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Research Article

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Analysis of the Determinants of Poverty in the Province of Papua

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Abstract: *Poverty is still an interesting issue to discuss, because it is still a major problem faced by all countries, both developed and developing countries. This study aims to analyze the determinants of the poverty rate in Papua Province. The data used in this study are secondary data, while the analysis method used is the panel data regression method from 2017-2021 in Papua Province. This study uses dependent variables and independent variables, the dependent variable used is poverty and the independent variables include the Gini index, average years of schooling, construction cost index, and open unemployment rate. The results showed that the Gini index, construction cost index, and open unemployment rate had a positive and significant effect on the poverty rate in Papua Province, while the average years of schooling had a negative and significant effect on the poverty rate in Papua Province.*

Keywords: *construction cost, income inequality, poverty, underemployment, years of schooling.*

Introduction

Poverty is still a major problem faced by all countries, both developed and developing countries, especially Indonesia. One of the main problems is poverty due to the difficulty of meeting one's basic needs. Poverty is also a worldwide problem as it affects the economies of many countries. (Ferezegia, 2018). When an individual or group of individuals cannot achieve the degree of economic prosperity deemed necessary to maintain a particular standard of living, poverty is the result (Budianto, 2022).

According to *World bank* (2006) the definition of poverty is the loss of welfare (*deprivation of well being*). If poverty is linked to the level of welfare, then poverty can be interpreted as the inability to fulfill welfare, in other words, lack of access to resources to meet their needs. Poverty and household welfare have a close relationship, where poverty can have a negative impact on household welfare, The problem of poverty often occurs in developing countries that have a high level of population so that there is an inequality of community welfare that can trigger social inequality (Syamsul & Apriliani, 2023). Therefore, things that can cause poverty must be considered by the government because they have a huge impact on the country.

Poverty can occur Some people are unable to take part in the development process or benefit from its outcomes because economic actors have varying levels of aptitude. Poverty is also not only related to the amount of income levels but also from social, environmental and even empowerment and participation aspects (Marini, 2016).

The province of Papua was selected as the study site because based on data from BPS, Papua Province is in the highest position of the poorest provinces in Indonesia with 27.38%. in other words, 273-274 out of 1000 residents of Papua Province are classified as poor, when compared to the national average of only 9.71%, there is a large gap of 17.67%, indicating that the lives of people in Papua Province are still less prosperous, on the other hand Based on data from Kementerian ESDM (2021) Papua Province is one of the provinces that has maximum natural resource wealth in the mining sector, amounting to 3.2 billion tons of gold and copper ore, which should help launch economic activities in the province, but in contrast to the

reality, that the province of Papua has not moved from its backwardness and is still the province that is the furthest behind and has the highest poverty rate in Indonesia.

One of the factors that cannot be separated from poverty is Income Inequality (Tambunan, 2001). High levels of inequality or unequal income distribution prevent economic growth from flowing to the lower classes. It is worse if the growth is only enjoyed by the rich (*pro-rich*). A vicious circle becomes inevitable. Such high growth increases inequality while increasing poverty (Yusuf, 2015).

Inequality plays an important role in policy making in developing countries, as economic development tends to prioritize economic growth, leading to an increase in the level of inequality that occurs. Income inequality arises along with the rapid pace of economic growth, an increase in economic growth will reduce the level of income inequality and conversely a decrease in economic growth will increase the level of income inequality, so the two things are interrelated. These two problems cannot be separated from the crucial problem in developing countries, which is poverty (Oktaviani et al, 2022).

The education factor is also a major factor in the increase in poverty, the lack of educational facilities in remote areas causes the existing human resources to still have a very low level of knowledge and skills so that they are not able to find a decent livelihood (Abdul Aziz et al., 2016). There exists a strong correlation between poverty and education. The longer one attends school, the more opportunities it presents for personal growth through the acquisition of new skills and knowledge. Additionally, prolonged education fosters an appreciation for human dignity. So that it can reach a better future (Riva et al., 2021).

Construction Cost Index can be one of the factors of high poverty in a region, a high Construction Cost Index illustrates the poor condition of infrastructure in an area, poor infrastructure results in the accessibility of the area being very difficult so that mobilization becomes low and has an impact on the economic activities of a country or region, so that it will hamper the area in the process of human development in a country or region (Rahmadhani, 2019). The level of human welfare will be lower if the level of construction is higher. Vice versa, if human welfare increases, the value of construction costs will decrease (Muda et al., 2014).

