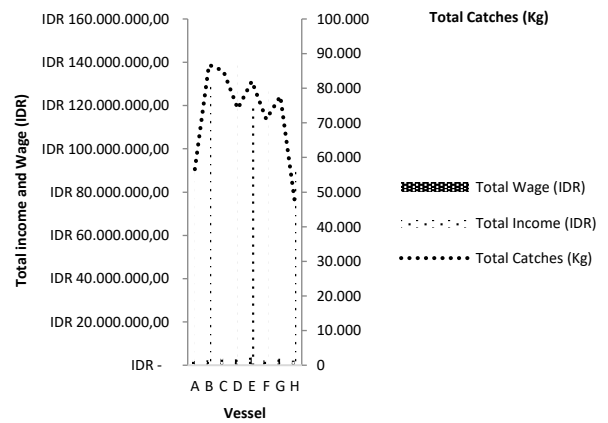


Figure 9. Linkage between Total Income, Total Crew Wages and Catches

The total revenue on the purse seine at PT Hasil Laut Sejati comes from the total sales of catches to PT. The total revenue on the purse seine vessels of PT Hasil Laut Sejati ranges from IDR. 90,347,200 – IDR. 150,558,000. The highest total revenue was on ship G with a total revenue of IDR. 150,558,000, the total wage for each crew is IDR. 3,084,000 with a catch of 77,674 kg. The smallest total revenue on the purse seine vessel of PT. Hasil Laut Sejati is IDR. 90,374,200, with a total wage of IDR. 2,130,000 and a catch of 47,525 kg.

Compatibility of Wages with Regulations and City Minimum Wage (UMK) of Batam city

Wages are income received by workers after doing a job. The wages received by the crew in each area vary, depending on the agreement between the ship owner and the vessel's crew. The suitability of the wages of the crew of purse seine in PT. Hasil Laut Sejati with UMK in Batam is shown in Table 2.

Table 2. Conformity of ABK Wages with City Minimum Wage (UMK) Batam City

Vessel	Wage Average	UMK in Batam	Wage Difference	%		Suitability of wage with city minimum wage (UMK)
				Wage	Gap	
A	IDR 677,649.67	IDR 4,186,359.00	IDR 3,508,709.33	16.19	83.81	not accordance
B	IDR 776,154.67	IDR 4,186,359.00	IDR 3,410,204.33	18.54	81.46	not accordance
C	IDR 998,666.67	IDR 4,186,359.00	IDR 3,187,692.33	23.86	76.14	not accordance
D	IDR 893,937.00	IDR 4,186,359.00	IDR 3,292,422.00	21.35	78.65	not accordance
E	IDR 1,190,134.00	IDR 4,186,359.00	IDR 2,996,225.00	28.43	71.57	not accordance
F	IDR 765,000.00	IDR 4,186,359.00	IDR 3,421,359.00	18.27	81.73	not accordance
G	IDR 1,028,000.00	IDR 4,186,359.00	IDR 3,158,359.00	24.56	75.44	not accordance
H	IDR 710,000.00	IDR 4,186,359.00	IDR 3,476,359.00	16.96	83.04	not accordance

Batam Minimum Wage is IDR. 4,186,359. The average wages received by the crew during the three fishing trips ranged from IDR. 677,649.67 – IDR.

1,190,134.00. The difference in wages received by the crew and the highest minimum wage in Batam is IDR. 3,508,709.33, while the lowest difference is

IDR. 2,996,225. The gap between wages received by crews and minimum wage in Batam is 71.57% - 83.81%. The large gap between the wages of crew and the Batam Minimum Wage can be concluded that the wages received by the crew of purse seine vessel PT. Hasil Laut Sejati are very small and far from the minimum wage of Batam. The gap between the crew wage and the Batam Minimum Wage and the relationship between the average wage received by crew and the Batam Minimum Wage are shown in Figure 10 and Figure 11.

