



EXPLORING THE INFLUENCE OF SOCIOECONOMIC FACTORS ON EDUCATION-MEDIATED POVERTY IN INDONESIA

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ABSTRACT

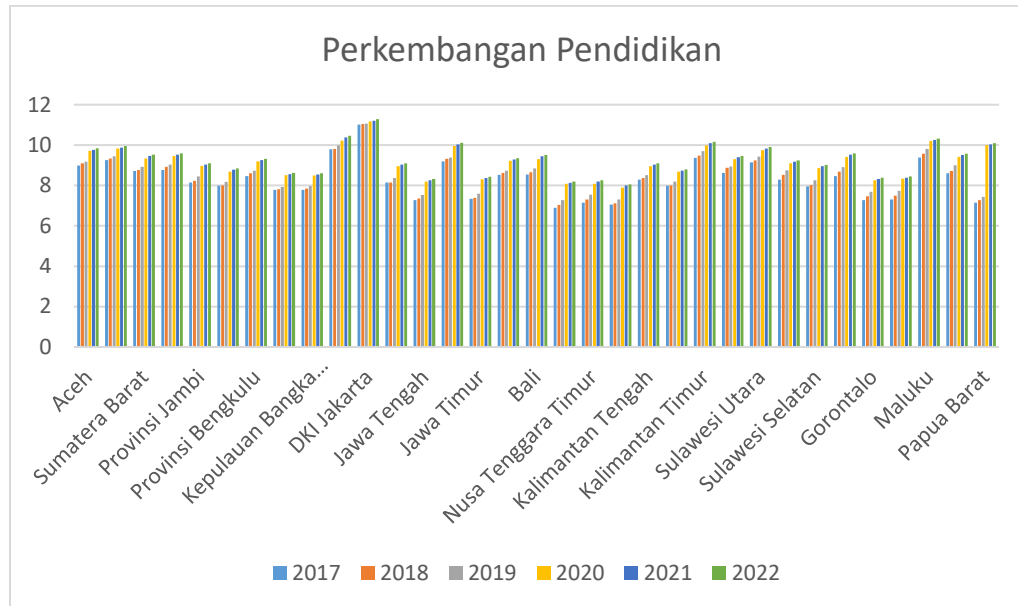
This study aims to determine and assess the influence of road infrastructure, wages, industrial development, MSMEs, and electricity consumption on poverty and education, using panel data in 34 provinces in Indonesia during 2017-2022. The statistical model used is Path Analysis with dummy variables, grouping the system into 2 groups, namely the western region of Indonesia (IBB) and the eastern region of Indonesia (IBT). The research results show that road infrastructure has a positive impact on poverty alleviation in both the IBB and IBT areas, but hurts education in both areas. Furthermore, industrial development and electricity consumption have a negative influence on poverty but have no impact on education in both regions. Meanwhile, wages have a negative influence on poverty in IBB, but in IBT they have a positive influence. Furthermore, MSMEs can be said to exacerbate poverty in IBB, but in IBT they can reduce poverty. MSMEs, industrial development, and electricity consumption do not have a positive impact on education in both regions. Poverty has no influence on education at IBB, but at IBT the opposite happens, namely a decrease in poverty causes an increase in education. Comparing the magnitude of the influence between variables, wages have the greatest influence on education.

INTRODUCTION

Disparities in economic development between regions are a universal phenomenon, in all countries regardless of their size and level of development. Development disparities are a serious inequality problem that must be overcome in both market and planned economic systems. According to Todaro (2020), the development process has at least three core objectives, namely increasing the availability and expanding distribution of various basic life necessities, increasing living standards, and expanding economic and social choices. Apart from creating the highest possible growth, the main goal of development efforts is to eliminate and reduce poverty levels, income inequality, and unemployment levels. Furthermore, it is said that education is a vital component in the growth and development of a country. The dual role of education, namely as input and output, makes education very important in economic development. The role of education in developing countries is to shape a country's ability to absorb modern technology and develop the capacity to create sustainable growth and development (Todaro, 2002). The function of national education development is to develop abilities and shape the character and civilization of a dignified nation to make the nation's life more intelligent, aimed at developing the potential of students to become human beings who believe in and are devoted to God Almighty, have a noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens (Education Law, 2003). Furthermore (Todaro, 2000) stated that an important factor in building human resources is education. Education is a fundamental factor in improving the quality of human life and ensuring social and economic growth, capital and natural

resources are only passive factors of production while humans are active agents who can accumulate capital, exploit natural resources, and build social, economic, and political organizations and bring progress for national development.

