

INEQUALITY OF PROFIT SHARING SYSTEM IN FISHING BUSINESS IN KUALA MARANG, MARANG, TERENGGANU

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Abstract: Most fishermen worldwide, including in Kuala Marang, prefer the profit-sharing system than fixed pay. However, profit-sharing is said to be unfair as it exploits the fishing crew and causes an income gap between the fishing boat owners and ordinary crew, which is one of the reasons why there are rich and poor fishermen. This research studied the inequality in fishermen's profit-sharing system between vessel owners and crew. Qualitative method were used, where 89 fishermen in Kuala Marang were randomly selected by Slovin's formula for interview. By descriptive analysis, the detailed patterns of the profit-sharing system. This study found four main types of fishing gears used: purse seine, gill net, hook and lines, and traps. While there were two patterns of profit-sharing practiced for each gear. This analysis shows that the profit-sharing system causes income inequality as all vessel owners gained a far higher profit than the crews. For purse seine, the owner, captain, operator and crew with profit-sharing Pattern 1 received profit of 50%, 5%, 5% and 3.33%, respectively while those with Pattern 2 received 52%, 8.5%, 3.8% and 2.5% respectively. For gill net, the owner and crew with Pattern 1 received profit of 66.67% and 33.33% respectively while those with Pattern 2 received 75% and 25% respectively. Hook and lines owners and crews with Pattern 1 of profit sharing received profit of 40% and 30% respectively while those with Pattern 2 received 66.67% and 16.67% respectively. Trap owners and crews with Pattern 1 of profit sharing received profit of 50% and 12.5% respectively while those with Pattern 2 received 33.33% and 16.67% respectively. This research also concluded that policy imperfections contribute to the inequality in the profit-sharing system.

Keywords: Inequality, fishermen, profit, profit sharing.

Introduction

Terengganu is situated in northeastern Peninsular Malaysia and divided into seven administrative districts: Besut, Dungun, Hulu Terengganu, Kemaman, Kuala Terengganu, Marang and Setiu (Yusoff, 2015). Fishing exists in all of these districts. In Marang, the main economic activity is fisheries. The marine capture fisheries in Terengganu have developed from an inshore traditional fishery to its present mix of inshore traditional and commercial, and deep-sea fishery sub-sectors.

Most fisheries worldwide, including in Terengganu, remunerate their crew with a profit-sharing system (Guillen *et al.*, 2017). In other words, the fishermen's income is basically obtained from the wages of their efforts (Adi *et al.*, 2019). This was supported by a previous study that

stated that in many, if not most, fisheries activity, fishermen or fishing crews are rewarded under a share or “lay” system (McConnell & Price, 2006).

In Malaysia, a 50 : 50 arrangement of distributing the net profit between the boat owner and the fishing crew after the running cost is being deducted from the gross profit, is common (Alam, 1991). As a comparison, in Belawan, Indonesia, a study found that 2 out of 3 fishermen prefer the profit-sharing system as compared to fixed wages (Hendrik *et al.*, 2020). One of the reasons why profit-sharing is commonly used and is preferable as compared to fixed pay is because it incentivise workers to increase their productivity. Workers will agree to profit-sharing if their income will increase (Hiroaki, 2013). Syahrizal (2019) agreed that the income of fishermen is highly related to the profit sharing system, which is determined by the sale of catch after the operating cost for the fishing trip was deducted, being divided by vessel owner and crew. Another study found that this system improved a vessel’s economic performance and can significantly increase the crews’ salary (Jordi, 2015).

However, many studies have emphasized the inequalities in the profit-sharing system between the boat owner and the ordinary crew has caused large income gaps. Profit-sharing is said to be more profitable to the vessel owners as compared to the crews (Hendrik *et al.*, 2020). For example, in Peninsular Malaysia, the share system was reported to be biased and as the average income of the purse seine boat owner was found to be 11 to 13 times higher than the ordinary crewman, four to five times higher than the ordinary crewman for trawler and 1.5 to three times higher for gill net (Alam, 1991). This means that the profit-sharing system that has been practiced is one of the factors causing the inequality and low fisherman income. The poverty incidence is very high especially among the artisanal fishermen in Terengganu. Besides, the income of most fishermen was below MYR 1,500 month placing them in the bottom 40% (B40) of the income group in Malaysia (Khatijah *et al.*, 2017).