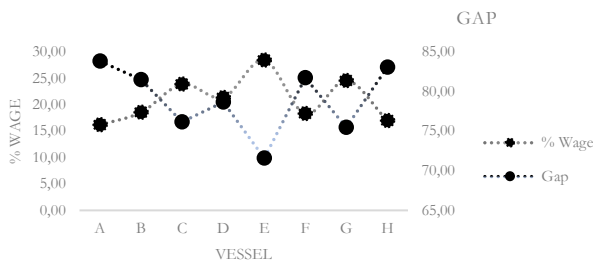


Figure 10. The wage gap for crew members and the Batam Minimum Wage

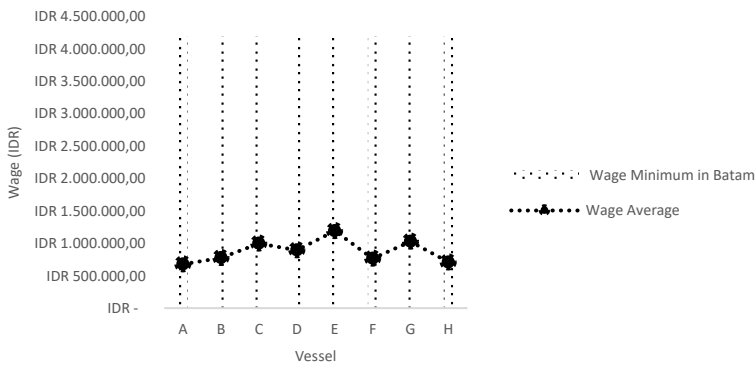


Figure 11. Relationship between Crew wages and Batam Minimum Wage

The lowest wage gap for crew and Batam Minimum Wage was on vessel E of 71.57%, while the gap between the crew and Batam Minimum Wage was highest on vessel A of 83.81%. The results of the gap analysis state that the average wage received by the crew is very concerning. This is partly caused by the company not considering the risks of working at sea and the welfare of the crew.

Apart from wages for the crew, other income earned by the crew is a holiday allowance of IDR 200,000 during religious holidays. Even though the wages received by the crew are still very far away, jobs as crew are still in great demand by coastal communities. This is because everyone can go or become a crew, only an identity card is needed, regardless of the diploma or ability of each crew. Regulations regarding sharing of fishery products

and the absence of standard rules regarding wages for fishing effort have resulted in differences in wages for the crew in each region.

The average wage for crew in PT Hasil Laut Sejati when compared to several Batam Minimum Wage in coastal areas that have fishery potential is shown in Figure 12.

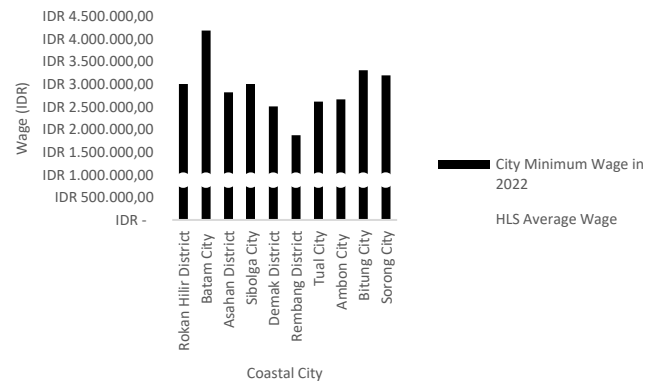


Figure 12. Comparison Batam Minimum Wage and coastal fisheries area in Indonesia

The average wage received by crew PT Hasil Laut Sejati during the three fishing trips was IDR 879,943. The wages received by crew are not only lower than the Batam Minimum Wage, but also lower than the Batam Minimum Wage in several areas that have fishery potential. Based on Figure 12, the largest Batam Minimum Wage of ten Indonesian fishery areas is Batam Minimum Wage of IDR 4,186,359, while the lowest in Rembang Regency, which is IDR 1,874,322. Crew wages on purse seine vessel in Maluku range from IDR 2,500,000 up to IDR 3,000,000 every month, in accordance with the minimum wage for Ambon city. Even though the Minimum Wage in Batam City is high, in reality the wages received by crew members are still very low. This is because the company has control in determining the selling price of fish and all catches must be sold to the company, so that the amounts of wages received by crew members is based on the catch sold to the company. PT Hasil Laut Sejati should pay more attention to the welfare of the crew members, one of which is so that crew members earn a more decent income, considering that the work of crew members at sea is very dangerous, risky, dirty and difficult (Nomura, 2002).

