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THE INFLUENCE OF EDUCATION, POPULATION GROWTH, UNEMPLOYMENT, AND INCOME INEQUALITY ON THE PERCENTAGE OF POOR POPULATION IN REGENCIES/CITIES IN PAPUA PROVINCE

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Abstract. Poverty is a multidimensional issue in development, as addressing it involves challenges that go beyond the causal relationships underlying poverty. It also entails considerations of preferences, values, and politics. This study aims to analyze the simultaneous and partial effects of education, population growth, unemployment, and income inequality on the percentage of the poor population in Papua Province. The data used in this research is secondary data from 2017 to 2021, covering 29 regencies/cities in Papua Province. The data analysis technique employs panel data regression using the Eviews 12 software. The results of the study show that education, population growth, unemployment, and income inequality simultaneously influence the percentage of the poor population in regencies/cities in Papua Province. Furthermore, it is found that, partially, the variables of education, population growth, and unemployment have a negative and significant effect, while the income inequality variable has a positive and significant effect on the percentage of the poor population in the regencies/cities of Papua Province.
Keywords: Percentage of poor population, education, population growth, unemployment, income inequality

INTRODUCTION

Poverty in Indonesia not only affects the quality of life of the population but also has an impact on the national economy. Poor people have limited ability to contribute to the economy, thus affecting economic growth and employment opportunities. The problem of poverty in Indonesia is limited access where there is a lack of access to education, health, and infrastructure. The existence of income gaps such as the difference in income between the rich and the poor is getting bigger. Then the rapid population growth also worsens poverty.

Table 1. Percentage of Poor Population by Province 2021-2023

Province	Percentage of Poor Population		
	2021	2022	2023
Aceh	15.53	14.75	14.45
North Sumatra	8.49	8.33	8.15
West Sumatra	6.04	6.04	5.95
Riau	7.00	6.84	6.68
Jambi	7.67	7.70	7.58
South Sumatra	12.79	11.95	11.78

Bengkulu	14.43	14.34	14.04
Lampung	11.67	11.44	11.11
Bangka Belitung Islands	4.67	4.61	4.52
Riau islands	5.75	6.03	5.69
Jakarta	4.67	4.61	4.44
West Java	7.97	7.98	7.62
Central Java	11.25	10.98	10.77
DI. Yogyakarta	11.91	11.49	11.04
East Java	10.59	10.49	10.35
Banten	6.50	6.24	6.17
Bali	4.72	4.53	4.25
West Nusa Tenggara	13.83	13.82	13.85
East Nusa Tenggara	20.44	20.23	19.96
West Kalimantan	6.84	6.81	6.71
Central Kalimantan	5.16	5.22	5.11
South Kalimantan	4.56	4.61	4.29
East Kalimantan	6.27	6.44	6.11
North Kalimantan	6.83	6.86	6.45
North Sulawesi	7.36	7.34	7.38
Central Sulawesi	12.18	12.30	12.41
South Sulawesi	8.53	8.66	8.70
Southeast Sulawesi	11.74	11.27	11.43
Gorontalo	15.41	15.51	15.15
West Sulawesi	11.85	11.92	11.49
Maluku	16.30	16.23	16.42
North Maluku	6.38	6.37	6.46
West Papua	21.82	21.43	20.49
Southwest Papua	-	-	-
Papua	27.38	26.80	26.03
South Papua	-	-	-
Central Papua	-	-	-
Papua Mountains	-	-	-
Indonesia	**9.71**	**9.57**	**9.36**

Source: Central Bureau of Statistics (2024)

It can be seen from data from the Central Statistics Agency that the percentage of the total poor population in Indonesia in 2022 was 9.57 percent. Then in 2023 the poverty rate in Indonesia was recorded in March 2023 at 9.36 percent with around 25.9 million poor people (BPS, 2023). This data shows that there was a decrease of 0.21 percent from September 2022

and 0.18 percent from March with the number of poor people decreasing by 0.46 million people. If we look at the comparison of Papua with other provinces, the data above shows that Papua Province has the highest rate among the 37 other provinces in Indonesia. Papua has a poverty rate in 2021 of 27.38 percent. However, in 2023 the poverty rate in Papua showed a decrease to 26.03 percent. Although the poverty rate in Papua shows a decrease, the poverty rate in Papua is still the highest. The high poverty rate in Papua is because the area has been left behind for quite a long time or it can be said that Papua still does not receive much attention from the government. This shows the need to conduct research to determine the factors that influence the percentage of poor people in Papua Province.

One of the factors that influences poverty is education.The relationship between poverty and education is close, where poverty can affect access to education, and vice versa. This phenomenon is seen in many communities with low economic conditions who have difficulty getting adequate education, from elementary to higher education. There is also a group of individuals who can access basic education but are ultimately forced to stop their education. Ultimately, this situation will affect long-term economic development in society (Vistalia A. & Sukadana, 2023).

The level of education has an influence on poverty reduction, this is because low levels of education are one of the components that cause poverty. Development in the field of education is an important aspect that needs to be done by the government to reduce poverty. Through investment in education, it will be able to improve the quality of human resources, through increasing skills and knowledge, so that it will encourage increased productivity of a person, with increased skills, knowledge and productivity owned, it will increase the income received which will lead to increased community welfare and reduced poverty.

One indicator in seeing whether or not the level of education in a country/region is good can be seen through the average length of schooling. The average length of schooling is used to identify the level of education graduation of the population in a region. Papua Province is the province with the lowest Average Length of Schooling value in Indonesia, as can be seen in table 2.

