



Factors Affecting Fisherman's Income in Bone Regency

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Abstract. Fishermen are one of the important professions in this country, but their role cannot be. Bone Regency has many coastal areas that have potential for fisheries sub-sector, especially marine fishing. There are several factors that can affect the income potential of fishermen such as working capital factors, labor factors, work experience factors to technology factors. The formulation of the problem from this research is to find out how much influence working capital, labor, work experience and technology have on increasing fishermen's income in Bone Regency. The research method used in this study is a simple linear regression method by taking a sample of fishermen in Bone Regency of 100 respondents. By using the SPSS application, it was found that, simultaneously, working capital, labor, work experience and technology had a significant effect on increasing the income of fishermen in Bone Regency. Partially working capital, work experience and technology have no significant positive effect on increasing fishermen's income in Bone Regency, while labor has a significant positive effect on increasing fishermen's income in Bone Regency.

Keywords: Fishermen · Income · Working Capital · Technology · Labor · Work Experience

1 Introduction

In improving the welfare of the population, it can be done if the income of the population has increased enough to be able to meet the basic needs for life. This can be interpreted that the needs of food, clothing, housing, health, security, and so on are available and easily accessible to every resident so that in turn there are fewer and fewer poor people.

The fisheries sector is one of the government's targets in an effort to increase non-oil and gas exports, provide employment, a source of foreign exchange and for food nutrition. But from the other side, it can also be seen that the people who inhabit the coast who play an active role in the fishing business are largely not separated from the cycle of poverty that needs serious handling.

Fishery resources can potentially be used to improve the standard of living and welfare of fishermen, but in reality there are still quite a lot of fishermen who have not been able to increase their catches, so that the income level of fishermen does not increase.

The purpose of fisheries development in Indonesia in principle has two main targets, namely increasing production and increasing income in the fisheries sector. This is in line with efforts to improve fishermen's living standards and increase national fishery production which is directly or indirectly influenced by working capital factors, work experience and so on.

People who have a livelihood and earn income as fishing businesses are one of the community groups that carry out business activities by earning income from the fishing business activities themselves. Fishermen are individuals who are active in catching fish and other animals. The level of welfare of fishermen is largely determined by their catch. The catch is reflected in the amount of income received by fishermen, which is partly used for family consumption. Thus, the level of fulfillment of family consumption needs is largely determined by the income received. They also have a value system and cultural symbols as their daily reference. Some literature states that fishermen are a group of people who are classified as poor [1]. Even when compared to other community groups in the agricultural sector, fishermen (especially fishing laborers and traditional fishermen) can be classified as the poorest social layer, although it cannot be said that all fishermen are poor [2].

The development of the marine and fisheries sector is slow, because development policies are more oriented to the development of activities on land than in coastal and ocean areas. So that the exploration and exploitation of coastal and marine resources is neglected, and most coastal communities who work as fishermen still live below the poverty line [3].

Efforts made in relation to the agricultural sector development policy plan, in particular the fisheries sub-sector, aim to:

- Increase the production and quality of fishery products both to meet food. Nutrition and raw materials for domestic industry and export of fishery products.
- Increasing fishery business productivity and added value as well as increasing fishermen's income,
- Expanding job opportunities and business opportunities in supporting regional development,
- Improving the development of the sustainability of fishery resources and the environment.

With this fact, it is only natural that the potential of existing fisheries resources is developed for the benefit of the people's prosperity while maintaining and preserving these fishery resources, in addition to paying attention to the factors that support the production of the fishermen's business.

The Bone Regency area has a large enough marine and fishery potential. Bone Regency has many coastal areas that have potential for fisheries sub-sector, especially marine fishing. In the marine fisheries sub-sector the total number of fishing vessels is 3,301 units consisting of motor boats measuring 5 GT including boats without motors and outboard motors as many as 1,620 units, ships measuring > 5–10 GT as many as 155 units and ships measuring > 10 GT as many as 175 units... In addition, inland fishery production is generally carried out through aquaculture [4].

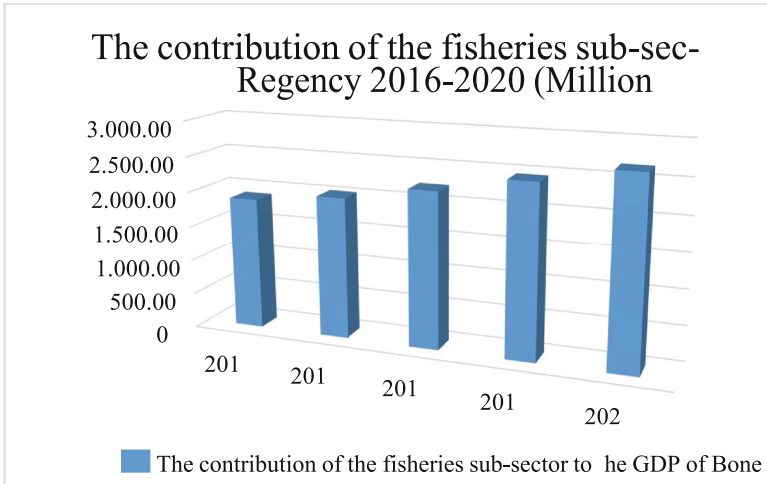


Fig. 1. Contribution of the Fisheries Sub-Sector to GDP of Bone Regency 2016–2020. Source: BPS Sulawesi Selatan Regional Province