There is one problem in the labor sector besides the unemployment rate that can also affect the level of community welfare, namely the existence of underemployment (Tambunan et al., 2021). Many in the labor force are working or have the opportunity to work, However, their working hours are shorter than usual. Due to a lack of job possibilities and the fact that they are impoverished and cannot afford to be unemployed for extended periods of time, they are compelled to work fewer hours in order to make ends meet. However, other people choose to work fewer hours because they find it more fulfilling. It goes without saying that those who work full time will benefit financially. The income received from working part-time or underemployed will obviously be less than from working regular hours, which will have an impact on their ability to attain benefits (Marhaeni et al, 2015).

Method

This research is quantitative research with the method used is panel data. Panel data is data collected from several objects and several times. This panel data is obtained from a combination of time series data and data from several objects at one time (cross section). In this study, panel data is in the form of Poverty data based on Income Inequality (Gini Ratio), Average Years of Schooling, Construction Cost Index, and Underemployment Rate from 29 Districts / Cities in Papua Province for 5 years from 2017 to 2021. The data source used by the author is secondary data, which can be obtained from agencies, libraries, and other parties and sources. In this case the secondary data used in the study were obtained from the Central Statistic Agency.

Panel data is analysis using three models, namely Common Effect Model, Fixed Effect Model, and Random Effect Model. Of the three models, testing can be done first to select a model that is suitable for use between the Common Effect and Fixed Effect using the Chow test. If the chow test results are significant (F-statistic > F-count or P-value < α 0.05) then the Fixed effect model is used and proceed to the Random Effect model, and if the results are not significant (F-statistic < F-count or P-value > α 0.05) then the model that should be used is common effect model and there is no need to proceed to the random effect model.

The next test is to test between the Fixxed Effect and Random Effect models using the Hausman test to select a model that is suitable for use in the final estimate. If the Hausman test results are significant (chi-sq statistic > chi-sq table or P-value < α 0.05) then the model that should be used is Fixed Effect, and if the Hausman test results are not significant (chi-sq statistic < chi-sq table or P-value > α 0.05) then the model that should be used is Random Effect.

In addition to using the three analysis models above, researchers also conducted statistical tests including the Coefficient of Determination (R2), testing regression coefficients together (F-statistic test), and testing regression coefficients individually (t-statistic test). On the basis of several tests that have been carried out by researchers using the chow test and hausman test, the Fixed Effect model is a suitable model for the final estimate.

The equation model can be written as follows:

$$Yit = \beta 0 + \beta 1GRit + \beta 2RLSit + \beta 3IKKit + \beta 4STPit + \varepsilon it$$

Keterangan :

Y	: Poverty Rate (percent)
GR	: Income Inequality (Index)
RLS	: Average Years of Schooling (Years)
IKK	: Construction Cost (Index)
STP	: Underemployment (Percent)
$\beta 0$	: Constanta
$\beta 1, \beta 2, \beta 3, \beta 4$	: Independent Variable Coefficient
ε	: error

Results And Discussion

Chow Test

The purpose of this test is to identify if the fixed effect model or the common effect model should be used in research. The fixed effect model is employed when the p-value for the Chow test is less than 0.05. In the meantime, the Common Effect model is employed if the p-value is not significant> 0.05.

Effects Test	Statistic	d.f.	Prob.
Cross-section F	591.802203	(28,112)	0.0000
Cross-section Chi-square	725.524085	28	0.0000

The Chow Test findings indicate that the fixed effect model is superior to the common effect model, with a chi-square statistical value of 725.524085 and a probability value of 0.0000 <0.05 obtained from the aforementioned Chow Test regression data.

Hausman Test

Between the fixed effect model and the random effect model, the Hausman test is used to determine which estimating model is superior. The Hausman test relies on the p-value; if it is less than 0.05, then the Fixed Effect model is applied. Conversely, the Random Effect model is employed if the p-value is not significant>0.05.

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	13.377218	4	0.0096

Obtained a chi-square statistical value of 13.377218 and a probability value of 0.0096 <0.05 obtained from the Hausman Test regression above, it can be concluded that the fixed effect model is better than the random effect model.

T-Statistic Test

The T-Statistic test aims to show how much influence between the independent variables individually in explaining the related variables by comparing the probability with the α value of 0.05, it can be seen whether the hypothesis rejects or fails to reject the t test results. The results of the t test in the fixed effect model table are as follows.

Variable	Coefficient	t-Statistic	Prob.	Desciption
C	9.366040	1.865360	0.0647	significant
GR	2.696926	2.328954	0.0217	significant
RLS	-0.396161	-2.253814	0.0262	significant
IKK	3.766113	4.272756	0.0000	significant
STP	0.012697	2.535544	0.0126	significant

According to the results of the t-statistic test, the probability values for the income inequality, average years of schooling, construction cost, and underemployment are 0.0217, 0.0262, and 0.0126, respectively. All of these values are less than 0.05, indicating that all of the variables have a significant impact.