Table1. Provinces with the Lowest Average Length of Schooling in Indonesia (in Years)

No.	Province	2020	2021	2022	2023
1.	Papua	6.96	7.05	7.31	7.34
2.	NTB	8.08	8.13	8.31	8.39
3.	West Kalimantan	7.9	8	8.1	8.18
4.	NTT	8.09	8.2	8.25	8.31

Source: BPS, 2024

The Average Length of Schooling in Papua Province has always increased from year to year. In 2019, the Average Length of Schooling in Papua Province reached 6.85 years, in 2020 it increased to 6.96 years, in 2021 it increased to 7.05 years, and in 2022 it increased to 7.31. In 2023, the average length of schooling in Papua Province reached 7.34 years. Education in Papua Province is an important part of Indonesia's national development. However, Papua Province still faces various challenges in the implementation of education that need to be addressed immediately. Difficult geographical conditions, security factors, suboptimal policies, and challenges in teacher recruitment are some of the main problems affecting education in Papua Province. One of the main challenges to education in Papua Province is the very diverse and challenging geographical conditions. The Papua Province area, which mostly consists of wilderness and mountains, makes access to education difficult, especially for isolated communities in the interior. The inadequate educational infrastructure in this region is a major obstacle in providing adequate access to education for the entire community (Bappeda Papua, 2024).

There are several influencing factors that cause the vicious cycle of poverty, such as education, health, and lifestyle. The risk of becoming poor is also influenced by the level of education or education. People who are less educated are poorer and poor people have fewer opportunities to get an education (Ruzhdie, 2017). Papadakis (2020); Lavrinovicha (2015) revealed that education has a positive and significant effect on poverty, but the findings of Didu et al. (2016); Putri et al. (2011); Amalia (2017); Iqraam and Sudibia (2019); Umoru, D Evelyn (2018) revealed that education has a negative and significant effect on poverty.

Meanwhile, it is known that another factor that influences poverty in a country or region is population. Population growth in the development efforts of a region is a core issue, because uncontrolled population growth can hinder the achievement of economic targets, such as community welfare and poverty reduction. In the context of poverty, the presence of a large population can actually worsen the poverty rate. This fact is evident in most countries with large populations, where poverty rates tend to be higher than countries with smaller populations (Vistalia A. & Sukadana, 2023). A country is said to be poor if it is usually characterized by a low per capita income, has a high population growth rate (more than 2 percent per year), most of the workforce is engaged in the agricultural sector and is trapped in a vicious circle of poverty (Yulianto, 2018).

Rapid population growth can cause serious problems for welfare, therefore the large population if not balanced by high economic support will cause various problems such as poverty and instability of the national condition as a whole (Rohani, 2016). According to Lincolin, uncontrolled population growth will cause various problems and obstacles to the efforts made, because high population growth will cause a rapid increase in the number of workers, while the ability of the region to create new job opportunities is very limited (Arsyad, 2010: 267). An increase in population can hinder the economic development process of a

country or region. Thus causing low regional per capita income which ultimately results in an increase in the number of poor people (Solihin, 2018).

Rapid population growth can make it difficult for a region to implement change or development. Many large families still face difficulties in increasing income. Limited available resources make population growth a serious threat. These resources play an important role in supporting the future of the region, including the quality of the people who live there. Therefore, the contribution of educated and highly skilled people is needed to support the development process of the region.

Indonesia's population growth is one of the strategic issues affecting national development. With a population of around 280 million in 2024, Indonesia will become the fourth most populous country in the world. The relatively high population growth rate of 1.10 percent per year poses challenges in managing natural resources, providing infrastructure, and basic services such as education and health. Likewise, Papua Province is one of the regions with the highest population growth in Indonesia. With a population of around 3.5 million in 2022, Papua has a population growth rate of 2.93 percent per year, higher than the national average. This population growth is influenced by demographic, economic, and geographic factors.

Table2. Population Growth of Papua Province 2019-2021 (Percent)

Regency	Year			
	2019	2020	2021	Average
Merauke	0.75	1.61	0.44	0.93
Jayawijaya	1.35	3.13	1.85	2.11
Jayapura	2.5	3.9	1.85	2.75
Nabire	1.61	2.59	1.4	1.87
Yapen Islands	3.89	3.01	1.82	2.91
Biak Numfor	2.69	0.58	0.58	1.28
Paniai	2.32	3.57	1.85	2.58
Peak Jaya	2.53	8.02	1.85	4.13
Mimika	1.95	5.35	1.85	3.05
Upper Digoel	2.21	1.38	0.89	1.49
Mappi	3.71	2.77	1.58	2.69
Asmat	1.97	3.58	1.85	2.47
Yahukimo	0.95	7.61	1.85	3.47
Star Mountains	1.87	1.7	0.52	1.36
Tolikara	1.03	7.3	1.85	3.39
Sarmi	2.81	2.25	1.07	2.04
Keerom	2.33	2.34	1.16	1.94
Warp	2.95	3.15	1.85	2.65

Supiori	3.46	3.45	1.86	2.92
Greater Mamberamo	3.34	6.87	1.85	4.02
Nduga	1.11	2.93	1.74	1.93
Lanny Jaya	0.74	2.74	1.56	1.68
Central Mamberamo	0.23	2.43	1.25	1.3
Yalimo	2.44	6.98	1.85	3.76
Peak	1.82	2.03	0.85	1.57
Dogiyai	1.36	3.16	1.85	2.12
Diamond Jaya	0.99	12.36	1.85	5.07
Deiyai	0.98	4.62	1.85	2.48
Jayapura City	0.81	4.35	1.85	2.34
Papua Province	**1.71**	**4.13**	**1.61**	**2.48**

Source: BPS Papua, 2024

Based on the table above, it can be seen that population growth in Papua Province has fluctuated. The average population growth in Papua Province in 2019-2021 was 2.48 percent. The highest average population growth was in Intan Jaya Regency, which was 5.07 percent. This shows that this growth will have an impact on poverty if the population does not have a high capacity to produce and absorb its production.

