International Journal of Social Science, Educational, Economics, Agriculture Research and Technology (IJSET) | ISSN (e) : 2827-766X
Volumes 4 No. 11 (2025)

POVERTY ANALYSIS OF FISHERMEN IN INDONESIA

Marjulia Riska Ukhra[1], Jariah Abubakar [2]
[1] Student at Development Economics Study Program Faculty of Economics and Besinins, Universitas Malikussaleh
[2]Development Economics Study Program Faculty of Economics and Besinins, Universitas Malikussaleh
Autor email: marjulia.200430038@mhs.unimal.ac.id
Corresponding author: jariah@unimal.id

Received	: 15 August 2025	Published	: 02 October 2025
Revised	: 25 August 2025	DOI	: https://doi.org/10.54443/ijset.v4i11.12060
Accepted	: 20 September 2025	Link Publish	: https://www.ijset.org/index.php/ijset/index

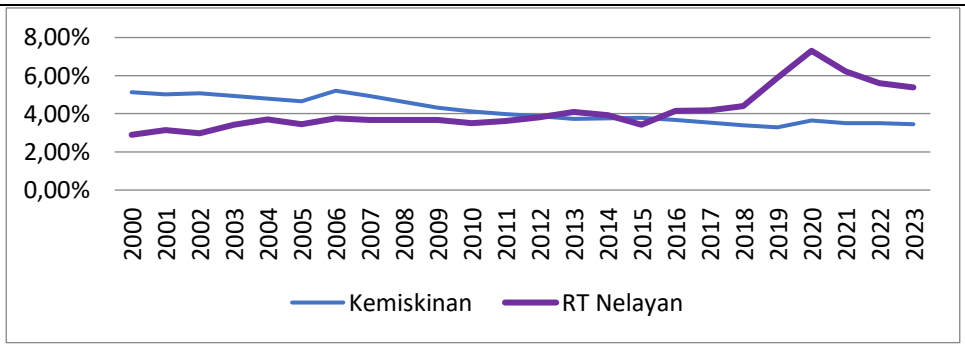
Abstract

This study was conducted to analyze the influence of fishermen's income, HDI, fishery production, and national fish consumption rates on fishermen's poverty in Indonesia. The research location was in Indonesia. This study used secondary data in the form of time series covering 24 years, from 2000 to 2023. Data processing was carried out using Eviews multiple linear regression analysis. The results of the study prove that, partially, the variable of fishermen's income has a negative and insignificant effect on fishermen's poverty, the variable of HDI has a positive and significant effect on fishermen's poverty, the variable of fishery production has a positive and insignificant effect on fishermen's poverty, while the variable of national fish consumption has a positive and insignificant effect on fishermen's poverty. Simultaneously, the variables of fishermen's income, HDI, fisheries production, and national fish consumption have a positive and significant effect on poverty in Indonesia.

Keywords: ***Poverty, Fishermen, Capture Fisheries, Multiple Linear Regression***

INTRODUCTION

Poverty in an economic context is often identified as a condition of human inability to access adequate resources and services. Uneven and unfair economic growth can exacerbate poverty. Poverty in Indonesia is closely linked to the condition of the waters and the livelihoods of fishermen. Environmental damage and declining fish catches can worsen the economic well-being of fishing households that rely on marine resources for their primary livelihood. According to the Ministry of Maritime Affairs and Fisheries (2024), a fishing household is defined as a person whose livelihood is fishing, whether in the sea, rivers, or lakes, with varying business scales and fishing gear ownership statuses. Fishing households play a vital role in the economy, particularly in coastal areas, but they also face various challenges, such as poverty, limited access to resources, and the impacts of environmental change. Their well-being is often affected by government policies and access to technology and markets. Many fishing households in Indonesia remain trapped in poverty, a situation caused by various interrelated factors, one of which is low levels of education and skills. Fishermen with minimal education often only have basic education, which limits their ability to access information and new fishing technologies (Rosalina *et al*., 2023). The limited education among fishing households due to a lack of access and opportunities for adequate education makes them less skilled in adopting new technologies or implementing more efficient fishing methods. This results in low productivity, resulting in smaller catches or suboptimal quality, which in turn limits fishermen's income. Low productivity also leads to low incomes (Adawiyah, 2020).



Data Source : BPS (2024) and KKP(2024)

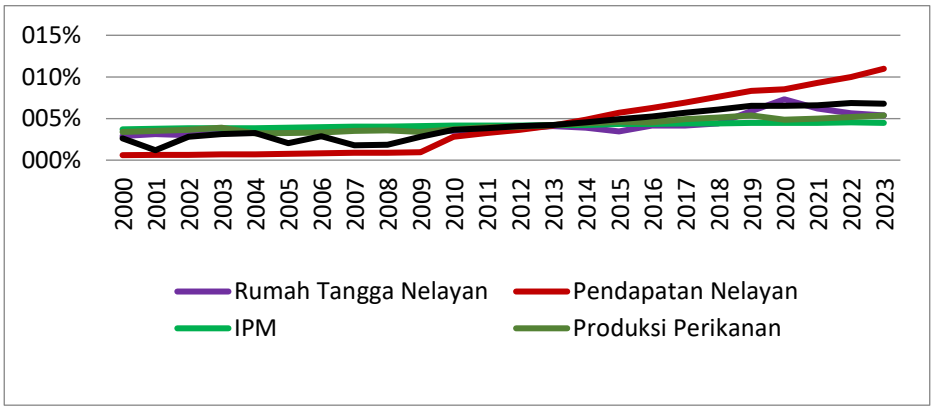
Figure 1 : Number of Poor Population and number of RTN in Indonesia, 2000-2023 (%)