National attention to education was started by several educational figures such as Ki Hajar Dewantara who founded Taman Siswa in 1922 in Jogjakarta, becoming an important turning point, where education was not only for the elite but for all Indonesian people, which was the opposite of previous times. where education could only be had and enjoyed by certain people (elites) during the Belanda colonial period. In 1975, reforms occurred where education was used as a tool for national development. The Nine-Year Compulsory Education Program was introduced to ensure all Indonesian children receive basic education. Education in Indonesia currently still faces various challenges, including disparities between regions, teacher quality, and inequality in learning facilities. However, there are also positive developments, especially in the use of technology which is always developing from time to time. Apart from that, character education is also an important focus, not only about academics but also about forming a strong personality and soft skills. Nowadays, education in Indonesia is no longer limited to formal schools. There are many trainings, online courses, and other activities that also provide knowledge. With the development of technology, education is becoming more modern and focuses not only on academic lessons but also on developing other skills. Even though there has been progress, there are still many challenges that must be faced, such as disparities between regions, uneven quality of education, and lack of resources (Obet, R., 2024).

**Gambar 1.****Sumber: Hasil Penelitian**

Looking at Figure 1, it can be seen that all provinces in Indonesia have experienced educational development or improvement as measured by the average number of years of schooling. Medium According to BPS Data, Average Years of Schooling for the Indonesian Population Throughout 2022-2023. Based on data from the Central Statistics Agency (BPS), the average length of schooling (RLS) for the Indonesian population will reach 8.77 years in 2023. This figure is an increase of 0.08 years compared to the previous year which was 8.69 years. It is hoped that the development of education will get a breath of fresh air from efforts to reduce poverty, although education cannot necessarily reduce poverty, as research conducted by (Surbakti at al., 2023) states that education has a positive effect on poverty.

Poverty in Indonesia has not shown a significant decline for almost a decade. This can be seen from the percentage of poverty which has not decreased significantly. From 2017 to 2022 it only ranged from 10.12% to 9.57, but during the Covid-19 period, in 2020 there was a significant increase until it reached 10.19%. Furthermore, if we look at the poverty conditions per province, it is known that the province of Papua is the province with the worst poverty conditions, reaching 27.76% in 2017, although it experienced a decline that was not sharp so that in 2022 the percentage of poverty in the region will be 26.80%. On the other hand, the region with the lowest poverty rate is DKI Jakarta with the poverty percentage in 2017 reaching 3.78% but in 2022 it will increase to 4.61% (BPS, 2023). Poverty is closely related to other economic activities, such as education and road instructors. Road infrastructure is expected to provide forward linkages and backward linkages so that poverty can be eradicated.

Good and correct infrastructure development will make it easier for the economy to improve. Apart from that, it can make it easier

for investors to invest in the area. Then economic equality will be achieved when development is well directed. (Pedroni & Canning, 2004) states that infrastructure has externalities. Various infrastructure such as roads and bridges have positive externalities for education. Policies in improving infrastructure in Indonesia are based more on output orientation, namely in the form of economic growth compared to equality both between the islands of Java and outside Java. The inequality that occurs can be seen based on the value of investment and production in each region, the largest investment currently occurring is on the island of Java, which only covers 7% of the entire territory in Indonesia. Meanwhile, output or GRDP on the island of Java produces the largest total output for Indonesia. This means that the concentration in development on the island of Java is far superior to other regions of Indonesia. The lagging behind an area in development is influenced by many things. For example, the low level of attractiveness of an area causes its economic activity to be low. An area that does not have human resources or natural resources together with a lack of incentives offered (infrastructure, hardware and software, security and so on) can be the cause of an area lagging behind in development (Azis, 1994).