Fishing crewmen in Pasia Nan Tigo Subdistrict, Koto Tengah District, Padang City, West Sumatra also consider the profit-sharing system to be unfair. Ship owners there get the most out of crewmen’s hard work and risk at the sea. This inequality in profit-sharing has made the poverty more prevalent among fishing crewmen compared to the other groups, such as farmers. (Syahrizal, 2019). Another analysis on profit sharing in fishing in Aru Islands, Indonesia, found imbalanced revenue distribution, where 50% of the net profit 1 (after operational cost was deducted from the gross revenue) belongs to the owner. The balance, is further divided between the captain and the crew, where captain receives 60% o. From this system, the profit of owner, captain and ordinary crew for one single trip was reported to be at Rp 1,046,750 (MYR 300.22), Rp 628,050 (MYR 180.13) and Rp 418,700 (MYR 120.09) respectively (Widihastuti & Rosyidah, 2018).

It is important to investigate the income distribution among fishermen, as there has been lack of data to prove the existence of an income gap between different classes of players in the industry (Dung *et al.*, 2008). Exploring the fishermen’s profit-sharing system helps to examine the justice and fairness of the system (Alimuddin *et al.*, 2018). There has been limited study on the profit-sharing system among Malaysian fishermen. This study is based on a survey conducted on fishing communities in Terengganu in 2017. The survey sought to study the pattern of profit-sharing among fishermen in Terengganu and to calculate the profit of the boat owner and crews according to the system.

Materials and Methods

Time and Location of the Study

In 2017, the fishing population of Kuala Marang was 827, which was the highest among the other sub-districts of Marang, such as Chendering, Rusila, Merchang, Jambu Bongkok, Pasir Putih and Gong Balai. The survey started in March 2017 and ended in May 2017, and the studied areas were the Kompleks Lembaga Kemajuan Ikan Malaysia (LKIM) jetty (Station 1), Kabu Island (Station 2) and Tanjung area (Station 3) in Kuala Marang (Marang district) as illustrated in Figure 1.

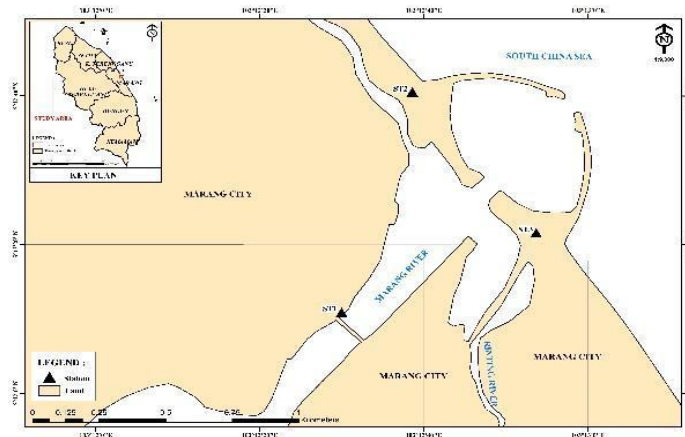


Figure 1: Study location in Kuala Marang

Sampling Method and Data Collection

This analysis uses data gathered through interviews with fishermen in the area of Kuala Marang, Marang, Terengganu. Slovin's formula at 90% confidence interval was used to decide the number of respondents (Limi *et al.*, 2017). From this, 89 respondents were selected by random and purposive sampling, to conduct the questionnaire-based interviews to collect the primary data (Shettima *et al.*, 2014). The questionnaire includes the fishermen's operational cost, productions and other detailed information regarding the profit-sharing system they practice. Reviews and pre-testing on the complete questionnaire was done before the interview. Five fishermen of different ages from each studied areas were chosen for the pretest questionnaire interview. The testers were asked to complete the survey the same way as the actual project to ensure that researchers and respondents interpret the survey in the same way, which is the highest concern in a survey design (Converse & Presser (1986).