Fishermen's income in Indonesia from 2000 to 2023 was influenced by various factors, including seasonal changes, economic conditions, and government policies. Fishermen's income in Indonesia from 2000 to 2009 was far from adequate. Although the fisheries sector has significant potential, poverty still plagues many fishermen. Based on the data graph above, fishermen's income in Indonesia in 2000 was 0.63%, or IDR 30,410.60 billion, with a poverty rate of 5.14% and a recorded number of fishing households of 3.14%. This occurs due to the low quality of human resources among fishermen, including education and health levels, which leads to low productivity. This has implications for low wages due to low productivity (Nainggolan *et al*., 2021).

The Human Development Index (HDI) in Indonesia has shown a significant upward trend, reflecting the government's efforts to improve the quality of life of the people. In 2000, Indonesia's HDI was recorded at 3.70%, with the number of fishing households at 2.90%. This figure reflects the large population of fishermen involved in the fishing sector, which is a vital pillar of Indonesia's maritime economy. The fisheries sector not only contributes to the income of coastal communities, but also negatively impacts per capita income and the community's quality of life (Sari *et al.,* 2022). Capture fisheries production in Indonesia continued to increase in 2000 until 2003. With the number of capture fisherman households reaching 2.99% or around 490,097 fisherman households and the poverty rate also decreasing from 2000 to 2005. This shows the complex relationship between natural resources and community welfare. The utilization and increase in the number of fishing gears is inversely proportional to the catch per unit effort (CPUE). Data shows that despite the increase in the number of fishing gears, catches tended to decline in 2000 due to overexploitation of the waters and surrounding areas, leading to overfishing. Then, in 2003, fisheries production increased by almost 4% compared to the previous year (Anas, 2016).

The highest capture fisheries production in Indonesia occurred in 2019 and 2023. This was due to increases in the quantity and quality of fishing gear used by fishermen. Research by Darmawan (2019) states that increasing the number of fishing gears will increase fish production, thereby improving community welfare. Then, in 2020, Indonesia's capture fisheries production declined compared to the previous year, despite an increase in the number of fishing households. According to data on key performance indicators from Kementrian Kelautan dan Perikanan (KKP), this decline in capture fisheries production was due to several factors, one of which was the COVID-19 pandemic, which halted almost all market activities (KKP Statistics, 2024). In 2002, the national fish consumption rate reached 2.79% and continued to rise until 2019, reaching 6.53%. This increase was driven by the "Gerakan Memasyarakatkan Makan Ikan" (GEMARIKAN) program, which aimed to raise public awareness of the importance of fish consumption as a source of high-quality protein. This was followed by the Ministry of Maritime Affairs and Fisheries' program, under the 2014-2019 Working Cabinet, which intensified the "Let's Eat Fish" campaign in an effort to increase fish consumption among the Indonesian population, which is still relatively low. The Let's Eat Fish campaign has successfully raised public awareness of the health benefits of consuming fish, which is rich in omega-3 and other essential nutrients. This awareness has led to increased demand for fish as part of a healthy diet (KKP, 2021).

Research (Lisda Rahmasari, 2017), which examined the Analysis of Consumption Patterns, Entrepreneurship, and Their Impact on Fishermen's Welfare, shows that consumption has a positive and significant impact on fishermen's welfare. Household incomes of fishermen in Indonesia generally vary widely and are influenced by several factors, including working capital, hours at sea, fish prices, and fishing technology. Research shows that fishermen's low incomes contribute to their poverty. In some areas, such as South Sibolga District, the level of income inequality in fishermen's distribution is low, but a significant proportion of fishermen still live in poverty. As can be seen from the graph above, when fishermen's income increases, poverty rates will decrease (Abdul, 2018). The following is an overview of data on fisher poverty, fisher income, HDI, capture fisheries production, and national fish consumption figures in Indonesia from 2000 to 2023:



Source : BPS (2024), KKP (2024)

Figure 2 : Fishermen's Households, Fishermen's Income, HDI, Capture Fisheries Production and National MMR (2000 – 2023)

In 2020, the number of fishing households experienced a drastic increase, reaching 7.1%, the highest figure compared to the previous year. In the same year, the poverty rate also increased, accompanied by a decline in fishermen's income, capture fisheries production, and national fish consumption. This was influenced by the COVID-19 pandemic in 2020, which significantly impacted economic performance, impacting poverty. The downward trend in poverty that had been occurring until the end of 2019 stalled. This phenomenon indicates that the majority of fishing households in Indonesia remain trapped in poverty. Unstable social and economic conditions, such as weather fluctuations and illegal fishing, further exacerbated their situation, pushing more people into the fishing industry despite unfavorable conditions (Adawiyah, 2020).

