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Traditional Handline Fishing in Pohuwato Regency, Indonesia

Lis M. Yapanto[1], Sitti Nursinar[2]
Gorontalo State University[1,2]
Jl. Jendral Sudirman No. 6 Kota Gorontalo, Indonesia
Correspondence Email: lizrossler@ung.ac.id

ABSTRACT

This study aims to determine the level of income of traditional handline fishing and its marketing efficiency in the Bumbulan Village, Paguat District, Pohuwato Regency, Gorontalo Province. This study used a survey method with questionnaires by interviews. The samples were selected by census of 33 fishermen. This study was conducted in December 2018 to October 2019. The results revealed the traditional handline fishermen average income is Rp. 4,073,030 per month. It is categorized as high income according to BPS (Central Bureau of Statistics).

Keywords: Handline Fishermen, Income, Marketing Efficiency

INTRODUCTION

A fishing community is a living environment of an individual or a family of fishermen. In other words, it is formed by a number of fishing households and each household is the living environment for others (Mantjoro in Watung, Dien, & Kotambunan, 2013). Life of fishing communities is a real situation that can be expressed through the efforts of those who are affected by fishing season, nature, limited capital and low education levels thus resulting in a weak socio-economic condition.

Handline fishing is one of fishery business with a simple construction and operation. This causes the rod back and forth to be one of the dominant fishing gears operated by using FADs as a tool for maximizing the catch (Kurnia, Sudirman, & Jhoseph 2010).

Bumbulan village is located in Paguat District, Pohuwato Regency, Gorontalo Province. Most residents of the village are fishermen (Bumbulan Village Profile, 2018). Some fishermen in the village this Bumbulan anyone doing business fishing using traditional fishing gear fishing rod back and forth, purse seine, using gear Chart and reef fishing gear.

RESEARCH METHOD

This research was conducted in December 2018 to October 2019, in Paguat District, Pohuwato Regency, Gorontalo Province.

Data Collection Method

This study used a survey method with questionnaires by interviews. The samples in this study are determined by census, with 33 fishermen as the respondents.

Data Analysis Method

Expenditure analysis is to measure the total amount of expenses for supplies, maintenance, and others. According to Soekartawi Budiman (2014), the expenditure calculation is formulated by the following formula.

$$TC = FC + VC$$

Where:
TC (Total Cost) = Total cost
FC (Fixed Cost) = Fixed costs
VC (Variable Cost) = Non-Fixed Costs

The expenditure includes the investment and operational costs. The investment cost consists of boats and engines, while operating costs consist of supplies, fuel, fishing, levies, pumped, and maintenance (Budiman, 2014).

Operating Revenue Analysis

An analysis of revenue is a quantity that measures the amount of fishing income earned in fishing effort. According Soekartawi (1995) in (Budiman, Vitello, & Asriyanto, 2014). The following formula is to calculate the income:

$$TR = P \times Q$$

TR (Total Revenue) = Total Income
P (Price) = Price to Sell
Q (Quantity) = Results of Catch

Advantage Analysis

Business advantage is influenced by revenue and costs. Therefore, fishermen are trying to get the fish in the maximum amount, probably by reducing expenses to the lowest to get the maximum benefit (Mohu, Salam, & Baruadi, 2016). This analysis is to determine the amount of profits gained from a business activity (Pratt, 2012). Mathematically, profits can be formulated as follows:

$$\pi = TR - TC$$

π = Profit
TR (Total Revenue) = Total revenue
TC (Total Cost) = Total cost

Marketing Efficiency Analysis

Marketing costs are costs incurred in marketing, distributing, and serving products or services (Huda, Solihin, & Lubis 2015). According to Soekartawi in Nuriati (2017), to determine the level of efficiency of fish marketing in each marketing agencies, the following formula is used:

$$EPs = \frac{Bp}{HE} \times 100$$

Eps= Efficiency Marketing
HE = Marketing Costs

Efficiency Criteria:
Eps <5%, meaning efficient
Eps> 5%, meaning Efficient

RESULTS AND DISCUSSION

Production Costs

Production Cost is expended during the process.

Fixed Cost

Fixed costs are those incurred in fixed amount, consisting of the cost of boats, engines and fishing gear. The cost of equipment is presented in Table 2.

Table 1. Average Fixed Cost

Commentary	Value / Month (USD)
Minimum	60 252
Maximum	461 389
Average	162.767

Data Sources: Primary Data Processed (2019).

According to Yanuartoro, Ismail, and Sardiyatmo (2013), the price of each unit differs one to another due to several factors, including the purchase year. No fishermen bought second-hand items, despite their yearly increasing price.

Variable Costs

Variable costs are one-time use costs on fishing. They fluctuate depending on fishing areas and fishing operations.

Table 2. Average Variable Cost

Commentary	Value / Month
Minimal	366,000
Maximum	1026.000
Average	637.273

Data Sources: Primary Data Processed (2019).

Total Cost (TC)

Total Cost (TC) is the whole costs in a business. The average value of the total cost is as follows.

Table 3. Average Total Cost

Cost type	The average Total Cost per month (USD)
Total Fixed Costs	204 268
Total Variable Cost	638 091

Total	**842 359**

Data Sources: Processed Primary Data (2019).

Table 3 reveals that the average value of the total cost is Rp. 842.359.

Total Revenue (TR)
According to Asriyanto (2014), revenues depend on the volume of the catch, the type and condition of the fish, and fish prices in the market. The sale value of fish does not depend on its size yet on its weight in kilogram. Revenue is obtained by multiplying the production by the sale price. The average revenue are as follows.