Analysis of Data

Firstly, descriptive analysis was used to study the profit-sharing patterns among fishermen in Kuala Marang. The data collected were processed using Microsoft Excel and presented in simple diagrams to observe the overall patterns and differences. Data was grouped into 4 fleets based on the types of fishing gears used in Kuala Marang during the surveyed year which were the purse seine, gill net, hook and lines and trap.

Next, budgetary analysis was used to calculate the total gross profit the fishermen gained from their fishing activity in one month. The formula used in these calculations included the total gross revenue and total cost.

A. Gross profit

$$\text{Gross profit (MYR)} = \text{TR} - \text{TC} \tag{1}$$

Where, TR =Total revenue (MYR), TC =Total cost (MYR)
(Olaoye *et al.*, 2012, Okeowa *et al.*, 2015)

B. Total cost

$$\text{Total cost (MYR)} = \text{FC} + \text{VC} \tag{2}$$

Where FC = Fixed cost (MYR), VC = Variable cost (MYR)

Results and Discussion

Profile of Fishermen and Their Fishing Unit

The highest number of fishermen interviewed are in the 41-50 and 51-60 age groups, both with 22.37% (refer Figure 2). This indicates the middle age group was dominant in fishing. Reza *et al.* (2015) stated that fishing is profitable traditional profession preferred among the young and middle-aged. Figure 3 shows that in Kuala Marang, most fishermen (26.32%) had 11-20 years of experience. This was then followed by 19.74%, 17.11%, 17.11%, 15.79% and 3.95% of fishermen which belonged to the experience group of 41-50, 0-10, 21-30, 31-40 and 51-60 respectively. This finding in Kuala Marang is similar to Perumal *et al.* (2016) where he reported that majority of the number of fishermen in Bagan Lalang, Sepang, in Selangor (37.3%), have 11- 20 years of experience.

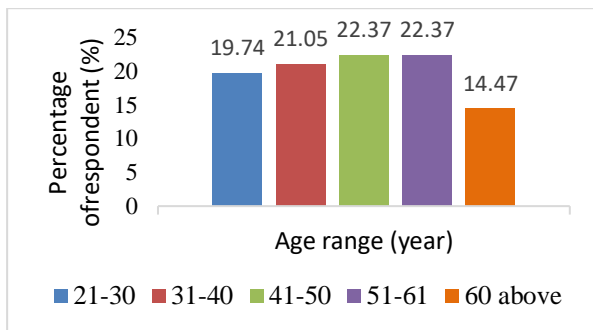


Figure 2: Fishermen’s age

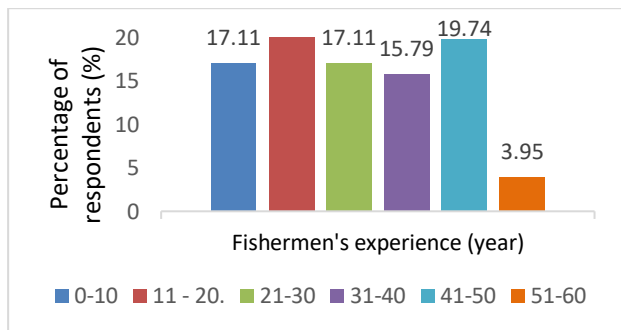


Figure 3: Fishermen’s experience

Table 1 shows that purse seine crewmen made up 32.89% of respondents, or 25 out of 76 respondents. From thees 25 purse seiners, 100% of them used wooden fishing vessels. There were also 35 gill net users, 12 hook and line users and 4 trap users. Thirty-four of the gill net users prefer fiberglass boats as compared to only 1 using wooden boat. Only four of the hook and line respondents and all of the trap fishermen used wooden boats. The number of crew onboard a vessel with purse seine, gill net, hook and lines, and trap were 14, 2, 2 and 4 respectively.