From 2021 to 2023, the poverty rate declined again following the COVID-19 pandemic, accompanied by increases in fishermen's income, capture fisheries production, and national fish consumption. Post-pandemic economic recovery began to appear in 2021, with economic activity rebounding. This contributes to improving community income and reducing the number of poor people (Nurhanisah, 2019). Furthermore, research (Krisnawati, 2018) shows that production levels have a very positive effect on poverty reduction; the higher the production level, the lower the poverty rate. Based on the ideas and phenomena listed above, the author chose the title of this research, namely "Analysis of Fishermen's Poverty in Indonesia."

LITERATURE REVIEW

Poverty

Poverty refers to an individual's inability to obtain the resources necessary for survival, such as food, clothing, and shelter, and an income below a certain poverty line. This term encompasses various forms, including absolute and relative poverty, as well as structural and extreme poverty (Heihe, 2022). According to the Central Statistics Agency (BPS), poverty is a condition of inability to meet basic needs, both food and non-food, as measured by expenditure. A person is categorized as poor if their expenditure falls below the poverty line, which is determined based on minimum needs (equivalent to 2,100 calories per capita per day plus non-food needs).

Fishermen's Poverty

Indraningsih and Noekman (1995) in (Jamilah & Mawardati, 2018) stated that the indicators of poverty used in fishing households are: (1) control of fisherman's production assets, namely based on ownership of fishing gear; (2) household expenditure patterns, both food and non-food; (3) sources of household income from fish catches or fisheries businesses (approximately 60 percent) and non-fisheries businesses (approximately 23 percent); and (4) fishing and non-fishing activities. Fishermen's poverty refers to the living conditions of fishermen who are unable to meet their basic needs due to various economic, social, and legal factors. As is known, fishermen are not a single entity. They consist of several groups, which, based on fishing gear ownership, can be divided into three groups: laborers, bosses, and individual fishermen. Laborers are those who work with fishing gear owned by others. Conversely, bosses are those who own fishing gear operated by others. Individual fishermen are fishermen who own their own fishing equipment and do not involve others in its operation (Hermawan, 2024).

Fishing Households

Fishing households refer to family units whose livelihoods depend on marine resources, particularly fishing. A fishing household is a household unit that engages in marine fishing activities, such as catching fish, shrimp, seaweed, shellfish, and coral reefs. The goal is to sell some or all of the catch (assuming the risk). A fishing household is a social and economic unit consisting of families involved in fishing activities, particularly fishing and seafood processing. Fishing households have unique characteristics, where activities to meet their needs are influenced by external factors such as weather conditions, seasons, and the availability of other resources. ut. Fishing households also face significant economic challenges due to unstable incomes and high operational costs. Socially, fishing households often form strong communities, where solidarity and community among members are key to overcoming various challenges (Yistiarani, 2020).

Fishermen's Income

Fishermen's income is the total economic value earned by fishermen from fishing and other activities related to the fisheries sector over a specific period, whether daily, weekly, or monthly. Fishermen's income generally comes from selling their catch, either at local markets or to collectors (Nainggolan *et al.,* 2021). Fishermen's income levels are influenced by various factors, such as fishing season, weather conditions, fish resource availability, and access to markets and technology. Fishermen's income is often a key indicator of the well-being of fishing families, where income fluctuations due to external factors such as climate change or fisheries policies can significantly impact their economic stability (Rijal *et al*., 2022). Fishermen's income plays a crucial role in supporting the economic well-being of fishing households and coastal communities.

Human Development Index

The Human Development Index (HDI) is a measure used to assess a country's progress in human development. The Human Development Index (HDI) is an indicator used to measure the level of human development in a country or region based on three main dimensions: health, education, and a decent standard of living. The HDI includes life expectancy to measure health, average years of schooling, and gross national income per capita to assess a decent standard of living. The HDI provides a more holistic picture of a population's well-being, looking not only at economic aspects but also at the overall quality of life. This index is used as a tool to evaluate development progress and as a comparison between countries or regions (Azfirmawarman *et al.,* 2023). Socially, poverty among fishermen is characterized by the low level of education of household members (generally elementary school level). Most fishermen can only afford elementary school education, and some even never attended school due to financial constraints and have been involved in fishing since childhood. Poverty can also be characterized by the poor health of household members. This can be seen in the daily diet and health care of household members. For poor fishing households, the daily diet still does not meet the four healthy five perfect menu (Jamilah & Mawardati, 2018).

Fisheries Production

Fishery production is an economic activity that involves catching, cultivating, and processing fish and other marine life to produce goods of economic value. In the context of capture fisheries, fisheries production includes fishing activities in the sea, rivers, or lakes, while aquaculture involves raising fish in ponds, fishponds, or cages. Fisheries production is highly dependent on environmental conditions, the availability of fish resources, fishing technology, and sustainable fisheries management policies.