Another factor that influences poverty here is unemployment. The high unemployment rate is a reflection of the lack of successful development in a region. The increasing poverty rate is the impact of the high unemployment rate, the more unemployment there is, the higher the poverty rate in a region and vice versa. The Covid-19 pandemic case has become an international problem that has a negative impact on human life and is still being handled very seriously. Every sector of human life is disrupted, including the economic sector. In the economic sector, many changes have occurred, causing an economic downturn in several countries including Indonesia. The implementation of large-scale social restrictions (PSBB) and social distancing have caused changes in the behavior of both producers and consumers. Changes in producer behavior are triggered because it is impossible for the production process to be carried out in order to break the chain of transmission of Covid-19, and so are consumers who do not choose to buy goods (Santika, 2020).

High unemployment rates are certainly not good for a country's economy. People who are unemployed cannot meet their daily needs. The unemployment rate is the percentage of the workforce who are looking for work. While the labor-force participation rate is the percentage of a group of adult individuals who are included in the workforce (Mankiw, 2014:101). According to Odeh and Okoye's research (in Meo, 2018), unemployment is the main reason why people live below the poverty line in most economies (Cahyani and Marhaeni, 2022). Unemployment can occur due to an increase in the number of new workers each year, while

the available job opportunities do not increase. This problem is becoming more serious because population growth continues to increase rapidly and in very large numbers.

The open unemployment rate from 2019 to 2021 according to district/city in Papua province is still the highest in Jayapura City, while the lowest open unemployment rate is in Yalimo district. Based on the figure, it can be seen that there are still many unemployment rates in districts/cities in Papua province (BPS Papua Province 2024).

The findings of Mangi and Marseto (2023) revealed that poverty is caused by unemployment. Likewise, research conducted by Ningtias and Anwar (2021) revealed that unemployment has a positive impact on poverty. Different research findings were revealed by Erumban and de Vries (2024), Unemployment has a negative and significant impact on poverty. Research by Badu et.al, (2020) shows that the variables of economic growth and unemployment have a positive and significant impact on poverty in six provinces in Sulawesi.

In developing countries, economic problems often occur, especially in Indonesia, income inequality is often a serious problem. Although national development efforts have been implemented by the government to overcome economic injustice, this gap is still widening, especially reflected in the high levels of poverty and income inequality in various regions of Indonesia. The problem of income inequality is a measure of the income received by each community. Economic development is a process that causes an increase in real income per capita of a country's population in the long term accompanied by improvements in the institutional system (Arif & Wicaksani, 2017). When development inequality arises, income differences arise.

Income inequality is an important issue for development in every country. Income inequality is related to the distribution of income that will be received by the community in a country. High income inequality means that the distribution of income in society is increasingly uneven. This condition will ultimately widen the gap between people with relatively good economic levels and those with low incomes (Febriyani & Anis, 2021).

Countries with lower inequality and higher income countries show a greater ability to translate a given level of growth into poverty reduction. They will also enjoy greater inequality elasticities, indicating that rising inequality will be more damaging to poverty in these countries than in low-income countries. In particular, low-income countries will in turn require greater efforts in both income growth and inequality reduction to reduce their poverty rates. Yet, it is these countries that must urgently reduce their poverty rates.

The increase in income inequality is mainly the result of higher income percentiles having faster income growth than lower income percentiles; the decrease in income inequality implies faster income growth among lower income percentiles. For example, in China, Luoa, Lib, and Sicularc (2020) found that one of the main drivers of the increase in income inequality in China was the change in the relative importance and distribution of various components of household income. As a share of household income, agricultural income, which has an

equalizing effect, declined in the first three decades, and wages increased over time, especially in rural areas.

Income inequality can be seen using the Gini index or Gini ratio calculation method, where the Gini ratio is a measure to describe the level of income inequality, where the higher the Gini coefficient value, the higher the level of income inequality, conversely, the lower the Gini coefficient value, the more even the level of income distribution.

Table3. Gini Ratio by Province in Eastern Indonesia 2019-2023

Province	Year				
	2019	2020	2021	2022	2023
West Nusa Tenggara	0.374	0.386	0.384	0.374	0.375
East Nusa Tenggara	0.355	0.356	0.339	0.340	0.325
North Sulawesi	0.376	0.368	0.359	0.359	0.37
Central Sulawesi	0.33	0.321	0.326	0.305	0.304
South Sulawesi	0.391	0.382	0.377	0.365	0.377
Southeast Sulawesi	0.393	0.388	0.394	0.366	0.371
Gorontalo	0.41	0.406	0.409	0.423	0.417
West Sulawesi	0.365	0.356	0.366	0.371	0.351
Maluku	0.32	0.326	0.316	0.306	0.288
North Maluku	0.31	0.29	0.278	0.309	0.3
West Papua	0.381	0.376	0.374	0.384	0.37
Papua	0.391	0.395	0.396	0.393	0.386
Amount	**0.366**	**0.362**	**0.359**	**0.358**	**0.352**

Source: Central Bureau of Statistics (2024)