Table 1 : Fishing unit profile

	Purse Seine	Gill Net	Hook and Lines	Trap
Distribution (%)	32.89	46.15	15.79	5.26
Type of boat				
• Wooden boat	25	1	4	4
• Fiber boat	0	34	8	0
No of crew	14	2	2	4

Table 2 presents the operational cost for fishing trips in one month. Purse seiners spent an average of MYR8000 on fuel, while MYR400 and MYR900 were spent on ice and food respectively. Gill net fishing boats spent MYR3050, MYR200 and MYR400 on fuel, ice and food respectively. Fishermen with hook and lines spent MYR2000, MYR200 and MYR400 on fuel, ice and food respectively. Trap fishermen spent MYR1600, MYR100, MYR100 and MYR180 on fuel, ice, food and bait respectively.

Table 2 : Operational cost

	Purse Seine	Gill Net	Hook and Lines	Trap
Operational cost (MYR)				
• Fuel	8000	3050	2000	1600
• Ice	400	200	200	100
• Food	900	400	400	100
• Bait	0	0	0	180

Purse Seine

There are two different patterns of profit sharing practiced by fishermen in Kuala Marang as shown in Figure 4. In Pattern 1, the operational cost were firstly deducted from the gross revenue. Next, the net revenue is divided into two equal parts, where one part (50%) is the owner's share and the other part (50%) is to be shared by the captain (1), operator (1) and crew (12). However, the amount of shared received between them was not similar. The captain received 1.5 part of share, operator receives 1.5 part of share while the crew received one part each.

For Pattern 2, which is more complex than Pattern 1, after the operational cost was deducted to get the net revenue 1, the owner received a 10% bonus, while the captain received a 6% bonus. The balance (net revenue 2) then will be further divided again into two equal parts where half was to be shared by the 12 crews (1 part each), captain (1 part) and operator (1.5 part) while another half belonged to the owner, which included his part and the cost for boat and gear maintenance.

This pattern of profit sharing is similar to the practice by purse seiner in Parepare city. Indahyani and Khairuddin (2016) reported that owners did not join the fishing, and only provided the vessels, gear and operational cost. Captains were appointed to take charge of the fishing trip, including supervising the crew. Purse seiners in this city were rewarded with their share only after they completed their fishing for one month. When it was time for profit-sharing, they calculated the accumulated production they produced in a month and the total cost were deducted from the total gross production to get the net revenue. The net revenue was then divided into two, where one part goes to the owner and the other part is shared among the captain and 11 crewmen. However, the shares received by the captain and the crews were not similar, as it depends on their responsibilities during the fishing trip. The captain and operator received an additional of 0.5 part each which means each of them received a total of 1.5 part each while the other nine crewmen received one part each.

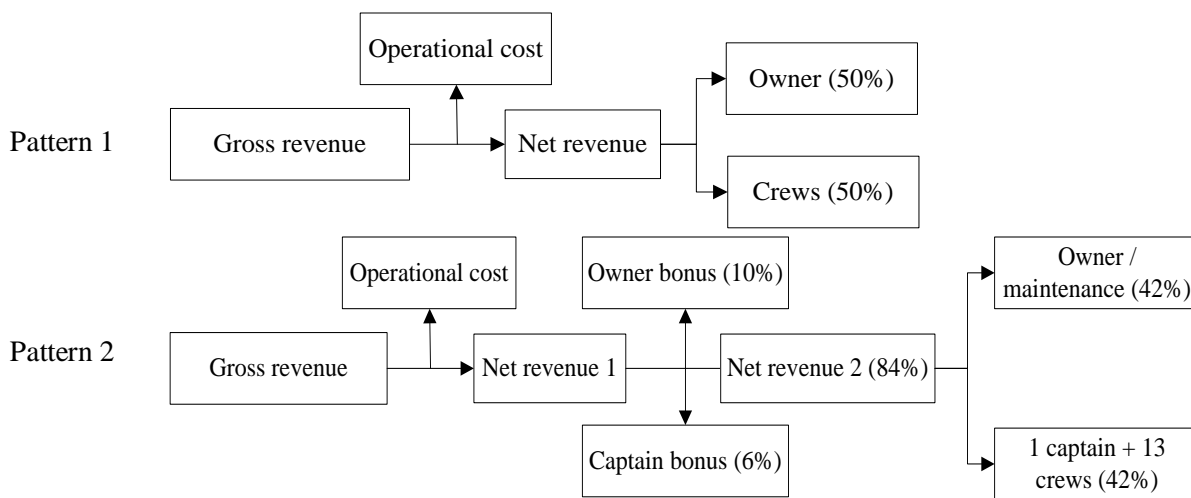


Figure 4: Profit sharing patterns for vessel with purse seine.