National Fish Consumption Rate

The National Fish Consumption Rate is a measure of the average amount of fish consumed by each individual in a population over a specific time period, usually expressed in kilograms per capita per year. This measure reflects fish consumption patterns across the population and provides an overview of the contribution of fish to the community's diet. National fish consumption rates are important for understanding dietary trends, analyzing public health trends, and evaluating the impact of food and fisheries policies. In Indonesia, known for its rich marine resources, the national fish consumption rate not only demonstrates the role of fish as a primary source of protein but also serves as an indicator of the success of government programs promoting fish consumption and the sustainability of the fisheries industry. By understanding national fish consumption figures, we can evaluate how well communities utilize fish resources and whether there is a need for additional interventions or policies to promote healthy and sustainable diets (Virgantari *et al.,* 2022).

RESEARCH METHODS

Research Object and Location

The object is the issue that is the central topic of discussion. The object of this research is Fishermen Poverty as the dependent variable, while fishermen's income, the Human Development Index, Capture Fisheries Production, and National Fish Consumption Rates are the independent variables. The location of this research is Indonesia.

Data Type and Source

The type of data in this research is quantitative. The quantitative data in this study is time series data, covering 24 years from 2000 to 2023.

Data Collection Method

The researcher used a data collection method by collecting data provided by the Central Statistics Agency (BPS) and the Ministry of Maritime Affairs and Fisheries (KKP) websites. This data collection method involved reading and analyzing literature (Library Research). The research method employed direct citation of data from journals, books, and other information media officially published by an agency and validated for their accuracy. Documentation techniques were then applied, compiling information into data tabulations based on the results of data searches obtained from the specified data sources. The collected data was then analyzed using the statistical tool Eviews 12 to obtain the research results.

Data Analysis Method

The data in this study will be processed using a multiple linear regression analysis model, provided that the study meets the requirements for using a multiple linear regression analysis model. The study data will be analyzed using multiple linear regression. The study model used is:

$$\mathbf{Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 \ldots . + \beta nXn + e}$$

Y	= Dependent Variable
α	= Constant
β1, β2, β3, β4	= Coefficients
X1, X2, X3, X4	= Independent Variables
e	= Error Term

Equation 3.1 above can be used in this study with the following model:

$$\mathbf{RTN = \alpha + \beta 1PN + \beta 2IPM + \beta 3PP + \beta 4AKI + e}$$

RTN	= Fisherman Households
α	= Constant
β1, β2, β3, β4	= Coefficients
PN	= Fisherman's Income
HDI	= Human Development Index
PP	= Capture Fisheries Production
AKI	= National Fish Consumption Rate (AKI)
E	= Error Term

RESULTS AND DISCUSSION

Multiple Linear Regression

The analytical model used in this study is a multiple linear regression model. Multiple linear regression analysis is used to determine the relationship between two or more explanatory variables and a response variable. The multiple linear regression analysis model used in this study uses the Eviews program with the Ordinary Least Squares (OLS) method to determine the magnitude of the influence of one independent variable on the dependent variable.

Classical Assumption Test

Classical assumption tests in multiple linear regression are conducted to ensure that the model meets basic principles so that the analysis results are valid and reliable. These tests include a residual normality check to ensure the error distribution is approximately normal, a multicollinearity test to detect strong relationships between independent variables, a homoscedasticity test to check the consistency of residual variances, and an autocorrelation

test to ensure that the time series data are not correlated. By meeting these assumptions, the multiple linear regression model produces unbiased, efficient, and consistent parameter estimates.

Normality Test

In this study, the authors used the Jaerque-Bera (J-B) test to determine whether the regression model is normal. The Jarque-Bera (J-B) test is performed by examining the probability level. If the p-value is greater than the significance level (> 0.05), the residuals are normally distributed. Conversely, if the p-value is less than the significance level (≤ 0.05), the residuals are not normally distributed (Ghozali & Ratmono, 2017). This test was carried out using the Eviews 12 program by comparing the probability value (P value) and the significance level.

Source : Eviews results, processed data (2025)

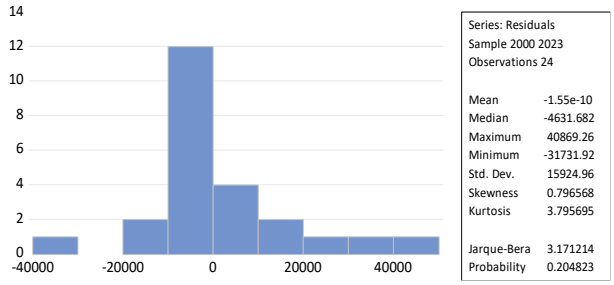


Figure 3 : Normality Test

Based on image 2 above, this model has a probability value of 0.204823, thus concluding that the data is normally distributed.

Multicollinearity Test

The multicollinearity test aims to determine whether the regression model detects a correlation between the independent variables. The basis for this test decision is that if the VIF value is >10, there is an indication of multicollinearity, and if the VIF value is <10, there is no indication of multicollinearity (Irfan Syahroni, 2023).