Wages are compensation received by workers in accordance with existing provisions and regulations. Economic activities can run smoothly because of the contribution of workers. Thus wages are directly related to production or economic growth. However, wages do not guarantee increased production. (Lupu, D. at al., 2023) found that GDP increases cause wages to increase at different frequencies; there is a positive correlation between GDP growth and wage growth; the effects of wage-led growth policies were weak and only on short periods. Furthermore, it also found that estimates cast a high degree of uncertainty on the effectiveness of wage increase policies promoted by some



national authorities to achieve economic growth. The increase in wages spearheaded by the government means that industry will inevitably pay higher wages. This will encourage the workforce to improve performance which in turn will have an impact in the form of increasing industrial productivity. Increasing productivity will lead to an increase in business scale which in turn will increase people's income so that the level of welfare can also increase. Apart from wages which can encourage increased productivity, per capita income is an indicator or benchmark in measuring the level of social welfare in a country

One of the important sectors that use the most electrical energy is MSMEs because they have a large quantity. This sector has a strategic role in improving the country's economy. This can be seen from the large number of workers working in this sector, the high contribution to the formation of the national economy's gross domestic product (GDP), and helping to reduce public unemployment. This sector has proven its resilience in facing the economic crisis that hit the Indonesian economy when many large companies went bankrupt. Furthermore, MSME problems slowed the SME growth in Asia including i) lack of finance, ii) lack of comprehensive databases, iii) low-level of R&D expenditures, and iv) insufficient use of information technology and providing remedies for mitigating them (Yoshino, N. and Taghizadeh-Hesary, F. 2016).

The role of MSMEs in economic development is very strategic because they provide the largest contribution, as stated by the research team said that the majority or 99% of businesses in Indonesia are at the MSME level. MSMEs themselves contribute 61.9% to the total gross domestic product (GDP) and absorb approximately 97% of the local workforce so that they can be used as a means of alleviating poverty. Other researchers also expressed the same thing, stating that micro and medium industries contribute to job growth and increase people's (Airlangga, 2022). Thus, an increase in the quantity of MSMEs can cause energy demand, especially electrical energy because MSMEs, like other large companies, have production factors that will produce output which has an impact on increasing energy demand, including electrical energy. Furthermore, MSMEs from industry can be encouraged to start developing the manufacturing industry, because some MSMEs are included in the manufacturing industry.

Industry is a sector that provides greater added value than other sectors, so its development is necessary to encourage other sectors. The strategic role of the industrial sector as an engine of economic development is not without reason, because the industrial sector will have derivative impacts, namely increasing the value of capital capitalization, the ability to absorb a large workforce, and the ability to create added value (value added creation) from every input or basic material. which is processed. (Cahyono, E. 2015). Furthermore, it is said that the strategic role of the industrial sector as an engine of economic development is not without reason, because the industrial sector will have derivative impacts, namely increasing the value of capital

capitalization, the ability to absorb a large workforce, and the ability to create added value (value added creation) from every input or basic material that is processed. Furthermore, this industrial process requires various inputs, one of which is electrical energy.

Electrical energy is a very important energy source for human life, both for industrial activities, commercial activities and in daily household life. Electrical energy is needed to meet lighting needs and also production processes involving electronic goods and industrial tools or machines. In the future, the need for electricity will continue to increase along with the increase and development in terms of population, investment, technological developments including the development of the world of education for all levels of education, even the electrical energy that can be obtained from non-fossil sources shows that Today this energy is increasingly needed. This means that oil production in Indonesia continues to decline because production wells are generally old. Therefore, it is important for every individual to save or be energy efficient to overcome the problem of decreasing energy reserves, namely by using a method used to efficiently use electrical energy by conserving energy (Presidential Instruction No. 13, 2011).

Electrical energy is an input for various production activities that will produce goods for consumption. This shortage and inability to use electrical energy can have an impact on poverty. Electrical energy is also closely related to people's ability to access the internet, so the role of electricity can also be a means of alleviating poverty. Therefore, the government continues to strive to supply electrical energy to meet growing demand with the development of the processing and refining industry (smelter). There are 52 smelter industries that will be built with electricity needs reaching 4,789 Giga Watt (Ministry of Energy and Mineral Resources, 2021). The electric vehicle battery factory that has been built is a manifestation of the government's seriousness in downstreaming the nickel industry, which is the raw material for the battery industry. This can increase investment in other industries such as motorbikes and electric cars because there is a link between industries (Miller, R. E. and Blair, P. D. 2009). Consumption is a key variable because of its relationship to economic activity and development. Electrical energy plays an important role in economic development and is an important factor that supports people's welfare (Han, Sang-Yong, 2004). Meanwhile, according to the State Electricity Company, per capita electricity consumption in Indonesia in 2020 reached 1.09 MWH and in 2021 it amounted to 1.11 MWH; This means there will be an increase of 1.83%, then in 2022 electricity consumption will reach 1,173 MWH or an increase of 6.30% from the previous year and finally in 2023, consumption will reach 1,285 MWH or an increase of 9.54%. This is in accordance with Keynes' theory which states that when income increases, consumption will increase (Branson, W. H. 1992). Apart from that, the increase in per capita income also has an impact on improving people's welfare. People can access education, health care, and better infrastructure. The quality of life will increase and there is the