Based on the table above, it can be seen that the Gini ratio in the Eastern Indonesia Region (KTI) from 2019 to 2023 has fluctuated, where inequality in the Eastern Indonesia Region in 2019 averaged 0.366, decreasing in 2020 by 0.004 to 0.362. In 2021, the Gini ratio decreased again to 0.359. In the following year, the Gini ratio decreased to 0.358 in 2022. In 2023, the Gini ratio of the Eastern Indonesia Region was at 0.352, decreasing by 0.006 from the previous year. Likewise, the Gini ratio of Papua Province fluctuated from 2019 to 2023. In 2019, the Gini ratio of Papua Province was at 0.391, increasing to 0.395 in 2020. In the following year, the Gini ratio of Papua increased again by 0.001 so that in 2021 it became 0.396. Then in 2022, the Gini ratio decreased by 0.393 and in 2023, the inequality of Papua Province decreased to a ratio of 0.386. This is due to the uneven distribution of economic growth in the districts/cities of Papua Province.

Research findings by Aini and Nugroho (2023) Income inequality has a positive but insignificant effect on poverty in East Java Province in 2013-2020. And research by Cendanawangi et al., (2020) which shows that income inequality has a positive but insignificant effect. This states that the more even the distribution of income in a country is,

the more it can reduce poverty but is not yet able and not strong enough to influence poverty. In contrast to research conducted by Nisa et al., (2020) and Obambi et al., (2020) that income inequality has a significant effect and positive relationship with poverty levels. This means that when income inequality increases, it will affect the increase in poverty levels in a region.

There are different research findings related to poverty on education, population growth, unemployment and income inequality. Therefore, it is important to conduct this research to determine the influence of education, population growth, unemployment and income inequality on poverty in Regency/City in Papua Province.

RESEARCH METHODS

This study uses a quantitative approach method in the form of associative. The research method is associative, namely research used to find the effect of independent variables on dependent variables (Rahayu, 2021). This study was conducted to determine the effect of education, population growth, unemployment and income inequality on the percentage of poor people in Papua Province. The location of this research was conducted in Papua Province, this location was chosen because Papua Province has the highest percentage of poor people in Indonesia compared to other provinces.

The method used to collect this data is by means of non-behavioral observation. This non-behavioral observation is observationi collect data that has been made available by agencies or institutions such as the Central Statistics Agency of Papua Province, where the researcher is not directly involved. This data collection is done by observing, recording and studying descriptions from books, scientific works such as theses, articles and documents.

The data analysis technique used in this study is the panel data analysis method. This analysis method is a method that combines cross-time (time series) and cross-regional (cross section) data. The cross-section data in this study are 29 districts/cities in Papua Province and the time series data used are 2017-2021. So there are 29 cross sections and 5 time periods which in total there are 145 observations.:

RESULTS AND DISCUSSION

Descriptive Statistics

Table 5. Descriptive Statistics Results

Variables	N	Minimum Value	Maximum Value	*Mean*	Standard Deviation
Education (X1)	145	0.7100	11,5700	6,0107	3.011912
Population Growth (X2)	145	0.2300	12,3600	2,2865	1.626759
Unemployment (X3)	145	0.1100	13,3900	3,4732	3.280879
Income Inequality (X4)	145	0.1770	0.4600	0.3391	0.064489

Percentage of Poor Population (Y)	145	10,0300	43,6500	28,8820	9.737333

Source: data processed with eviews 12, 2024

Based on the results of descriptive statistics, it was found that the sample size was 145 according to the range of years in the research data, namely 2017 to 2021. The education variable (X1) has a minimum value of 0.71, a maximum value of 11.57, and a mean of 6.0107. The standard deviation of education (X1) is 3.011912. The population growth variable (X2) has a minimum value of 0.23, a maximum value of 12.36, a mean of 2.2865, and a standard deviation of 1.626759. The unemployment variable (X3) has a minimum value of 0.11, a maximum value of 13.39, and a mean of 3.4732. The standard deviation of unemployment is 3.280879. The income inequality variable (X4) has a minimum value of 0.17, a maximum value of 0.46, a mean of 0.3391 and a standard deviation of the income inequality variable of 0.064489. Furthermore, the percentage of poor people (Y) variable has a minimum value of 10.03, a maximum value of 43.65 and a mean of 28.8820. And the standard deviation of the percentage of poor people is 9.737333.

Panel Data Regression Model Selection

a) Chow Test On Fixed Effect Model

Table 6. Chow Test Results

Redundant Fixed Effect Tests
Equation: Untitled
cross-section fixed effects test

Effects Test	Statistics	df	Prob.
Cross-section F	660.674958	(28.83)	0.0000
Cross-section Chi-Square	627.687901	28	0.0000

Source: data processed with eviews 12, 2024

The results of the chow test in table 6 show a cross-section chi-square probability value of 0.0000 <0.05 so that H1 is accepted. So the appropriate method for conducting a regression test in the study is the fixed effect model.

b) Hausman Test on Random Effect Model

Table 7. Hausman Test Results

Correlated Random Effects- Hausman Test
Equation: Untitled
Cross-section random effects test

Test Summary	Chi-Sq. Statistic	Chi-Sq.df	Prob.
Random cross section	9.521158	4	0.0493

Source: data processed with Eviews 12, 2024

It can be seen that the probability of the cross-section chi-square probability is 0.0493 <0.05 so that H1 is accepted. So the appropriate method to conduct a regression test in the study is the fixed effect model. The results of the chow test and the hausman test show that the best model in the study is the fixed effect model, so there is no need to conduct a lagrange multiplier test to show the best model for the study, so the best estimation method and used in the study is the fixed effect model.