Table 1 Multicollinearity Results

Variance Inflation Factors
Date: 08/21/25 Time: 13:13
Sample: 2000 2023
Included observations: 24

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	9.67E+12	15312.38	NA
LOG(IPM)	9.64E+11	26988.65	6.036363
LOG(PP)	9.35E+10	11169.23	4.881024
LOG(AKI)	1.27E+10	243.9496	4.564019

Source: Eviews results, processed data (2025)

The figure above shows the results of the multicollinearity test using the correlation matrix. In this study, the independent variables are free from multicollinearity issues. This can be seen from the correlation values of each independent variable, which are below 10 or <10.

Autocorrelation Test

The autocorrelation test aims to determine whether a linear regression model contains confounding errors in period t with errors in period t-1 (the previous period). If a correlation occurs, it is considered an autocorrelation problem. The presence of autocorrelation symptoms in the regression results in the resulting model being unusable for the dependent variable values of certain independent variables. A good regression model is one that is free from autocorrelation.

Table 2 Autocorrelation Results

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	0.762859	Prob. F(2,16)	0.4826
Obs*R-squared	2.089342	Prob. Chi-Square(2)	0.3518

Source : Eviews, processed data 2025

The table above shows the Chi-Square Prob. (2) value, which is the p-value of the Breusch-Godfrey Serial Correlation LM test, at 0.3518. The Chi-Square Prob. (2) value is greater than the 5% significance level or 0.05, so it can be concluded that there is no autocorrelation problem in the regression model used.

Heteroscedasticity Test

The heteroscedasticity test is used to detect the presence of heteroscedasticity in this study by examining the probability values. The presence of heteroscedasticity causes the estimation of regression coefficients to be inefficient. A good regression model is one that is free from heteroscedasticity symptoms. Testing for heteroscedasticity is performed using the White Test. If the Obs*Rsquared probability value is greater than 0.05, heteroscedasticity does not occur (Irfan Syahroni, 2023).

Table 3 Heteroscedasticity Results

Heteroskedasticity Test: White
Null hypothesis: Homoskedasticity

F-statistic	1.444610	Prob. F(12,11)	0.2750
Obs*R-squared	14.68301	Prob. Chi-Square(12)	0.2592
Scaled explained SS	14.69809	Prob. Chi-Square(12)	0.2584

Source: eviews results, processed data (2025)

Based on Table 4.4, it can be seen that the p-value, indicated by the Chi-Square Prob., is greater than the 5% significance level, or 0.05 (0.2592 > 0.05). This indicates that there is no heteroscedasticity problem in the regression model used.

Multiple Linear Regression Analysis

The results of this study can be seen from the multiple linear regression output using Eviews 12 as the analysis tool in Table 4.5 below:

Table 4 Results of Multiple Linear Regression Analysis

Dependent Variable: RTN
Method: Least Squares
Date: 08/21/25 Time: 13:04
Sample: 2000 2023
Included observations: 24

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-13838833	6731046.	-2.055971	0.0538
LOG(PN)	-145701.8	127690.6	-1.141054	0.2680
LOG(IPM)	3184267.	1660200.	1.918001	0.0703
LOG(PP)	286038.7	359817.0	0.794956	0.4365
LOG(AKI)	107107.3	120850.4	0.886280	0.3865

R-squared	0.626732	Mean dependent var	683408.8
Adjusted R-squared	0.548149	S.D. dependent var	181736.1
S.E. of regression	122162.7	Akaike info criterion	26.44715
Sum squared resid	2.84E+11	Schwarz criterion	26.69258
Log likelihood	-312.3658	Hannan-Quinn criter.	26.51226
F-statistic	7.975437	Durbin-Watson stat	0.889155
Prob(F-statistic)	0.000598		

Source: Eviews results, processed data (2025).

From the table above, the results of the multiple linear regression analysis can be interpreted as follows:

Y = –13838823 – 145701.6 LOGPN + 3184264 LOGIPM + 286038.5 LOGPP + 107107.2 LOGAKI

Interpretation:

1. The regression equation shows a constant value of –13838823. This means that if the variables Fishermen's Income (PN), Human Development Index (HDI), Capture Fisheries Production (PP), and National Fish Consumption Rate (AKI) are constant (0), then Fishermen's Poverty (RTN) will has a constant value of -

13838823 units.

2. The coefficient value of the Fishermen's Income (PN) variable is -145701.6, meaning that if Fishermen's Income increases by 1%, Fishermen's Poverty (RTN) will decrease by -145701.6 units, assuming the Human Development Index (HDI) variable remains constant.
3. The coefficient of the HDI variable is 3184264, meaning that if the HDI increases by 1 percent, Fishermen's Poverty (RTN) will increase by 3184264 units, assuming the Capture Fisheries Production (PP) variable remains constant.
4. The coefficient of the Capture Fisheries Production (RTN) variable is 286038.5, meaning that if Capture Fisheries Production (PP) increases by 1 percent, Fishermen's Poverty (RTN) will increase by 286038.5 units, assuming the National Fish Consumption Rate (AKI) variable remains constant.
5. The coefficient of the National Fish Consumption Rate (AKI) variable is 107,107.2, meaning that if the national AKI increases by 1 percent, the Fishermen's Poverty Rate (RTN) will increase by 107,107.2 units, assuming the Fishermen's Poverty Rate (RTN) variable remains constant.

