

Determinant of Fisherman's Income in Kedung Subdistrict Jepara Regency

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Abstract

This study aims to analyze the influence of fishing technology on income through fishermen market access in Kedung Subdistrict Jepara Regency, analyze the effect of fishing capital on income through fishing market access in Kedung Subdistrict Jepara Regency, and analyze the effect of fishing experience on income through fishermen market access in Kedung Subdistrict Jepara Regency. The approach used in research is quantitative with quantitative descriptive research methods. The data source was chosen using the technique Simple Random Sampling. Data collection techniques were carried out by questionnaire. The analysis technique used is path analysis and sobel test. The results showed that fishing technology influences the income of fishermen through market access of $3,749 > 1.91$, capital of sea does not affect income through market access with a coefficient of $-0.515 < 1.91$, and experience of sea affects the income of fishermen through market access of $3,193 > 1.91$

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INTRODUCTION

Central Java is an area located on the islands of Java with abundant marine resources, so that many people are utilize coastal areas as the main livelihood. One of the districts in Central Java whose inhabitants work as fishermen is Jepara Regency. According to data from the Department of Maritime Affairs and Fisheries in

Jepara Regency in 2019 the largest number of fishermen are in Kedung Subdistrict, Jepara Regency, Central Java Province. The large number of fishermen in Kedung Subdistrict is not matched by the value of fish production. Data on the value of fish production per Subdistrict in Jepara Regency can be seen in the following table 1:

Table 1. Value of Fish Production per Subdistrict in Jepara

Subdistricts	Fish Production Value (Rp)			
	2015	2016	2017	2018
Kedung	3.146.786.000	278.010.000	1.072.500.000	1.501.380.000
Tahunan	347.335.354	363.230.177	379.125.000	250.800.000
Jepara	25.536.716.000	11.807.896.000	59.074.482.250	40.441.500.000
Mlonggo	4.108.872.566	166.125.800	2.306.862.000	1.183.500.000
Bangsri	137.700.000	185.120.610	268.100.000	282.000.000
Kembang	171.410.080	173.501.415	175.592.750	123.662.000

Source: Central Statistics Agency, 2019 with Modifications

The gap between the number of fishermen and the amount of production and value of fish production is certainly not in line between the toery and the facts in the field, namely toeri income which if the number of workers, tools or facilities are used the more the income will increase. Fishermen in Kedung Subdistrict are the lowest income fishermen in Jepara Regency. The following is the average amount of income per capita fishermen in Jepara Regency can be seen in the table below:

Table 2. Average Total Fishermen Percapita Income in Jepara Regency 2018

Subdistricts	Average Percapita Income (Rp)
Kedung	696.372
Tahunan	1.211.594
Jepara	2.393.554
Mlonggo	849.605
Bangsri	776.859
Kembang	856.946

Source: Processed Data, 2019

Kedung Subdistrict has income the lowest of the six subdistricts the residents work as fishermen with an average income of Rp 696.372. The lack of income of fishermen in the district kedung can be said to be the life of the fisherman not feasible yet. An income is said low if not reaching wages minimum set. Following wages

minimum district (UMK) jepara can seen in table 3 below:

Table 3. Need for Decent Living Wages Regency Minimum (UMK) Jepara

Year	UMK (Rp)
2017	1.600.000,00
2018	1.739.360,00
2019	1.879.031,00

Source: Department of Manpower, Transmigration and Population of Jepara Regency, 2019

The average income per capita of fishermen in the Kedung Subdistrict which is Rp 696.372, this figure is much smaller than the district UMK Jepara 2019 which is Rp 1.739.360. Is the gap between the number of fishermen with the amount of production and the value of fish production of course it doesn't match the thoery with the facts in the field that is the revenue chain if the amount of labor, equipment or facilities used more and more then income will increase.