According to Table 3, the monthly revenue generated by purse seiner was RM91900.00 while the total cost needed was RM9,531.00. Hence, the profit was at an average of RM73,572.00 per month.

Table 3: Revenue, cost and profit for purse seine gear

Purse Seine	
Revenue (MYR)	91900.00
Cost (MYR)	9,531.00
Profit (MYR)	73,572.00

Next, after the profit was calculated by deducting the total operational cost from the total gross revenue, the profit was to be divided between the vessel owners and the crew. Table 4 shows that in Pattern 1, after the operational cost was deducted from the gross revenue, the vessel owner gained an average monthly profit of MYR 36,786.00 (50%), while the captain, operator and each crew received MYR 3,678.60 (5%), MYR 3,678.60(5%) and MYR 2,449.95 (3.33%) respectively. On the other hand, in Pattern 2, the owner gained an average monthly profit of MYR 38,257.44 (52%), while the captain, operator and each crew received MYR 6,287.08 (8.5%), MYR 2,809.11 (3.8%) and MYR 1,872.74 (2.5%) respectively.

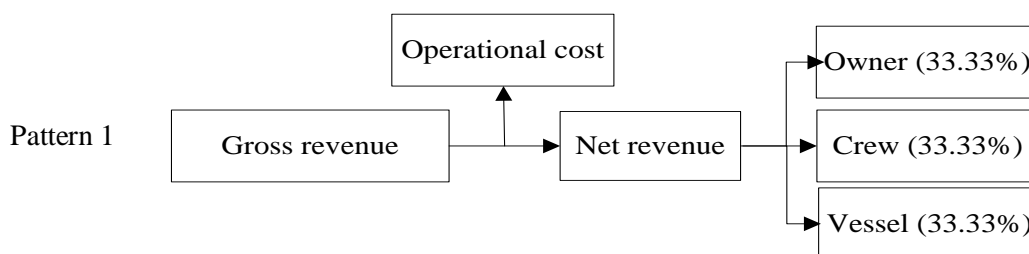
Table 4: Sharing system between owner and crew of purse seine

Amount of Share Received According to Fishers Position								
	Owner (1 person)		Captain (1 person)		Operator (1 person)		Crew (12 person)	
	%	MYR	%	MYR	%	MYR	%	MYR
P 1	50	36,786.00	5	3,678.60	5	3,678.60	3.33	2,449.95
P 2	52	38,257.44	8.5	6,287.08	3.8	2,809.11	2.5	1,872.74

As a comparison, a previous study done on purse seiners in Pantai Indah Mukomuko reported that the an average of 24 trips were made a month. During the low season, the purse seiner vessel in this area generated an average profit of Rp 67,616,832 (MYR19395.46) per month which means that the owner, captain, operator and each crew received an average profit per person at Rp 40,570,104 (MYR11637.28), Rp 4,829,774 (MYR1385.39), Rp2,897,864 (MYR831.23) and Rp1,931,910 (MYR554.16) respectively. The average monthly profit during the moderate season was Rp122,864,832 (MYR35243). Therefore, the owner, captain, operator and each crew received an average profit per person at Rp73,718,904 (MYR21145.80), Rp8,776,059 (MYR2517.36), Rp5,265,636 (MYR1510.41) and Rp3,510,424 (MYR1006.94) respectively. Lastly, the average monthly profit during the peak (high) season was reported to be Rp170,600,832 (MYR48935.77), while the owner, captain, operator and each crew received an average profit per person of Rp102,360,504 (MYR2936.47), Rp12,185,774 (MYR3495.41) , Rp7,311,464 (MYR2097.24) and Rp4,874,310 (MYR1398.17) respectively (Tiara, 2016).