Table 4. Total Revenue

Commentary	Value / Month (USD)
Minimal	1760.000
Maximum	10920.000
Average	4073.030

Data Sources: Processed Primary Data (2019)

Level of Education
Higher level of education allows the fishermen to gain information on fishing techniques and decision making. It affects the adjustment of new technologies in fishing activities. However, this is not in line with Harahap (2003) arguing that education level does not have a significant effect on th income of traditional fishermen in the Fishermen Village of Labuhan, Medan. Similarly, Syahma (2016) contends that the educational background has no significant effect on the income of fishermen in the village Galesong, Takalar.

Table 5. Fishermen Revenue by Education

No.	Revenue per month (USD)	Education		Total
		SD	SMP	
1	≤ 5,000,000			0
2	5,000,001-1,000,000			0
3	1,000,001-1,500,000			1
4	1,500,001-2,000,000	1	1	2
5	2,000,001-2,500,000	1	2	3
6	≥ 2,500,001	17	11	27
Total		**19**	**14**	**33**

Source: Processed Primary Data (2019)

Respondents Age
Age is one factor that supports the fishermen activity, on their productive age (15-64 years old).

Table 6. Fishermen Revenue by Age

	Revenue per month (USD)	Age				Total
		10-20	21-30	31-40	> 40	
1	≤ 5,000,000					0
2	5,000,001-1,000,000					0
3	1,000,001-1,500,000					1
4	1,500,001-2,000,000				2	2
5	2,000,001-2,500,000			2	1	3
6	≥ 2,500,001		3	11	14	27
Amount			**3**	**13**	**17**	**33**

Source: Processed Primary data in 2019

Criteria Income According to BPS Based on the classification, the Central Statistics Bureau (BPS, 2014) distinguishes the income into 4 categories. They are:

1) Higher Income: more than Rp. 3,500,000.00 per month
2) High Income: Rp. 2.500.000,00 – Rp. 3,500,000.00 per month
3) Moderate Income: Rp. 1.500.000,00 s / d Rp. 2.500.000,00 per month
4) Low Income: Rp. 1.500.000,00 per month

Table 7. Fishermen Average Income

Group	Average Income per Month (USD)	Amount	Category
IV	1,500,000	0	Low
III	1,500,001-2,500,000	5	Moderate
III	2,500,001-3,500,000	12	High
I	> 3,500,001	16	Higher
	Total	33	

Source: Processed Primary Data, 2019

Based on the classification above, it is agreeable that the traditional fishermen of Bumbulan (Table 5) with a monthly average income of Rp 4,073.030, are categorized as higher-income workers. A great advantage can be obtained by reducing the operational costs. Profit (TR-TC) is the total revenue generated from total revenue minus total cost.

Profit (TR-TC)

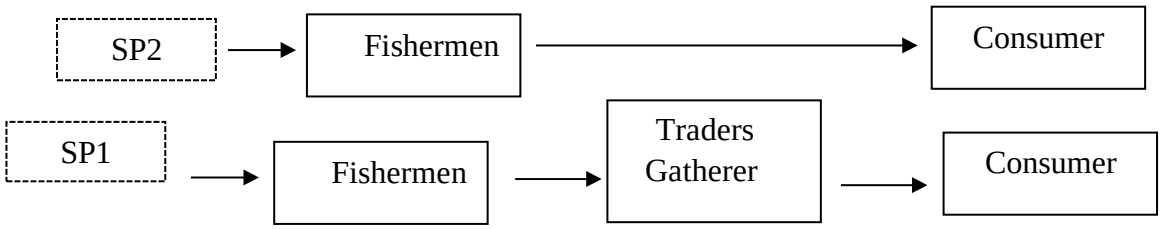
Table 8. Average Profit

Commentary	Average Rating (IDR) / Month
Total Revenue (TR)	4.07303 million
Total Cost (TC)	842.359
Profit	**3.230.671**

Sources: Processed Primary Data (2019).

Marketing Efficiency

Efficiency is using minimum resource with optimum results (Anggrahini, 2012), while according to Olii, A. H, Yapanto, L. M, & Akili, S. A (2019) marketing costs are those incurred in the movement of goods from producers to final consumers or any expenses for marketing purposes. These occurs after the items production and storage in a warehouse and until the product is converted back into cash. These comprise marketing, distributing, and serving products or services (Setiawan, & Suhadak, 2014). The flow chart below shows skipjacks marketing. According to Yapanto, L.M (2020) the margins of each marketing institution include retailers, traveling traders and traders gathering. The highest margin is the trader.



It reveals 2 marketing channels including direct marketing to consumers, and indirect marketing.

Table 9. Skipjack Marketing Efficiency

Channel	Marketing Efficiency (%)	Information
I	0	Efficient
II	55	Inefficient

Sources: Processed Primary Data (2019)

Table 10 shows the efficiency value of SP1 is 0%, this is because the groove is no current marketing costs pared to SP2. The efficiency value of SP2 proves its inefficiency. Based on the analysis of marketing efficiency fish, tuna has a value of marketing efficiency.

CONCLUSIONS

The discussion above conclude that:

1. The average revenue of the traditional handline fishing in Bumbulan Village is Rp. 4.073.030. This is categorized as higher income.
2. Marketing efficiency of traditional fishermen catch fishing effort stalling in the village in which to channel
3. Marketing channel 1 (Fishermen-Consumers) is efficient while marketing channel 2 (fishing- traders - consumers) are inefficient.

Eps value by 55% indicates that the fish marketing of traditional hand line fishing in Bumbulan with one type fish is inefficient. This is due to efficient products is efficient if the value of the marketing efficiency is less than 5%.

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