The results of Syahma's research (2016) the experience of fishing has a negative and not significant effect means that the experience of fishing has no effect on the income of fishermen with a regression coefficient of -0.054. Further research Sukrin and Anwat (2017) working capital has a positive and significant effect on fishermen income of 0.300. The experience of going to sea

has a positive and significant effect on fishermen's income of 0.136 and technology has a positive and significant effect on fishermen's income of 0.536. In line with the results of research Widodo (2019) which found that the capital of the sea had a negative effect on the income of traditional fishermen of -0.041 and the technology of sea also had a negative effect of -0.023 on the income of the fishermen. Asrori Research (2019) found that the location ease variable has a significant positive effect on the market traders' income with a significance value of 0.027.

Based on the background of this study aims to analyze the effect of fishing technology on fishermen income through market access, analyze the effect of fishing capital on fishermen income through market access, analyze the effect of fishing experience on fishermen's income through fishermen market access.

METHOD

Method used in this research is descriptive by using a quantitative approach that aims to analyze the influence of fishing technology, capital at sea, and experience at sea through market access to fishermen income in Kedung Subdistrict, Jepara Regency (Sugiyono, 2009). This study uses the research design of the Hypothesis Testing Study, to test the influence between the hypothesized variables in the study (Wahyudin, 2015). The research data was taken from the calculation, measurement, and distribution of questionnaires directly in the field. The sampling technique uses the method Simple Random Sampling. The sample size in this study was calculated using the Slovin formula (Anugra, 2013). As the unit of analysis in this study were capture fishermen in Kedung Subdistrict, Jepara Regency, which were taken as research samples. Data analysis in this research was carried out using Path Analysis with sobel test.

The instrument test in this study is the validity and reliability test. Validity is a measure

that shows the level of validity or validity of an instrument and an instrument is said to be valid if it can uncover the data of the variable being studied appropriately. Reliability shows the understanding that an instrument can be trusted enough to be used as a data collection tool because the instrument is already good. Data analysis techniques in this research are descriptive analysis, classic assumption test, and hypothesis testing. Descriptive analysis is done so that the raw data obtained from respondents has meaning and meaning. The classic assumption tests performed are 1) normality test to see whether the data is normally distributed or not, 2) multicollinearity test to test whether the regression model found a correlation between independent variables namely the work group variables, experience experience, and market access, and 3) Test heteroscedasticity to test whether in the regression model there is a variance in variance from the residuals of one observation to another.

Hypothesis testing conducted is 1) Multiple regression test, namely 2) F test and 3) t test to see the effect together or simultaneously between independent variables on the dependent variable and t test to see the effect of variables partially. 4) Determination coefficient test to see the influence of the independent variable on the dependent variable. 5) Path Analysis test to see the flow or coefficient value between the independent variables to the dependent variable and 6) Multiple test tests to see whether there is an indirect effect between the independent variable and the dependent variable (Ghozali, 2011).

RESULT AND DISCUSSION

The results of this study will see the direct and indirect effects between the independent variables and the dependent variable through mediating variables. Structure II path diagram as follows:

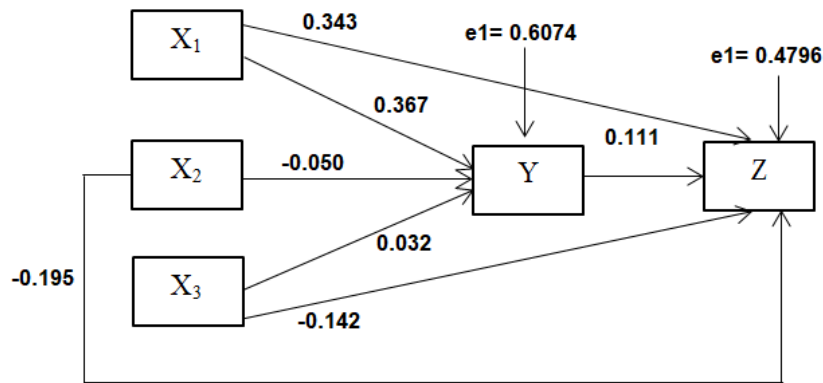


Figure 1. Structure Model II Path Analysis

Influence of fishing technology on fishermen income through market access path analysis model with market access variables as the mediator. The z value of the sobel test can be generated directly with manual calculations with the formula of the sobel test:

$$z = \frac{ab}{\sqrt{(b^2 SE_a^2) + (a^2 SE_b^2)}}$$

$$z = \frac{14.002 \times 17.147}{\sqrt{(17.147^2 \cdot 2.717^2) + (14.002^2 \cdot 3.137^2)}}$$

$$z = \frac{14.002 \times 17.147}{\sqrt{4099.8207678}}$$

$$z = \frac{240.092294}{64.0298428}$$

$$z = 3.749693635$$

From the results of the sobel test above the z value of 3,749 is obtained, because the z value obtained is 3,749 > 1.96 with a significance level of 5%, proving that the ninth hypothesis stating "There is an influence of capture technology on income through access the fishing market in Kedung Subdistrict, Jepara Regency" which was declared accepted. This means that market access is able to mediate the relationship of the influence of fishing technology on the income of fishermen.

Furthermore, the variable of sea capital (X₂) to the income of fishermen (Y) through market access (I) from the results of the first and second regression calculations is obtained. The z value of the sobel test by manually calculating the formula of the sobel test is:

$$z = \frac{ab}{\sqrt{(b^2 SE_a^2) + (a^2 SE_b^2)}}$$

$$z = \frac{-0.029 \times 17.147}{\sqrt{(17.147^2 \cdot 0.056^2) + (-0.029^2 \cdot 3.137^2)}}$$

$$z = \frac{-0.029 \times 17.147}{\sqrt{0.930321581}}$$

$$z = \frac{-0.497263}{0.964531794}$$

$$z = -0.5155485834$$

From the results of the calculation of the sobel test above the z value of -0.515 is obtained, because the z value obtained is -0.515 < 1.96 with a significance level of 5%, it can be said that the tenth hypothesis stating "There is an influence of sea capital to income through fishermen's market access in Kedung Subdistrict, Jepara Regency" Is denied, which means that market access is not able to mediate the relationship between the influence of sea capital on fishermen's income.

Furthermore, the sea experience variable (X₂) to fishermen income (Y) through market access (I). The model is formed from the results of the first and second regrestions so as to form a path analysis model Part Analysis with Market Access variables as its mediator. The z value of the sobel test generated directly from calculations manually with the formula of the sobel test is:

$$z = \frac{ab}{\sqrt{(b^2 SE_a^2) + (a^2 SE_b^2)}}$$

$$z = \frac{20.421 \times 17.147}{\sqrt{(17.147^2 \cdot 5.189^2) + (20.421^2 \cdot 3.137^2)}}$$

$$z = \frac{20.421 \times 17.147}{\sqrt{12020.460298}}$$

$$z = \frac{350.158887}{109.63786}$$

$$z = 3.193777104$$

From the results of the sobel test above the z value of 3,193 is obtained, because the z value obtained is 3,193 > 1.96 with a significance level of 5%, proving that the eleventh hypothesis stating "There is an influence of fishing experience on income through access the fishing market in Kedung Subdistrict, Jepara Regency" was

accepted. This means that market access is able to mediate the relationship of the influence of sea fishing to fishermen income.

The ninth hypothesis in this study is "There is an influence of fishing technology through market access to fishermen income in Kedung Subdistrict, Jepara Regency". Based on the results of the path analysis test using the sobel test the z value of 3,749 was obtained, because the z value of $3,749 > 1.96$ with a significance level of 5% proved that the ninth hypothesis was accepted. This means that market access is able to mediate the relationship of the influence of fishing technology on the income of fishermen in Kedung Subdistrict, Jepara Regency.

The more sophisticated the technology used by fishermen will further increase their production results so that fishermen get higher incomes (Arliman, 2013). The use of technology will affect the level of income that will be obtained (Mulyadi, 2005).