Hypothesis Testing

Hypothesis testing is a method of making decisions based on data analysis, either from controlled experiments or from observations (uncontrolled). Hypothesis testing is sometimes called "confirmatory data analysis." The determination of a hypothesis test is almost always based on testing the null hypothesis.

Partial Test Results

Hypothesis testing uses a t-test, using a confidence level (level of significance) of $\alpha = 0.05$ or $\alpha = 5\%$. The following criteria are used: If the t-statistic > t-table at $\alpha = 5\%$, then the hypothesis H0 is rejected and the hypothesis Ha is accepted. If the t-statistic < t-table at $\alpha = 5\%$, then the hypothesis Ha is rejected and accepts the hypothesis H0.

Tabel 5 Partial Test Results (Uji – t)

Independent Variable	t - Statistik	t – Tabel	Probabilitas	Information
Fishermen's Income (X1)	– 1. 141054	2, 093	0,268	Not Significant
IPM (X2)	1.918001	2, 093	0,070	Significant
Capture Fisheries Production (X3)	0.794957	2, 093	0,436	Not Significant
National Fish Consumption Figures (X4)	0.886279	2, 093	0,386	Not Significant

1. Fishermen's Income variable with a t-statistic of -1.141054 < t-table 2.093 and a probability value of 0.268 > 0.05. This indicates that Fishermen's Income has a negative and partially insignificant effect on the Fishermen's Poverty Level.
2. The Human Development Index (HDI) variable with a t-statistic of 1.918001 < t-table 2.093 and a probability value of 0.070 < 0.10. This indicates that the HDI variable has a positive and partially significant effect on the Fishermen's Poverty Level.
3. The Capture Fisheries Production variable with a t-statistic of 0.794957 < t-table 2.093 and a probability value of 0.436 > 0.05. This indicates that the Capture Fisheries Production variable has a positive and partially insignificant effect on the Fishermen's Poverty Level.
4. The national MMR variable has a t-statistic of 0.886279 < the t-table of 2.093 and a probability value of 0.386 > 0.05. This indicates that the national MMR variable has a negative and partially insignificant effect on the Fishermen's Poverty Level.

Simultaneous Test Results (F-Test)

The F-test is a test of the overall model. In principle, the F-test has a concept similar to the t-test. While the t-test is used to examine the influence of the dependent variable individually, the F-test is used to examine the influence of the independent variables on the dependent variable collectively. Hypothesis testing uses the F-test, using a confidence level (level of significance) of $\alpha = 0.05$ or $\alpha = 5\%$. The following decision criteria are used: if F-count > F-table at $\alpha = 5\%$, then hypothesis H0 is rejected and hypothesis H0 is accepted. If F-count < F-table at $\alpha = 5\%$, then hypothesis H0 is rejected and hypothesis H0 is accepted.

Tabel 6 Simultaneous Testing Results (Uji-f)

F – Statistik	F – Tabel	Probabilitas	Keterangan
7.975439	2,90	0.000598	Signifikan

Source : Ereviews results, data processed (2025)

Based on Table 4.7 above, it can be seen that the F-statistic is greater than the F-table (7.975439 > 2.90), meaning that simultaneously (together), the variables Fishermen's Income, Human Development Index (HDI), Capture Fisheries Production, and National Fish Consumption Rate have a positive and significant effect on Fishermen's Poverty (RTN) in Indonesia. This is also evident from the probability value being less than the alpha value of 0.05 (0.000598 < 0.05).

Coefficient of Determination (R2)

The coefficient of determination test, or R2 test, is used to measure the extent of the relationship between the independent variables and the dependent variable. The coefficient of determination value is between zero and one. If the Adjusted R-Squared value is closer to zero, it indicates a very weak relationship between the independent and dependent variables. If the Adjusted R-Squared value is closer to one, the relationship between the independent and dependent variables is very strong.

Table 7 Determination Coefficient Results

Adjusted R-Squared	0.548149

Source: eviews results, processed data (2025)

The table above shows that the Adjusted R-Squared value in this study is 0.548149. This means that the influence of the variables of fishermen's income, HDI, and capture fisheries production on Fishermen's Poverty (RTN) is 0.548149 (54.81%), while the influence of other variables outside this research model is 0.4519 (45.19%).

Correlation Coefficient (R)

The correlation coefficient is a value that indicates the strength of a linear relationship between two variables. The correlation coefficient value varies from -1 to +1. An r value approaching -1 or +1 indicates a strong relationship between the two variables, and an r value approaching 0 indicates a weak relationship between the two variables.

Tabel 8 Correlation Coefficient Results

R-squared	0.626732

Source : Ereviews results, data processed (2025)

Based on the table above, the correlation value (r) or R-Squared is 0.626732, indicating a strong positive relationship between the variables Fishermen's Income, Human Development Index (HDI), Capture Fisheries Production, and National MMR on Fishermen's Poverty (RTN). The correlation value in this study, 0.626732, is close to positive one (+1).