The workforce and institutional potentials include 18,977 cultivators, 340 pokdakan and 1 fishery development unit (UPP), 9,397 fishermen, 226 KUB and 1 Joint Business Group Communication Forum (FKKUB) and there are 1 unit of fishermen’s cooperative, namely Mitra Mina Bahari Cooperative which oversees all fishermen in Bone Regency [5].

The contribution of the fisheries sub-sector to the GDP of Bone Regency from year to year continues to increase significantly [6]. This is because from year to year technology in the field of fisheries is growing and the level of sales prices is increasing. In 200116–2020 there was an increase, GRDP in 2016 was 786,319 million rupiah and increased in 2020 by 1284,149 million rupiah. As shown in the following Fig. 1 [7].

This study wants to observe and analyze the factors that influence the level of income of fishermen’s businesses in Bone Regency, namely working capital, labor, work experience, and technology.

The working capital factor is included in this study because income is strongly influenced by working capital. As we know that in the theory of factors of production the amount of output/production which means that it is related to income depends on working capital. This means that with working capital, fishermen’s businesses can go to sea to catch fish and then get fish. The greater the working capital, the greater the chance of the catch obtained [8].

The labor factor is included in this study because income is strongly influenced by labor. As we know that in the theory of factors of production the amount of output/production which is related to income depends on the number of workers.

The experience factor, this factor theoretically in books on economics, no one discusses experience is a function of income or profit. However, in fishing activities (production) in this case the fishing business will increase income.

Technological factors, fishermen in Bone Regency are divided into two namely modern fishermen and traditional fishermen, modern fishermen are fishermen who use sophisticated equipment and modern technology which is used to increase the productivity of fishermen whose results are expected to increase production, which implies the conclusion that the community will get higher income.

By taking into account the background and descriptions that have been disclosed, the problems to be analyzed in this study are:

1. How substance is the simultaneous influence of working capital, labor, work experience, and technology on fisherman business income in Bone Regency.
2. How substance the influence working capital has on fisherman business income in Bone Regency.
3. How substance the influence of labor on fisherman business income in Bone Regency.
4. How substance the influence does work experience have on fisherman business income in Bone Regency?
5. How substance the influence of technology on fisherman business income in Bone Regency.

2 Method

The method of analysis in this study is multiple linear regression analysis. The data used in this study is primary data originating from fishermen in Bone Regency where the data is obtained through distributing questionnaires where the data collection system is random (Random Sampling).

The number of samples in this study amounted to 98 people where these results were obtained using the slovin formula from the total population of fishermen which amounted to 18,977 people in Bone Regency.

Limitations or operational definitions of variables in this study are:

- Working capital in this study is fixed capital and movable capital owned by fishermen and the amount is estimated and then converted into units in rupiah
- The Labor in this study is the number of workers needed by fishermen in carrying out their work operations which are measured in units of the number of people.
- Work experience in this study is how long fishermen have been doing their jobs as fishermen, which is measured in years.
- The technology in this research is the presence or absence of technology used by fishermen, such as the use of GPS/the use of fish finder tools. This variable is measured using a dummy variable where the number 1 is used when fishermen use technology while the number 0 is used when fishermen do not use technology or are still traditional.

Framework

See Fig. 2.

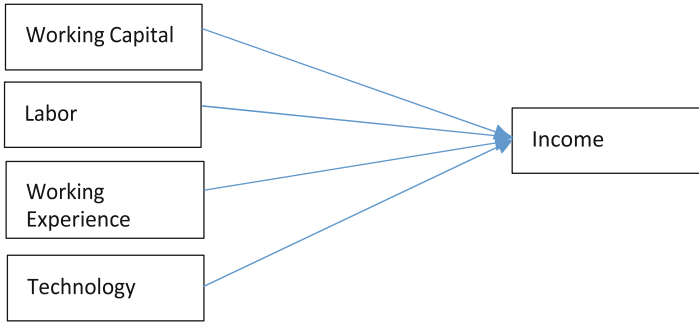


Fig. 2. Framework of the case

Hypothesis

By paying attention to the formulation of the problem, the hypothesis in this study are:

1. How substantial is the simultaneous influence of working capital, labor, work experience, and technology on fisherman business income in Bone Regency.
2. How substantial influence working capital has on fisherman business income in Bone Regency.
3. How substantial influence of labor on fisherman business income in Bone Regency.
4. How substantial influence work experience on fisherman business income in Bone Regency?
5. How big is the influence of technology on fisherman business income in Bone Regency.