Discussion

Purse seine boats at PT Hasil Laut Sejati are made of fiber-coated wood. Unlike fishing vessels in Indonesia, which predominantly use wooden vessels.

Another area where the majority use vessels made of fiber-coated wood is in Pekalongan, Central Java (Ayunita et al., 2019). The reason PT Hasil Laut Sejati uses fiber-coated wooden vessels is that layered ships have a relatively long service life and more affordable maintenance costs compared to wooden ships. In accordance with Tambunan and Fanani (2019) which states that the cost of maintaining wooden ships is quite large and can reduce their operating income. The use of fiberglass laminates protects the wooden boat hull from external influences due to sea water (Rubino et al., 2020).

Purse seine vessels at PT Hasil Laut Sejati have a catch target of small pelagic fish, with fishing areas at Indonesia Fisheries Management Area (WPP) 711 precisely in the Natuna Sea and South China Sea. Small pelagic fish is one of the commodities in the Natuna Sea and South China Sea (Hidayat et al., 2019). The purse seine vessel at PT Hasil Laut Sejati is equipped with fishing aids and navigation tools that aim to facilitate fishing activities. Vessel stability is one of the considerations in the operation of ships at sea (Liwang, 2019).

The organization in Skipper must comply with the rules and regulations to ensure sailing safety and the security of the vessels. Skipper is obliged to provide assistance when there is danger on the vessels. Skipper must be able to lead on board according to applicable laws and regulations (Morel et al., 2008). The division of tasks on board is usually conveyed by the vessel owner and skipper before the fishing activity takes place. Good cooperation is needed so that all fishing activities can run well, minimizing work accidents on ships, as well as ship accidents. Vessel accidents are caused by the low awareness of vessel crews about the importance of work safety in fishing activities (Budiman et al., 2017). A work environment and safe working methods are needed, so that occupational safety and health can be carried out properly (Campbell & Frowley, 2007).

The crew involved on purse seine vessels are generally not permanent workers, because the wages they receive are less than those who have positions on the vessels. The organizational structure can explain that the leader on board in operating the purse seine is the captain. The roles and duties of each person in operating purse seine are based on the organizational structure on board (Ikhsan et al., 2021). Good division of tasks on board can minimize work accidents on vessels, in accordance with (Fan et al., 2020) and (Krowa et al., 2020) which state that good conditions are also needed, so that crew can work well.

The main catch of purse seine vessels at PT Hasil Laut Sejati is small pelagic fish, including flying fish, tuna and flying fish. The main target of the purse seine is pelagic fish which have a habit of schooling. This statement is in accordance with Wijayanto et al., (2020) which states that fish caught in purse seine are fish that have a tendency to cluster and are attracted to the presence of fishing gear and fishing aids. Other fish, namely fish that are not included in the main catch of purse seine but still have a sale value, such as barracuda, snapper, and mackerel. Purse seine operation in Indonesia Fisheries Management Area (WPP) 711, where the potential for fish resources in WPP 711 is dominated by small pelagic fish and demersal fish (Suman et al., 2017). The large number of catches will have a significant effect on the wages received by crew members. In addition, to increase catches, navigation aids such as sonar are needed which detect the presence of fish through sound waves (Tenningen et al., 2019). High diversity of fishing grounds increases fishermen's income and catches (Eide, 2016).

The pattern of dividing wages caught by purse seine in the crew obtains one share for the crew wages of 35% divided according to the number of the crew (Bawias et al., 2022). The wages or income received by the crew comes from selling the catch which has been deducted from operational costs in fishing activities (Zamroni, 2015). In the profit-sharing system for purse seine vessel at the Kutaraja Fishing Port is based on applicable regulations and implements good cooperation with stakeholders (Salmarika et al., 2022).