Gill net

There are two patterns of profit sharing among fishermen in Kuala Marang (refer Figure 5). For Pattern 1, the operational cost was deducted from the gross revenue to get the net revenue. Next, this net revenue was divided into three. One part (33%) was for the owner, one part (33%) for the crew and the balance (33%) was for the vessel. For Pattern 2, the net revenue will be divided into four as gear will also get a share.



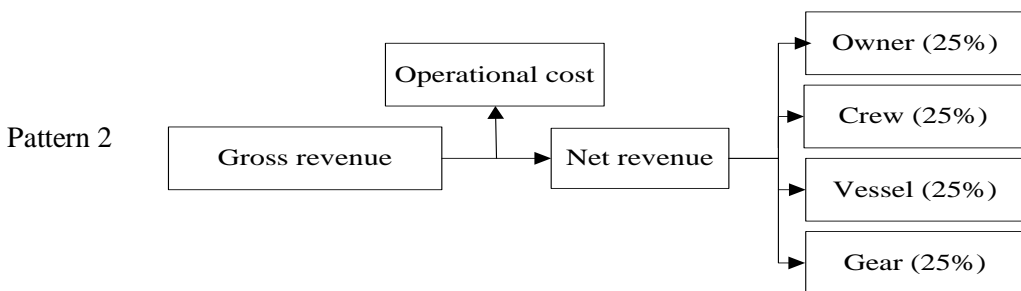


Figure 5: Profit sharing patterns for vessel with gill net

As a comparison, a previous study reported that on Aru island, boats that used gill nets would go out with a crew of on board (1 captain and 3 deck hands) (Widihastuti and Rosyidah., 2018). This was more than only or two crewmen for gill net gears in Kuala Marang. In Aru island, operational costs were deducted from the fish sales to get the net income. Net income was then divided into two, where 50% went to the owners and 50% was shared between crew. The captain received two parts of share while the other three ordinary crewmen received one part each. Unlike Kuala Marang boat owners, Aru island boat owners did not collect any share specifically for maintenance cost. This was probably the reason they took 50% from the net income which was a huge amount and was enough to cover the maintenance cost for vessels and gears as well as their profit share.

Next from Table 5, for the fishermen with gill nets, the average revenue generated in a month was MYR 8,616.00. From this, the cost to run fishing activities for one month was MYR 3,852.00. Hence, a gill net vessel generated a monthly profit of MYR 4,763.00.

Table 5: Revenue cost and profit for gill net

Gill net	
Revenue (MYR)	8,616.00
Cost (MYR)	3,852.00
Profit (MYR)	4,763.00

Table 6 shows how that profit was distributed between vessel owners and crew. Pattern 1 of profit sharing allocated 66.67% (MYR 3,142.58) to the owner while another 33.33% (MYR 1,571.79) for the crew. or Pattern 2, the owner got 75% (MYR 3,572.25) and the crew got 25% (MYR 1,190.75).

Table 6 :Sharing system between owner and crews for gill net

Amount of share received according to fishers position				
Owner (1 person)			Crew (1 person)	
	%	MYR	%	MYR
P 1	66.67	3,142.58	33.33	1,571.79
P 2	75	3,572.25	25	1,190.75

Hook and lines

Figure 6 shows the two patterns of profit sharing practiced by the fishermen with hook and lines. In Pattern 1, after the operational cost is deducted from the gross revenue, the net revenue was divided into two parts, with 40% going to the owner and 60% going to the crew of 2. Pattern 2 is slightly different, where the net revenue is divided into three without the owner, the vessel and crew (average of 2 deck hands) getting a share each.