Classical Assumption Test

a. Heteroscedasticity Test (Glejser Test)

Table 8. Glejser Test Results

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	1.928297	1.142306	1.688074	0.0936
EDUCATION	0.092585	0.086049	1.075954	0.2838
POPULATION GROWTH	-0.078738	0.094921	-0.829511	0.4082
UNEMPLOYMENT	0.016884	0.221100	0.076366	0.9392
INCOME INEQUALITY	0.071431	0.798808	0.089422	0.9289

Source: data processed with eviews 12, 2024

The results of the Glejser test above show that each independent variable obtained a probability value > 0.05, thus it is explained that it is free from heteroscedasticity symptoms.

b. Multicollinearity Test

Table 9. Multicollinearity Test Results

Variables	Education	Population growth	Unemployment	Income Inequality
Education	1	0.014758	0.782366	0.406211
Population growth	0.014758	1	0.099246	0.033778
Unemployment	0.782366	0.099246	1	0.285350
Income Inequality	0.406211	0.033778	0.285350	1

Source: data processed with eviews 12, 2024

Based on table 9 above, it can be seen that none of the independent variables have a coefficient > 0.90, so it can be concluded that the data in this study does not experience multicollinearity.

Panel Data Regression Analysis

Table 10. Panel Regression Test Results*Fixed Effect Model*

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	43.03546	1.809164	23.78748	0.0000
EDUCATION	-2,293555	0.297230	-7,716420	0.0000
POPULATION GROWTH	-0.132944	0.028699	-4.632306	0.0000
UNEMPLOYMENT	-0.132490	0.065163	-2.033201	0.0452
INCOME INEQUALITY	0.819728	0.260247	3,149805	0.0023

Effects Specification

Cross-section fixed (dummy variables)			
R-squared	0.998240	mean dependent variable	28.81138
Adjusted R-squared	0.997562	SD dependent var	9.736934
SE of regression	0.480796	Akaike information criterion	1.607467
Sum squared residual	19,18665	Black criterion	2,390816
log likelihood	-60,23308	Hannan-Quinn critter.	1.925462
F-statistic	1471,317	Durbin-Watson stat	2,039428
Prob(F-statistic)	0.000000		

Source: data processed with Eviews 12, 2024

Based on the selection of the estimation model, the chow test and hausman test have been conducted, and the best model used is the Fixed Effect Model (FEM). From the results of the study, it can be determined the magnitude of the influence of the variables of education, population growth, unemployment and income inequality on the percentage of poor people in the Regency/City of Papua Province.

Based on the Fixed Effect Model test, the results of the panel regression equation are as follows:

Y = 43.03546 - 2.293555X1it - 0.132944X2it – 0.132490ΔX3it + 0.819728ΔX4it…………………………………………………………… …….4.1

Based on this equation, it can be seen that:

Education has a negative effect on the percentage of poor people with a coefficient of -2.293555 with a probability value of 0.0000 <0.05. This means that for every increase in education or average length of schooling of 1 year, the percentage of poor people in Papua Province will decrease by -2.293555%.

Population growth has a negative effect on the percentage of poor people with a coefficient of -0.132944 with a probability value of 0.0000<0.05. This means that for every 1%

increase in population growth, the percentage of poor people in Papua province will decrease by -0.132944%.

Unemployment has a negative effect on the percentage of poor people with a coefficient of -0.132490 with a probability value of 0.0452 <0.05. This means that for every 1% increase in unemployment, it will cause a change in the percentage of poor people in Papua province of -0.132490%.

Income inequality is positive towards the percentage of poor population with a coefficient of 0.819728 with a probability value of 0.0023 <0.05. This means that for every 1 point increase in income inequality will cause a change in the percentage of poor population in Papua Province by 0.819728 points.

Simultaneous Testing of Regression Coefficient Significance (F Test)

Table 11. F Test Results (Simultaneous)

R-squared	0.998240
Adjusted R-squared	0.997562
SE of regression	0.480796
Sum squared residual	19,18665
log likelihood	-60,23308
F-statistic	1471,317
Prob(F-statistic)	0.000000

Source: data processed with eviews 12, 2024

1) Hypothesis Formulation
   $H0$:$\beta1$ =$\beta2$ =$\beta3$ =$\beta4$ = 0, which means that the independent variables simultaneously do not have a significant effect on the dependent variable.
   $H1$: at least one of βi ≠ 0 (i= 1,2,3,4), which means that the independent variables simultaneously have a significant effect on the dependent variable.
2) Real Level
   Determining the real levelα= 0.05 percent or a 95 percent confidence level with degrees of freedom df = (k-1) (nk), then$F$table =$F(\alpha)(k-1)(n-k)$. In this study df = (5-1) (145-5) = (4) (140), then Ftable = (0.05),(4),(140) the table value obtained is 2.436.
3) Testing criteria are as follows:
   $H0$ accepted if$F_{count} \leq F_{table}$ or p> 0.05
   $H0$ rejected if$F_{count} > F_{table}$ or p ≤ 0.05
4) Test Statistics
   Based on the calculation results using Eviews 12 software presented in table 4.7, the F count result is 1471.317 and has an F table value of 2.436.
5) Conclusion

The F-count value is 1471.317 > 2.436 F-table, so H0 is rejected and H1 is accepted, meaning that education, population growth, unemployment, and income inequality simultaneously have a significant effect on the percentage of poor people in regencies/cities in Papua Province.