Discussion

The multiple linear regression model was selected for this study. Based on the results of the multiple linear regression estimation test in Table 4.6, the relationship between the independent variables and the dependent variable is explained as follows:

The Effect of Fishermen's Income on Fishermen's Poverty in Indonesia

The test of the effect of Fishermen's Income on Fishermen's Poverty in Indonesia shows that Fishermen's Income has a negative and insignificant effect on Fishermen's Poverty in Indonesia. This is demonstrated by the test results in Table 4.4. The Fishermen's Income variable has a coefficient value of -145701.6 and a significance value of 0.2680. This value is greater than the tolerance of error of 0.05. Theoretically, income can impact poverty. High income will reduce poverty, while low income will increase poverty. This is the case for Fishermen's Poverty in Indonesia. The negative coefficient value indicates that when fishermen's income increases, the poverty rate tends to decrease. However, this effect is not statistically significant because the significance value is greater than 0.05, meaning that an increase in fishermen's income has not been strongly proven to directly reduce poverty. This phenomenon may occur because most fishermen in Indonesia still face various structural challenges such as limited market access, unfair profit-sharing systems, low education, and exploitation by middlemen. Therefore, increased income has not been able to significantly reduce poverty levels (Tasya Natalia, 2024).

The Effect of the Human Development Index on Fishermen's Poverty in Indonesia

A test of the effect of the Human Development Index on Fishermen's Poverty in Indonesia found that the Human Development Index has a positive and significant effect. This is demonstrated by the test results in Table 4.4. The Fishermen's Income variable has a coefficient value of 3184268 and a significance value of 0.0703. This value is greater than the tolerance of error of 0.10. Theoretically, the Human Development Index will negatively affect poverty; an increase in the Human Development Index will decrease poverty (Febrianti *et al.*, 2024). In this study, the Human Development Index had a positive and significant effect on fisherman poverty in Indonesia. This occurs because the increase in the Human Development Index has not yet fully benefited fishing households. Fishing households still face the challenges of structural poverty, limited access to education and health care, and economic instability. Therefore, more specific policy interventions are needed to improve the welfare and quality of life of this group, such as strengthening institutions, access to capital, and increasing capacity and business diversification (Hidayati *et al.*, 2021).

The Effect of Capture Fisheries Production on Fishermen's Poverty in Indonesia

A test of the effect of capture fisheries production on fisher poverty in Indonesia found that capture fisheries production has a positive but insignificant effect. This is demonstrated by the test results in Table 4.4. The capture fisheries production variable has a coefficient value of 286038.5 and a significance value of 0.4365. This value is greater than the tolerance of error of 0.05. Increases in capture fisheries production often benefit only large-scale fishers, such as owners of large vessels, while small-scale fishers remain disadvantaged. Many fishermen remain poor despite increased catches because fish prices are low or they sell through middlemen rather than direct markets. Research has shown that when fish harvests are abundant, prices are low, so fishermen do not benefit from increased production but instead suffer losses due to decreased real income despite high catches (Jatim Newsroom, 2023).

The Effect of the National Fish Consumption Rate (AKI) on Fishermen's Poverty in Indonesia

The test of the effect of the National Fish Consumption Rate (AKI) on fisherman poverty in Indonesia found that capture fisheries production has a positive but insignificant effect on fisherman poverty in Indonesia. This is demonstrated by the test results in Table 4.4. The National Fish Consumption Rate (AKI) variable has a coefficient value of 107.107.2 and a significance value of 0.3865. This value is greater than the tolerance of error of 0.05. An increase in the National Fish Consumption Rate (AKI) will increase fisher productivity, which will impact poverty reduction. In this study, the National Fish Consumption Rate (AKI) did not significantly influence fisher poverty in Indonesia. This occurs because increases in national fish consumption do not always correlate directly with fishermen's economic conditions. Sometimes consumption increases because aquaculture is more reliable for providing fish for the national food supply, because aquaculture is easier for business actors to control, with regard to quality and quantity, resulting in greater aquaculture production compared to capture fisheries. This also includes an increase in fishery imports, distribution, or consumption in non-coastal areas, rather than from local fishermen's catches. Other factors such as catch distribution, selling prices, or the role of middlemen may have a greater influence on fisher poverty than the increase in the national AKI (KKP, 2021).

CONCLUSION

Based on the research results, the authors draw the following conclusions: The partial effect of fishermen's income on the fisherman poverty variable (RTN) in Indonesia is negative and insignificant. This is indicated by the t-statistic of -1.141054 < t-table 2.093 and a probability value of 0.268 > 0.05. The negative coefficient value indicates that as fishermen's income increases, the poverty rate tends to decrease. The effect of the Human Development Index (HDI) on fisherman poverty in Indonesia is positive and significant. This is indicated by the t-statistic of 1.918001 < t-table 2.093 and a probability value of 0.070 < 0.10. This is because the increase in the HDI during the 2000-2023 period was not fully enjoyed by the fishing community. The effect of Capture Fisheries Production on Fisherman Poverty in Indonesia is positive and insignificant. This is indicated by a t-statistic of 0.794957 < the t-table of 2.093 and a probability value of 0.436 < 0.05. This is because many fishermen still sell their catch to middlemen, rather than directly to the market. Consequently, the prices obtained are lower because middlemen have market power and control over prices, thus reducing fishermen's bargaining power. The effect of the National Fish Consumption Rate (AKI) on Fishermen's Poverty in Indonesia is positive and insignificant. This is indicated by a t-statistic of 10.886279 < the t-table of 2.093 and a probability value of 0.386>0.05.