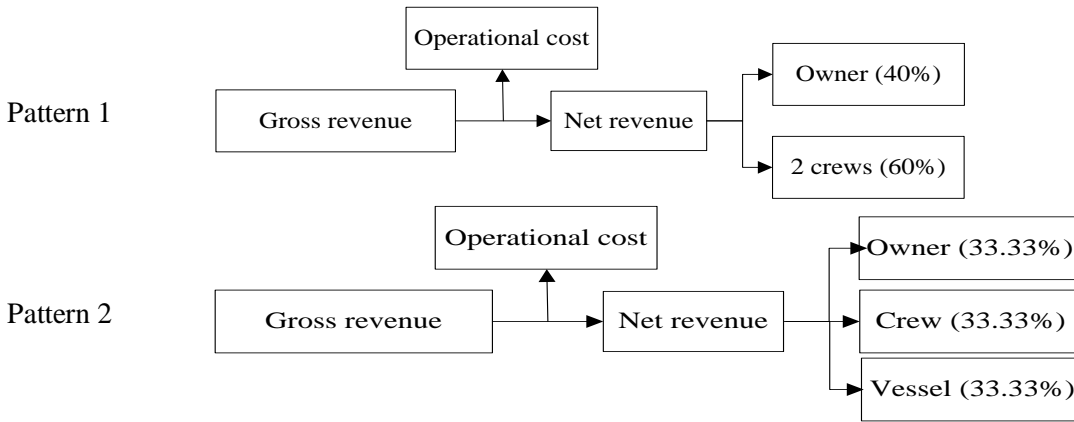


Figure 6: Profit sharing patterns for vessel with hook and lines

As a comparison, in Aru island, most hook and line fishing boats would go out to sea with one captain and one crew on board. Hence, after the cost was deducted from the fish sales, 60% of the net income went to the captain, and 40% went to the crew (Widihastuti and Rosyidah, 2018). In our study the owner also goes out to sea. . Hence, there was no captain is needed.

This study found that the total revenue generated by fishermen using the hook and lines gear was MYR 12,308.33. However, they spent MYR 2,813.33 in costs. Hence, their average profit was calculated to be MYR 9,495.00 per month (refer Table 7).

Table 7: Revenue cost and profit for hook and lines

Hook and lines	
Revenue (MYR)	12,308.33
Cost (MYR)	2,813.33
Profit (MYR)	9,495.00

Pattern 1 profit-sharing saw the vessel owner receiving MYR 3,798.00 (40%) and each crewman receiving MYR 2,848.50 (30%). or Pattern 2 of the profit sharing system, the owner would receive MYR 6,330.31 (66.67%) and each crewman would get MYR 1,582.34 (16.67%) (refer Table 8).

Table 8: Sharing system between owner and crew of hook and lines

Amount of share received according to fishers position

	Owner (1 person)		Crew (2 person)	
	%	MYR	%	MYR
P 1	40	3,798.00	30	2,848.50
P 2	66.67	6,330.31	16.67	1,582.34

Trap

Trap fishermen would go out to sea with an average crew of four, as well as the owner who act as the captain. In Pattern 1 of profit sharing (Figure 7), the operational costs were deducted from the gross revenue. Next, the net revenue was divided into two with 50% going to the owner and the other 50% divided equally between the four crewmen. In Pattern 2, similar to that in Pattern 1, operational costs were deducted from the gross revenue to get net revenue. The net revenue was then divided into six parts, with two parts going to the owner of the vessel and each crew receiving one part. From the figure below, we can see that the difference between Pattern 1 and Pattern 2 was that the owners in Pattern 1 received much bigger percentage of share as compared to those with Pattern 2. As a comparison, In Will Karangsong Village Indramayu of West Java, 60% of the revenue belonged to the owner while the balance 40% was to be shared by the captain and crews on board. This system was said to be unfair and imbalanced because the captain and crews who actually went on the fishing trip received much less share as compared to the owner (Rizky *et al.*, 2018).