Partial Testing of Regression Coefficient Significance (T-Test)

Table 12. t-Test Results

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	43.03546	1.809164	23.78748	0.0000
EDUCATION	-2,293555	0.297230	-7,716420	0.0000
POPULATION GROWTH	-0.132944	0.028699	-4.632306	0.0000
UNEMPLOYMENT	-0.132490	0.065163	-2.033201	0.0452
INCOME INEQUALITY	0.819728	0.260247	3,149805	0.0023

Source: Data processed with Eviews 12, 2024

After knowing the t count of each variable, the next step is to make a conclusion to accept or reject H, where the t table value to be used must first be determined. This value depends on the magnitude of the degree of freedom (df) and the significance level of 5% and the value of the degree of freedom (df) which is the number of samples minus the number of research variables so that nk (145-5) = 140 obtains a t table value of 1.977.

1. **The influence of education (X1) on the percentage of poor population (Y) in districts/cities in Papua Province.**

(1) Hypothesis Formulation

H0: $\beta_1 = 0$, meaning that the education variable (X1) partially does not have a significant effect on the percentage of poor people in the Regency/City of Papua Province.

H1: $\beta_1 < 0$, meaning that the education variable (X1) has a partial negative and significant effect on the percentage of poor people in the districts/cities of Papua Province.

(2) Real Level (a) 5 percent or 95 percent confidence level.

(3) Testing Criteria

If the significance value > 0.05 or tcount <ttable, then H0 is accepted.

If the significance value < 0.05 or tcount > ttable, then H0 is rejected.

(4) Calculating statistical values

Based on the calculation results using Eviews 12 software presented in table 4.10, the coefficient value obtained is -2.293 and has a significance value of 0.0000.

(5) Conclusion

The results of the t-test on the education variable (X1) obtained a calculated t value of -7.716 < t table, namely 1.977 and a significant value of 0.0000 < 0.05, so partially the education variable has a negative and significant effect on the percentage of poor people in the Regency/City of Papua Province.

2. The effect of population growth (X2) on the percentage of poor people (Y) in districts/cities in Papua Province.

(1) Hypothesis Formulation

H0: β1 = 0, meaning that the population growth variable (X2) partially does not have a significant effect on the percentage of poor people in the Regency/City of Papua Province.

H1: β1 < 0, meaning that the population growth variable (X2) has a partial negative and significant effect on the percentage of poor people in the districts/cities of Papua Province.

(2) Real Level (a) 5 percent or 95 percent confidence level.

(3) Testing Criteria

If the significance value > 0.05 or tcount <ttable, then H0 is accepted.

If the significance value < 0.05 or tcount > ttable, then H0 is rejected.

(4) Calculating statistical values

Based on the calculation results using Eviews 12 software presented in table 4.10, the coefficient value obtained is -0.133 and has a significance value of 0.0000.

(5) Conclusion

The results of the t-test on the population growth variable (X2) obtained a calculated t value of -4.632 < t table, namely 1.977 and a significance value of 0.0000 < 0.05, so partially the population growth variable has a negative and significant effect on the percentage of poor people in the Regency/City of Papua Province.

3. The effect of unemployment (X3) on the percentage of poor population (Y) in the districts/cities of Papua Province.

(1) Hypothesis Formulation

H0: β1 = 0, meaning that the unemployment variable (X3) partially does not have a significant effect on the percentage of poor people in the Regency/City of Papua Province.

H1: β1 < 0, meaning that the unemployment variable (X3) has a partial negative and significant effect on the percentage of poor people in the districts/cities of Papua Province.

(2) Real Level (a) 5 percent or 95 percent confidence level.

(3) Testing Criteria

If the significance value > 0.05 or tcount <ttable, then H0 is accepted.

If the significance value < 0.05 or tcount > ttable, then H0 is rejected.

(4) Calculating statistical values

Based on the calculation results using Eviews 12 software presented in table 4.10, the coefficient value obtained is -0.132 and has a significance value of 0.0452.

(5) Conclusion

The results of the t-test on the unemployment variable (X3) obtained a calculated t value of -2.033 < t table, namely 1.977 and a significance value of 0.0452 < 0.05, so partially the

unemployment variable has a negative and significant effect on the percentage of poor people in the Regency/City of Papua Province.

4. **The effect of income inequality (X4) on the percentage of poor people (Y) in districts/cities in Papua Province.**

(1) Hypothesis Formulation

H0: β1 = 0, meaning that the income inequality variable (X4) partially does not have a significant effect on the percentage of poor people in the Regency/City of Papua Province.

H1: β1 < 0, meaning that the income inequality variable (X4) has a partial negative and significant effect on the percentage of poor people in the districts/cities of Papua Province.

(2) Real Level (a) 5 percent or 95 percent confidence level.

(3) Testing Criteria

If the significance value > 0.05 or tcount <ttable, then H0 is accepted.

If the significance value < 0.05 or tcount > ttable, then H0 is rejected.

(4) Calculating statistical values

Based on the calculation results using Eviews 12 software presented in table 4.10, the coefficient value is 0.819 and has a significance value of 0.0023.

(5) Conclusion

The results of the t-test on the income inequality variable (X4) obtained a calculated t value of 3.149 > t table, namely 1.977 and a significance value of 0.0023 < 0.05, so partially the income inequality variable has a positive and significant effect on the percentage of poor people in the Regency/City of Papua Province.