3 Result

Validity Test

Validity test is to know the data in this study like variable working capital, labor, experience, technology and income was valid. We can see the data is valid or not in Table 1.

From the Table 1 the result of variable working capital, labor, experience, technology and Income in this study was valid because the results of R-Table in this variable is up to 0.254, that makes every variable in this study is Valid.

Reliability Test

From the Table 2 the result of variable working capital, labor, experience, technology and Income in this study was reliable because the results of Cronbach alpha in this variable is below of standard 0.6.

Classical Assumption Test

From Fig. 3 the data obtained follow a diagonal line so we can conclude that the data in this study is normal.

Table 1. Validity test

Variable	Pearson Correlation	R-Table	Explanation
Working Capital	0.518	0.254	Valid
Labor	0.557	0.254	Valid
Experience	0.644	0.254	Valid
Technology	0.496	0.254	Valid
Income	0.563	0.254	Valid

Source: Processed Data

Table 2. Validity Test

Variable	Cronbach Alpha	Standard	Explanation
Working Capital	0.518	0.6	Reliable
Labor	0.557	0.6	Reliable
Experience	0.644	0.6	Reliable
Technology	0.496	0.6	Reliable
Income	0.563	0.6	Reliable

Source: Processed Data

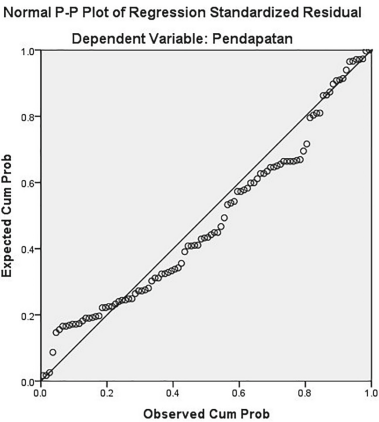


Fig. 3. Normality Test

Descriptive Statistics Test

Statistics in this study are used to provide information on research variables such as Working Capital, Labor, Work Experience, Technology and Income (Table 3).

Multiple Linear Regression Analysis

Based on Table 4, the regression model is obtained as follows:

Table 3. Statistic Test

	Mean	Standard Deviation	N
Working Capital	2914000.0000	1972437.34778	100
Labor	14290000.0000	3934552.96962	100
Experience	1.7100	1.09448	100
Technology	15.4700	7.78688	100
Income	.4400	.49889	100

Source: Processed Data

Table 4. Multiple Linear Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients					Collinearity Statistics
	B	Std. Error	Beta		T	Sig.	Tolerance	VIF
1	(Constant)	−386100.931	529135.705		−.730	.467		
	Working Capital	.033	.052	.066	.641	.523	.220	4.538
	Labor	1469705.305	186013.145	.816	7.901	.000	.220	4.554
	Working Experience	11772.003	12355.482	.046	.953	.343	.983	1.017
	Technology	299828.587	192974.154	.076	1.554	.124	.982	1.018

Source: Processed Data

$$\text{Growth} = -386100.931 - 0.033 \times 1(\text{Sig}.0523 + 1.469.705 \times 2(\text{Sig}.0,000) + 11,772 \times 3(\text{Sig}.0.953) + 299.828 \times 4 (\text{Sig}. 1.554) + e$$

Looking at the results of data processing the constant value of 1656,980 these results prove that if there is no influence of working capital, labor, work experience and technology then the income level of fishermen is 386,100, while working capital has a positive and insignificant effect on fishermen’s income, Labor has a positive effect and significant to fishermen’s income, work experience has a positive and insignificant effect on fishermen’s income, the role of technology has a positive and insignificant effect on fishermen’s income.

Simultaneous Test

Based on Table 5, it can be seen that the calculated F value (83.111) has a significance of $0.000 < 0.05$. So H0 is rejected and H1 is accepted. This means that simultaneously, the independent variables, namely X1 (Working Capital), X2 (Labor) X3 (Work Experience) and X4 (Technology) have a significant effect on the Y variable (Fishermen’s Income).