The results of this study are in accordance with the opinion of Sastrawidjaya (2002) which states that service activities will be more effective and efficient if asking for an easy market, ease of reaching the market will facilitate fishermen in selling their catch. Difficulties in transporting the results of transportation to the market will be the cause of the low prices of sea products in the area. Then it was strengthened by Sumolang's income (2017) which stated that the increase in the industrial sector in the form of working capital, technology, raw materials, and labor that were interspersed with increasing market access would facilitate the company in selling its products.

The tenth hypothesis in this study is "There is an influence of capital going to sea through market access to fishermen income in Kedung District, Jepara Regency". From the calculation of the sobel test on the results of the above hypothesis testing, the z value of -0.515 is obtained, because the z value of $-0.515 < 1.96$ with a significance level of 5%, it can be said that the tenth hypothesis is rejected, which means that market access is unable to mediate the relationship of the influence of capital to sea on the income of fishermen in Kedung Subdistrict, Jepara Regency.

Sea capital is all costs that must be incurred by fishermen to support fisherman activities

including to pay the costs or transportation costs of fish from the beach to the market or TPI either using transportation vehicles or using human labor. In accordance with the opinion of Sipahelut (2010) which states that moving capital is the costs allocated for the production process that can be used up in one time production such as fuel, ice cubes, cigarettes, food ingredients, and so forth.

These findings are not in accordance with the opinion of Prakoso (2013) which states that the lack of venture capital is the thing that affects the low income of fishermen. The greater the capital used will affect the amount of production produced (Ningsih and Indrajaya, 2015).

Next Sastrawidjaya (2002) states that service activities will be more effective and efficient if asking for the market is easy, the ease of reaching the kana market makes it easier for fishermen to sell their catch. Difficulties in transportation of produce to the market will be the cause of the low price of sea products in the area. Then it is also different from Sumolang's income (2017) which states that an increase in the industrial sector in the form of working capital, technology, raw materials, and labor that is jealous with an increase in market access will facilitate the company in selling its products.

The eleventh hypothesis in this study is "There is an influence of the experience of going to sea through market access to the income of fishermen in Kedung Subdistrict, Jepara Regency". From the calculation of the sobel test, the z value is 3,193, because the z value obtained is $3,193 > 1.96$ with a significance level of 5%, proving that the eleventh hypothesis stating "There is an influence of fishing experience on income through fishermen market access in Kedung District Jepara" was declared accepted. This means that market access is able to mediate the relationship of the influence of sea fishing to the income of fishermen in Kedung Subdistrict, Jepara Regency.

The experience of going to sea is a long time a fisherman undergoes his process as a fisherman. Whether or not a fisherman has experience is seen from his knowledge and skills as a fisherman. Knowledge of how to catch fish and knowledge of using fishing equipment.

Jamal (2014) who said that adequate experience of a fisherman will easily get his catch

because an experienced fisherman can know where the fish gather and catch them with his ability. Likewise with the opinion of Yusuf (2013) which states that the longer a person has experience as a fisherman, the greater the results of fish catches and the income earned.

In accordance with the opinion of Sastrawidjaya (2002) which states that service activities will be more effective and efficient if the market access is easy, the ease of reaching the kana market makes it easy for fishermen to sell their catch. Difficulties in transporting the results of transportation to the market will be the cause of the low prices of sea products in the area. Then it is also different from Sumolang's income (2017) which states that an increase in the industrial sector in the form of working capital, technology, raw materials, and labor that is jealous with an increase in market access will facilitate the company in selling its products.

CONCLUSIONS

The results of this study are first, there is an indirect effect between fishing technology variables on fishermen income through the fishermen's market access in Kedung Subdistrict, Jepara Regency. Secondly, there is no indirect effect between the variable of sea capital on the income of fishermen through the fishermen's market access in Kedung District, Jepara Regency. Third, there is an indirect effect between the sea experience variable on fishermen income through market access in Kedung Subdistrict, Jepara Regency.

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