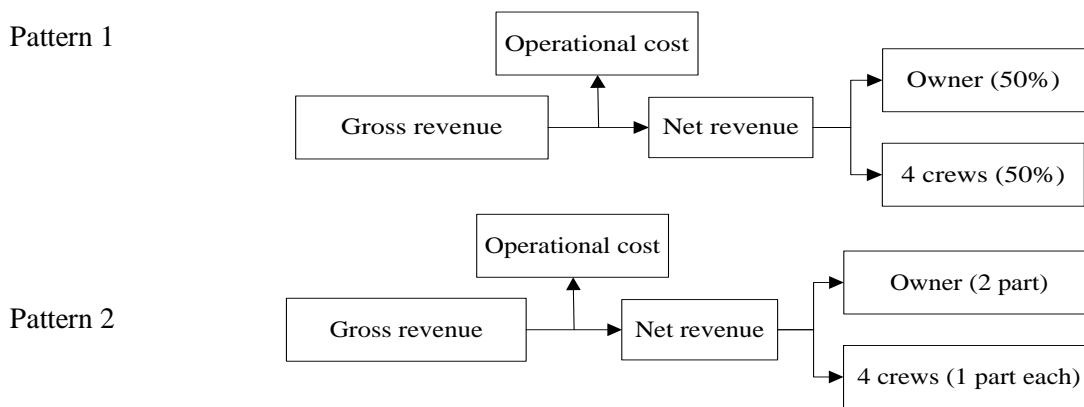


Figure 7: Pattern of profit sharing for vessels with trap gear

From Table 9, the total revenue generated by fishers with trap gear was found to be at an average of MYR 16,800.00. On the other hand, the total cost needed to operate fishing trips for one whole month was MYR 2,070.00. Hence, it was calculated that the profit generated by each vessel with trap gears was at MYR 14,730.00 per month.

Table 9: Revenue cost and profit for trap

Trap	
Revenue (MYR)	16,800.00
Cost (MYR)	2,070.00
Profit (MYR)	14,730.00

Table 10 shows that upon profit distribution between the owner and his crews with trap gear, vessel owners which practiced the profit sharing of Pattern 1 generated an average profit of MYR7,365.00 which was 2 parts out of 6 parts of the total profit or 50%. The balance of 4 parts were then divided equally among his 4 crews where each crew received 1 part of the total profit. Hence, each crew generated profit of MYR 1,841.25 per month which was 12.5% of the total profit. On the other hand as for Pattern 2, the vessel owner received 33.33% of profit which amounted MYR4,909.50 while each crews made profit of MYR 1,841.25 which was 16.67% of the total profit.

Table 10: Sharing system between owner and crew of trap gear in Kuala Marang

Amount of share received according to fishers position				
Owner (1 person)			Crew (4 person)	
	%	MYR	%	MYR
P 1	50	7,365.00	12.5	1,841.25
P 2	33.33	4,909.50	16.67	1,841.25

Comparison between profit of fishing owner and crew (Policy imperfections)

This study found that there was occurrence of inequality and unfairness in the profit sharing system. This was as based on the survey of all gear types, 100% owners interviewed received far higher profit as compared to their crews. For instance, the vessel owners which used gill net gears received an average profit of RM3,142.58 (Pattern 1) and MYR 3,572.25 (Pattern 2) while their crews received MYR 1,571.79 and MYR 1,190.75 respectively. This shows that some crews did not even receive half of what the boat owners generated. On the other hand, fishermen with trap gears also showed imbalanced in their profit sharing system. Even though the gross profit they generated equally between the owner and his crews (50 - 50), the crews (50%) part was to be shared equally between the 4 crews. This made the owner of the vessels to receive an average profit of MYR 7,365.00 (Pattern 1) and MYR 4,909.50 (Pattern 2) respectively while each of their crews only received shares of MYR 1,841.25 and MYR1,841.25 respectively. This situation can be considered alarming as it could affect the living standards of fishing crews if they were to receive too low amount of share, which caused them to live in poverty.

In addition to that, this imbalance in profit distribution between the vessel owners and their crews might prevails due to the absence of any government bodies and implementation of statute of law that monitors the profit sharing system that the fishermen practiced. As an example, Indonesian implemented the Law 16/1964 where the detailed rules regarding profit sharing schemes related to the issues (Gufran, 2018). Regular monitor from the higher authority might

help to reduce income inequality and give more justice to the crews. The development of policy should aim towards poverty eradication.

Conclusion

Fishermen in Kuala Marang remunerate their crew by the profit sharing system where after the cost was deducted from the net revenue, the total profit was divided between the owner and crew. However, the system that has been practiced so far was one of the factors causing the inequality among fishermen t.

Limitations encountered while conducting this study included difficulties in getting full cooperation and free time of the fishermen during data collection. This is as most fishermen were usually occupied with handling their catch as well as managing fishing gears at the jetty. This study suggested further research to have more preparation including doing enough pilot test prior to the interview.

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