Table 5. Simultaneous Test Result (F-Test). ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	299558331491443.100	4	74889582872860.780	83.111	.000 ^b
	Residual	85602068508556.900	95	901074405353.231		
	Total	385160400000000.000	99			

^aDependent Variable: Income. ^bPredictors: (Constant), Working Capital, Labor, Working Experience, Technology

Table 6. Coefficient of Determination Test Results. Model Summary^b

Model	R R Square	Adjusted R Square	Std. Error of the Estimate	
1	.882 ^a	.778	.768	949249.39049

^aDependent Variable: Income. ^bPredictors: (Constant), Working Capital, Labor, Working Experience, Technology

Table 7. Parsial Test (T Test)

Model		Unstandardized Coefficients		Std. Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-386100.931	529135.705		-.730	.467		
	Working Capital	.033	.052	.066	.641	.523	.220	4.538
	Labor	1469705.305	186013.145	.816	7.901	.000	.220	4.554
	Working Experience	11772.003	12355.482	.046	.953	.343	.983	1.017
	Technology	299828.587	192974.154	.076	1.554	.124	.982	1.018

Coefficient of Determination Test (R²)

Based on Table 6 shows that R Square is 0.778 or 77.8% the variation in fishermen's income can be explained by variations of the four independent variables, namely Working Capital, Labor, Work Experience, and Technology. While 22.2% can be explained by other factors not included in this study (Table 7).

4 Discussion

Effect of Working Capital on Fishermen's Income

From the results of statistical tests, it is found that working capital has a positive and

insignificant effect on fishermen's income, these results prove that fishermen in Bone Regency in increasing their income are not too influenced by the amount of working capital of each fisherman. This result is not in accordance with the initial hypothesis where the initial hypothesis of this study explains that working capital has a positive and significant effect on increasing fishermen's income. This result is obtained because the majority of fishermen in Bone Regency are fishermen who are not owners of fixed capital because most fishermen in Bone Regency studied in this study are not owners of capital [9].

The same result was found by Lamia in his research on fishermen in Tumpaan District, South Minahasa Regency, finding that the working capital variable had no significant effect on fishermen's income [10].

Different results were found by Mappigau in his research on fishermen in Bambu Village, Mamuju District, finding that the most dominant working capital variable had an effect on fishermen's income in Bambu Village in Mamuju District with the lowest significant value of the others at 0.000 [11].

The Effect of Labor on Fishermen's Income

From the results of statistical tests, it was found that labor had a positive and significant effect on fishermen's income, these results proved that fishermen in Bone Regency in increasing their income through the number of catches needed other fishermen, which in this study found that they were assisted by relatives, ranging from children, cousins, or wherever in catching fish in the sea. This result is in accordance with the initial hypothesis where the initial hypothesis of this study explains that labor has a positive and significant effect on increasing fishermen's income [12].

The same result was found by Mappigau in his research on fishermen in Bambu Village, Mamuju District, finding that the Labor variable had a positive and significant effect on fishermen's income in Bamboo Village in Mamuju District with a significant value of 0.010.

The Effect of Work Experience on Fishermen's Income

From the results of statistical tests, it is found that work experience has a positive and insignificant effect on fishermen's income, these results prove that fishermen in Bone Regency are fishermen who have had long working experience not too influential on increasing their income, this result is due to income, which in this study it was found that they were assisted by relatives, ranging from children, cousins, or friends in catching fish in the sea. This result is in accordance with the initial hypothesis where the initial hypothesis of this study explains that work experience has a positive and significant effect on increasing fishermen's income [13]. The same result was found by Mappigau in his research on fishermen in Bambu Village, Mamuju District, finding that the Labor variable had a positive and significant effect on fishermen's income in Bamboo Village in Mamuju District with a significant value of 0.010.

The Effect of Technology on Fishermen's Income

From the results of statistical tests, it is found that technology has a positive and insignificant effect on fishermen's income, these results prove that fishermen in Bone Regency, fishermen who already have experience and good knowledge are not too dependent on

technology in carrying out their activities so that the role of technology has no effect on The increase in income, this result is due to technology, which in this study is the use of GPS fish finder, where fishermen in Bone Regency, still rely on local knowledge in finding fish. This result is different from the initial hypothesis where the initial hypothesis of this study explains that technology has a positive and significant effect on increasing fishermen's income [14].

Different results were found by Rahmasari in his research on fishermen in Semarang Regency who found that there was an influence of technology on fishermen's income by 0.218 and the significance was $0.010 < 0.05$, which means that if there is an increase in the influence of technology, the income of fishermen will increase [15].

5 Conclusion

The conclusions in this study are:

1. Simultaneously working capital, labor, work experience and technology have a significant effect on the income of fishermen in Bone Regency
2. Working capital variable has a positive but not significant effect on fishermen's income
3. Labor variable has a positive and significant effect on fishermen's income
4. Work experience variable has a positive but not significant effect on fishermen's income
5. Technological variables have a positive but not significant effect on fishermen's income.

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