REFERENCES

Abdul. (2018). Pengaruh Biaya Produksi Terhadap Pendapatan Petani Mandiri Kelapa Sawit Di Kecamatan Segah. *Jurnal Ekonomi STIEP*, *3*(2), 31–38.

Adawiyah, E. (2020). *Kemiskinan_Dan_Penyebabnya*. *1*(April), 43–50.

Anas. (2016). Potensi Lestari Perikanan Tangkap sebagai Basis Pengelolaan Sumberdaya di Kabupaten Pangandara. *Jurnal Penyuluhan dan Kelautan,* 10(2).

Aris. (2024). *Pengertian Kemiskinan: Jenis, Penyebab dan Dampaknya*. Gramedia Blocg.

Azfirmawarman dkk. (2023). Indeks Pembangunan Manusia Di Indonesia. *Jurnal Pendidikan dan Konseling (JPDK)*, *5*(5), 117–

Febrianti dkk. (2024). Analisis Dampak Indeks Pembangunan Manusia (IPM) Terhadap Tingkat Kemiskinan Di Provinsi Sumatera Utara (2017-2022). *Jurnal Multidisiplin Sosial Dan Humaniora*, *1*(1), 23–30.

Ghozali, (2021). Aplikasi Analisis Multivariate Dengan Program SPSS 26. I: *Badan Penerbit Universitas Diponegoro*.

Heihe, H. (2022). *Poverty in the United States*. *Evangelicals on Public Policy Issues*, *September*, 69–76. https://doi.org/10.2307/j.ctv310vn9p.10

Hermawan, Y. (2024). Ironi Kemiskinan Nelayan Di Destinasi Wisata Bahari. *Jurnal Pariwisata Indonesia*, *20*(1), 1–10. https://doi.org/10.53691/jpi.v20i1.408

Hidayati, I., *et al* (2021). *Aspirations of Fishermen's Families on the North Coast of Java for Children's Education. Society, 9*(2), 607–623. https://doi.org/10.33019/*society.*v9i2.329

Irfan Syahroni, M. (2023). Analisis Data Kuantitatif. I: *eJurnal Al Musthafa* (Bd. 3, Nummer 3). https://doi.org/10.62552/ejam.v3i3.64

Jamilah, & Mawardati. (2018). *Minapolitan: Perikanan Tangkap Dan Kemiskinan Rumah Tangga Nelayan*. 1–118.

Jatim *Newsroom*. (2023). *Produksi Perikanan Tangkap dan Ekspor Perikanan Jatim Tertinggi se Indonesia*. Dinas Kominfo Prov. Jawa Timur. https://kominfo.jatimprov.go.id/berita/produksi-perikanan-tangkap-dan-ekspor-perikanan-jatim-tertinggi-se-indonesia

KKP. (2021). Konsumsi Ikan Nasional. *Databoks.Katadata.Co.Id*,*2018*,1–7.

KKP. (2024). Korporasi Nelayan: Mewujudkan Nelayan Berdaya dan Sejahtera Menuju Indonesia Emas 2045.

Kumparan. (2019). *Peta Baru Laut Indonesia*. Kumparan.com.

Nainggolan, H. *et al* (2021). Analisis Dan Strategi Peningkatan Pendapatan Nelayan Tradisonal Di Kawasan Pesisir Kabupaten Serdang Bedagai Sumatera Utara. *Jurnal Sosial Ekonomi Kelautan Dan Perikanan*, *16*(2), 237.

Rijal, Hindaryatiningsih, N., & Sabrin. (2022). Analisis Faktor-Faktor Yang Mempengaruhi Pendapatan Nelayan. *Accounting: Jurnal Pendidikan Akuntansi*, *2*(3), 91–95.

Rosalina, T., & Ekomila, S. (2023). Pengetahuan Lokal Nelayan Tradisional Di Desa Kota Pari Kecamatan Pantai Cermin. *Jurnal Ilmiah Sosiologi Agama (JISA)*, *6*(2), 91.

Statistik-kkp. (n.d.). *Perikanan dan Kelautan*. statistik.kkp.go.id

Tasya Natalia. (2024). *Miris! Nelayan di RI Ternyata Makin Miskin*. CNBC Indonesia. https://www.cnbcindonesia.com

Virgantari, dkk (2022). Pemetaan Tingkat Konsumsi Ikan Rumah Tangga Di Indonesia. *Jurnal Sosial Ekonomi Kelautan Dan Perikanan*, *17*(1), 97.

Yistiarani, W. D. (2020). Kehidupan Masyarakat Pesisir di Indonesia. *BALAIRUNG: Jurnal Multidisipliner Mahasiswa Indonesia*, *2*(1), 6–12. https://jurnal.ugm.ac.id/balairung/article/view/64798