The selling price of fish is determined by PT Hasil Laut Sejati. The selling price of fish offered by PT Hasil Laut Sejati is very low, this is because PT Hasil Laut Sejati provides and facilitates all the costs of sea needs needed by each ship. Likewise, in the pole and line industry in Lombok, the company also buys all catches, as well as provides supplies and operational costs for pole and line ships that have collaborated with the company (Wiratama et al., 2017).

The total catch affects the wages received by the crew, this is in accordance with (Ridha, 2017) which states that wages are affected by the catch. In addition, the number of catches is also influenced by working capital, such as the availability of facilities and infrastructure that support fishing activities (Lein and Setiawina, 2018). States that the price of fish received and the amount of operational costs influence fishermen's income (Safa'ah et al., 2018).

The success of fishing activities is largely determined by the quality of fishermen's resources in using and operating fishing units (Libre et al., 2015). In addition, cooperation on board is needed to ensure that all activities on board can run well without problems. The type of fishing gear used and the target species caught have an effect on fishermen's income (Outeiro et al., 2018).

The total income earned by purse seine vessels is also influenced by the total catch, the selling price of fish, and the number of crew working on the vessel. Fish production is influenced by the fishing experience of fishermen. The longer the fishermen's experience at sea, the more catches the fishermen get. This is in accordance with (Libre et al., 2015) which states that the number of fish caught reflects the production of fishermen groups. The ability of the captain in determining the location of the fishing ground is highly tested if the captain has experience at sea. Income is significantly influenced by work experience, distance to sea, catch, and fish prices. In addition, the technology used in fishing activities also affects fishermen's income (Sukono et al., 2021). The technology used on purse seine vessels in PT Hasil Laut Sejati includes navigation tools that assist in determining the location of fishing grounds, aids to facilitate the fishing process such as power blocks, axles, capstans, lifeboats, and FADs.

The lowest wage gap for crew and minimum wage in Batam was on vessel E of 71.57%, while the gap between the crew and minimum wage in Batam was highest on vessel A of 83.81%. The results of the gap analysis state that the average wage received by the crew is very concerning. This is partly caused by the company not considering the risks of working at sea and the welfare of the crew. Most fishermen depend on their fishing activities to work for their needs, although many crew live in poverty (Rusdiana et al., 2020). The portrait of poverty reflects the limitations of fishermen in fishing activities, the means used, and opportunities to utilize fish resources (Jamilah and Mawardati, 2019). Low income occurs due to symptoms of exploitation of marketing practices and the application of profits sharing systems. It is this symptom of exploitation that contributes to poverty for fishermen (Allison & Horemans, 2006; Zamroni, 2015). The wages received by the ship's crew are also influenced by the condition of the natural resources that are exploited, the more potential resources, the more wages the vessel's crew receives (Guillen et al., 2017).

The government evaluates whether or not it is necessary to establish rules for a profit-sharing

system and a wage system for the benefit of all parties (Prmono and Sutono, 2018). The wages of crew in several countries are still below the state minimum wage. Several countries that provide wages 0.5 greater than the minimum wage are the United Kingdom, the Netherlands, Ireland, Portugal, Germany, Lithuania, Bulgaria, Romania, Estonia, Cyprus and Latvia (Outeiro et al., 2018).

Once the risk of crew members' work at sea must be considered not only by the company, but also by the government, so that crew members and fishermen can live more prosperously and far from poverty (Humaedi, 2017). A decent livelihood is needed, including for fishermen to live in prosperity from the work they are engaged in (Giron-Nava et al., 2021).

Conclusion

The conclusion of this study is that the wage distribution pattern for crew members on purse seine boats is based on the catches obtained, with the selling price of fish being determined entirely by the company. The next conclusion is that the average wage received by the purse seine ship crew members of PT Barang Laut Sejati is around Rp. 677,649.67 – Rp. 1,190,134.00. The wages received are very far from the UMK in Batam City, with a gap of 71.57% - 83.81%.

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