Discussion of Research Results

The Influence of Education on the Percentage of Poor Population

Based on testing with eviews 12, the effect of education (X1) on the percentage of poor people (Y) shows that education has a negative direction and has a significant partial effect on the percentage of poor people in regencies/cities in Papua Province. The results of this test can mean that if education or the average length of schooling increases, the percentage of poor people in regencies/cities in Papua Province 2017-2021 will decrease, and vice versa if education or the average length of schooling decreases, the percentage of poor people will increase.

This result is in line with research conducted by Indraswari and Bhudi (2022) which states that the education variable has a negative and significant partial effect on the percentage of poor people in Bali Province. A person who has high productivity will get better welfare due to increased income. The low productivity of the poor can be caused by their low access to education. This means that education has a significant influence on the poverty rate in Papua Province. The low average length of schooling and the level of education which is still dominated by basic education (elementary and junior high school) have an impact on low

productivity and employment opportunities. This results in many people being unable to compete in the labor market, thereby reducing income and exacerbating poverty. Increasing the average length of schooling and access to secondary to higher education can help improve the skills of the workforce, which in turn can increase income and reduce poverty.

In Papua, the impact of education on poverty is more fundamental than in other regions because education directly affects access to jobs, income, and people's quality of life. Unlike other regions, other factors such as industrialization and urbanization also play an important role. Papua lags far behind other regions in terms of education, both in terms of access and quality. This lag exacerbates the high poverty rate. The average length of schooling in Papua is one of the lowest in Indonesia. In 2021, the RLS for Papua was around 6.8 years, meaning that the average resident only completed education up to grade 6 of elementary school. Several districts in Papua, especially in mountainous areas, even recorded RLS figures below 5 years. The average national length of schooling in 2021 was 8.5 years, equivalent to the second grade of junior high school. In contrast, regions such as Central Java and East Java, despite having significant poverty rates, have RLS of around 8–9 years, which is much higher than Papua.

The results of this study strengthen previous research conducted by Ishak, Zakaria and Arifin (2020) that the education variable as seen from the Average Length of Schooling (RLS) shows a negative and significant effect on the poverty rate in Makassar City. And research conducted by Tjiabrata, Engka and Rompas (2021) shows that education has a negative and significant effect on the poverty rate in North Sulawesi Province.

The Impact of Population Growth on the Percentage of Poor People

Based on testing with eviews 12, the effect of population growth (X2) on the percentage of poor people (Y) shows that population growth has a negative direction and has a significant partial effect on the percentage of poor people in Regencies/Cities in Papua Province. The test shows that the regression coefficient value of population growth is -0.133 with a significance value of (0.000) <0.05 so that H1 is accepted. This shows that statistically when population growth increases, it will reduce the percentage of poor people in Regencies/Cities in Papua Province. This means that if population growth increases, the percentage of poor people in Papua Province in the 2017-2021 period will experience a reduction in the percentage of poor people. This phenomenon indicates that the correlation between population and increasing poverty in Papua Province is not linear. This is because population growth in the region often increases the number of workers, especially in productive age. If accompanied by the creation of sufficient and relevant jobs, this population growth can increase overall community income and reduce poverty. A large population is an important asset for a region or country. If managed well through investments in education, health and infrastructure, and ensuring equitable distribution of benefits, large populations can be a major driver of economic growth, innovation and global competitiveness.

There are several things that can cause population growth in Papua Province to reduce the percentage of poor people, such as, 1) The percentage of poor people is calculated as the ratio between the number of poor people and the total population. When the total population increases, while the number of poor people remains the same or grows more slowly, the percentage of poor people will statistically decrease. Likewise, in Papua Province, if the total population of Papua increases due to natural growth or migration, but this increase is dominated by non-poor people, the percentage of poverty will decrease. 2) Population growth in Papua does not only come from natural births but also from migration, especially from workers in the construction, mining, or government employees who migrate to big cities in Papua (such as Jayapura, Timika, or Sorong). These immigrants generally have higher incomes, thus reducing the percentage of poor people overall. 3) The population of Papua is dominated by young age groups. This provides the potential for increased productivity because young age groups are better able to adapt to new economic opportunities. If education and job training are improved, they can become the driving force of the local economy. 4) Population growth is often higher in urban areas of Papua than in the interior. Rural poverty remains high, but its contribution to the overall percentage is declining as urban residents have better access to basic services and economic opportunities.

This result is in line with the research conducted by Vistalia A. and Sukadana (2023) which stated that population growth has a negative and significant effect on poverty in Papua Province. The reason is that if the population in the area increases, the poverty rate actually decreases, conversely if the population decreases the poverty rate tends to increase.

The results of this study are reinforced by research conducted by Safitri and Effendi (2019) and research by Putra et al. (2021) which states that the population growth rate has a negative and significant effect on poverty. This means that the higher the population growth rate, the lower the number of poor people in an area. Where according to the study, the population composition seen from the population pyramid shows that most of the population is of productive age. Because the population structure is at a young age, the economic burden that must be borne by the productive age group is decreasing, thereby increasing the income received and reducing the number of poor people.

The Impact of Unemployment on the Percentage of Poor Population

Based on testing with eviews 12, the results obtained are that unemployment (X3) against the percentage of poor people (Y) shows that unemployment has a negative direction and does not have a significant effect on the percentage of poor people in Regencies/Cities in Papua Province. The test shows that the value of the unemployment regression coefficient is -0.132 with a significance value of 0.0452 <0.05. This shows that statistically when unemployment increases, it will decrease the percentage of poor people in Regencies/Cities in Papua Province.