F-Statistic Test

F test shows whether all independent variables have the same effect on the dependent variable), if F count ≥ F table or F significance ≤ 0.05 (α = 5%), it can be determined that the independent variables affect the dependent variable simultaneously.

F-Statistic	Prob.	Desciption
1304.156	0.0000	significant

The f-statistic value contained in the fixed effect model table is 1304.156 with a probability value of 0.0000 <0.05. meaning that together they are significant to poverty in Papua Province.

R-Squared Test

The coefficient of determination (R2) is 0.897323 or 89.73 percent. This indicates that the building cost index, average years of education, underemployment, and the Gini Index variable may all affect or

explain 89.73 percent of changes in the Poverty variable. Other variables account for the remaining 10.27 percent of changes in the Poverty variable.

Income inequality on poverty rate

With a coefficient value of 2.696928, the gini index variable has a positive and significant impact on the poverty rate in Papua Province, as demonstrated by the Fixed Effect Model's regression results. This means that a one index unit increase in the gini index will result in a 2.696928 percent increase in the poverty rate. The findings of this investigation are consistent with previous research by Rizqiana (2019), namely the gini index variable has a positive and significant effect on the poverty rate. This means that if the gini index rate decreases, it will have an impact on decreasing the poverty rate in Papua Province.

Average years of schooling on poverty rate

According to the Fixed Effect Model's regression results, the average years of schooling variable has a significant and negative impact on the poverty rate in Papua Province. Its coefficient value is -0.396161, which means that a one-year increase in average years of schooling will result in a 0.396161 percent decrease in the poverty rate. The findings of this study are consistent with those of research by Taufiqurrahman (2022), namely the average length of schooling variable has a negative and significant effect on the poverty rate. This means that if the higher the education taken, the possibility of someone being classified as poor will decrease.

Construction cost on poverty rate

With a coefficient value of 3.766113, the construction cost index variable has a positive and significant impact on the poverty rate in Papua Province, as demonstrated by the Fixed Effect Model's regression results. This means that a one index unit increase in the construction cost index will result in a 3.766113 percent increase in the poverty rate. The findings of this investigation are consistent with previous research by Jasaputri (2022) that the construction costliness index variable has a positive and significant effect on the poverty rate, which means that if you want to reduce the poverty rate, you have to reduce the value of the construction costliness index. A high construction costliness index indicates the poor infrastructure of an area, so that the accessibility of the area is difficult and mobility is low, which has an impact on the economy.

Underemployment on poverty rate

With a coefficient value of 0.012697, the underemployment variable has a positive and significant influence on the poverty rate in Papua Province, based on the Fixed Effect Model regression results. This means that for every 1% increase in the level of open underemployment, there will be an increase in the poverty rate by 0.012697 percent. The findings of this study are consistent with research conducted by Meimela (2019), namely the variable level of underemployment has a positive and significant effect on the poverty rate. This means that if the level of underemployment decreases, it will have an impact on decreasing the poverty rate in Papua Province.

Conclusion

Based on the previously provided explanation of the independent variables influencing poverty levels in Papua Province, The test findings allow for the following deductions to be made:

The Gini index variable has a positive and significant effect on the poverty rate in Papua Province 2017-2021. This means that if the Gini index variable increases, it will result in an increase in the poverty rate. In this problem, the role of the government is needed to alleviate it through programs related to the creative economy or micro, small and medium enterprises to the community, maximizing the use of natural resources, providing production factors, and increasing inter-sectoral linkages to produce more equitable development, so that not only areas engaged in industry and trade have low poverty rates.

The average number of years spent in education has a substantial and unfavorable impact. This implies that as the average length of schooling rises, the poverty rate in Papua Province will decline. The author suggests that in order to improve the quality of human resources and decrease poverty, the government should make educational facilities more comfortable for students and provide training and support to teachers. Additionally, schools should be made free for families that cannot afford to send their children to school.

The construction costliness variable has a significant positive effect on the poverty rate in Papua Province 2017-2021. Which means that an increase in the construction cost index will increase the poverty rate. It is anticipated that the government would be able to upgrade the infrastructure that is still insufficient, since well-developed infrastructure will stimulate economic growth. If economic activity in an area is smooth, it will provide opportunities to increase income so that it is hoped that community participation to work and increase income can reduce poverty.

The poverty rate is positively and significantly impacted by the underemployment variable. It implies that the poverty rate will rise if underemployment rises. The advice that the author can give is that the government must participate in overcoming this problem by creating jobs, conducting training or improving the quality of labor. So that people have soft skills or abilities that are competitive so that they can increase production which has an impact on increasing income.

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