The results of this study do not match the proposed hypothesis, and the results of this study are not in line with the research conducted by Ishak, Zakaria and Arifin (2020) which states that the unemployment variable seen from the Open Unemployment Rate (TPT) has a positive and significant effect on the poverty rate. The results of this study are in line with the research conducted by Jati et al. (2024) which states that the unemployment rate has a negative effect on the poverty rate in the Regency/City of Papua Province. This means that in areas with high unemployment rates, poverty rates tend to be low. This finding contradicts the research hypothesis which states that unemployment has a positive impact on poverty. Therefore, the unemployment hypothesis in this study is rejected. The results of testing this hypothesis are supported by the average unemployment rate in 29 Regencies/Cities in Papua during the 2017-2021 period of 3.45 percent, while the average poverty rate in the same period was 28.88 percent. These data provide evidence that even though the unemployment rate is low, the poverty rate remains high. These data also show that low unemployment rates do not always mean low poverty rates. However, with the results of this study it cannot be concluded that increasing unemployment is an effort to reduce poverty. Changes in population demographics, increased productivity and income equality will actually encourage a region to be free from poverty.

There are several reasons why unemployment can have a negative effect on the percentage of poor people in Papua province, namely 1) Most of the poor in Papua work in the informal sector, such as subsistence farming, fisheries, or odd jobs. Because they have jobs even though their income is very low, they are not categorized as unemployed. So when formal unemployment increases, it is likely that this will not directly affect the poor who work in the informal sector. 2) In Papua, social assistance programs such as the Family Hope Program (PKH), Non-Cash Food Assistance (BPNT), or Village Funds, are often the main source of livelihood for the poor. When the unemployment rate increases, the government tends to expand social assistance. This can maintain the purchasing power of the poor, so that even though unemployment increases, poverty does not increase statistically. 3) Some areas in Papua benefit directly from the exploitation of natural resources (for example, Freeport or plantations). When formal unemployment increases, the distribution of income from this sector (through CSR or village funds) can help prevent an increase in poverty. Every year PT Freeport Indonesia contributes to Papua Province both through direct programs such as CSR and partnership funds, as well as through royalty mechanisms, taxes, and stock dividends received by the local government. This contribution has been an important part of economic and social development in Papua, although there are still challenges to ensure equitable distribution of benefits throughout the Papua region. 4) Papua has a young population that dominates the population. Many of them are of productive age but have not entered the formal labor market. Because they are not considered poor (living with family or receiving assistance), unemployment in this group does not increase poverty rates.

Also supported by research conducted by Florencia and Karmini (2022) which states that there is a negative relationship between unemployment and poverty in Papua Province. This is also in accordance with the findings of Ibrahim Hasballah (2021) which states that unemployment has a significant negative effect on poverty. Likewise, research conducted by Ramadhani (2023) indicates that unemployment has a significant negative effect on poverty. Where the increase in the Open Unemployment Rate (TPT) has implications for a decrease in the percentage of the number of poor people in provinces in Indonesia. There is a relationship between high unemployment and widespread poverty. In most cases, people who do not have permanent jobs or only have part-time jobs that are scattered are included in the very poor. However, it is wrong to assume that people who do not have jobs are poor. These people are basically unemployed, but they may not be poor (Amassoma in Quy, 2016)

The Impact of Income Inequality on the Percentage of Poor Population

Based on testing with eviews 12, the results show that income inequality (X4) against the percentage of poor people (Y) shows that income inequality has a positive direction and does not have a significant effect on the percentage of poor people in Regencies/Cities in Papua Province. The test shows that the value of the income inequality regression coefficient is 0.819 with a significance value of 0.0023 <0.05. This shows that statistically when income inequality increases, it will increase the percentage of poor people in Regencies/Cities in Papua Province. Increasing income inequality in Papua Province can worsen poverty conditions, because the poor will be increasingly marginalized and do not have sufficient access to economic opportunities, education, and basic services. With the widening gap, many people remain trapped in poverty, while the rich enjoy increasing prosperity. In Papua, this income inequality is often reflected in the difference in access between urban areas (which are richer) and rural areas (which are poorer). In the distribution of jobs in Papua Province, many formal jobs are concentrated in certain sectors (such as mining and infrastructure) that provide higher salaries, while the majority of the population in rural areas or more remote areas work in the informal sector with low incomes. High income inequality is often followed by inequality in the provision of infrastructure. Poor and remote areas in Papua, most of which do not have adequate access to electricity, roads, and communications, are very limited in accessing economic opportunities. Therefore, to reduce poverty rates, it is important to reduce income inequality and create more equitable economic opportunities for the entire community.

The results of this study are in accordance with research conducted by Indrawati et.al. (2020) that there is a positive and significant influence of income distribution inequality on poverty levels. The same study was also conducted by Ramadhani (2023) that income inequality has a significant positive effect on poverty. Where the higher the income inequality that occurs between residents, it has implications for increasing the percentage of the number of poor people in provinces in Indonesia. In line with this description, Suparman (2021)

stated that the elasticity of inequality is always positive, where a decrease in inequality will reduce poverty.

CONCLUSION

Based on the results of the analysis that have been described in the previous chapter, several conclusions can be drawn to answer the problem formulation, as follows:

1) Based on the results of simultaneous panel data regression analysis, it is known that the variables of education, population growth, unemployment and income inequality have a simultaneous effect on the percentage of poor people in the regencies/cities of Papua Province.
2) Based on the results of partial panel data regression, it is known that the variables of education, population growth, unemployment have a negative and significant effect on the percentage of poor people in the Regency/City of Papua Province. Based on the results of partial panel data regression, it is known that the income inequality variable has a positive and significant effect on the percentage of poor people in the Regency/City of Papua Province.

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