potential to reduce the level of poverty which is still a social problem in Indonesia.

Research examining the relationship between socio-economic factors and education which is mediated by poverty, Figure 2. Poverty is faced with having a negative influence on education, as an effort to prove that education and poverty have a reciprocal relationship because previously several studies showed that education influences poverty, or It can be said that the more developed education causes the reduction of poverty.

RESEARCH OBJECTIVES

This research aims to analyze and examine the relationship between industrial sector growth and environmental quality in two regions through socio-economic factors in the form of:

- 1. Compare the influence of socio-economic factors on poverty and education in Eastern Indonesia and Western Indonesia
2. Assess the effect of road instructors, wages, industrial development on poverty and education
3. Examining the effect of wages and MSMEs and electricity consumption on poverty and education
4. Examining the relationship between poverty and education

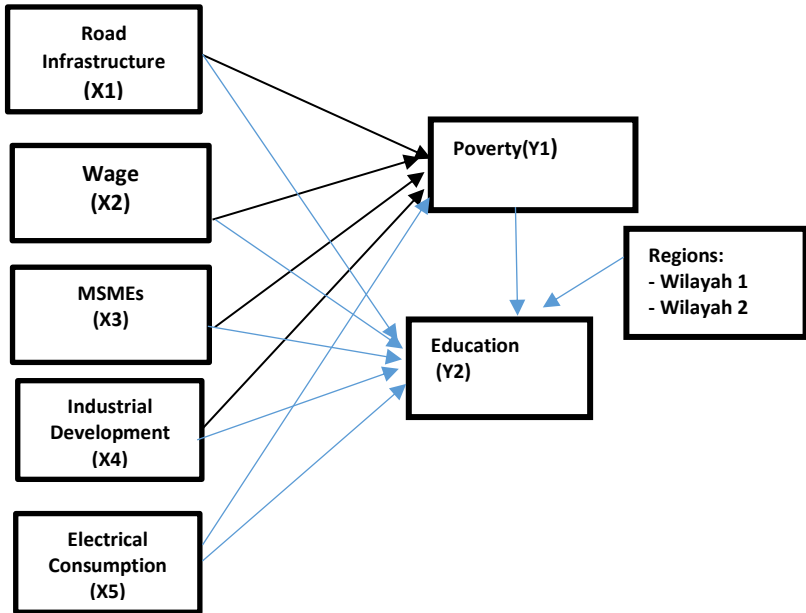


Figure 2. Framework

Region 1, wilayah bagian Barat Indonesia
Region 2, Wilayah Bagian Timur Indonesia.

LITERATURE REVIEW

Education

According to J.J. Rousseau Education is giving us supplies that were not available in childhood, but which we need in adulthood. According to Law no. 20 of 2003 Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble morals, and the skills needed by themselves, society, the nation, and country.

educational activities. Thus, apart from being universal, education is also national. Its national character will color the nation's education. Furthermore, education is closely related to (family) income, if income increases it will have an impact on increasing education (Fergusen, Hb. at al., 2022). Likewise, if education is considered as an investment (human investment), it will increase output as explained by the Neoclassical (exogenous) economic growth theory pioneered by Solow and Swam in 1955.



Poor people do not have sufficient income and consumption to lift them from the minimum adequate level. So in short, poor people are those who live below the poverty line, which is determined by a national or international institution. So understanding of poverty covers not only economics, but has expanded to cover various aspects of life, including other social dimensions, such as health, and education and even entering the political dimension, although the definition of poverty is the inability to meet minimum standards of needs, both food and non-food. This kind of poverty is also called absolute poverty, contrasted with relative poverty. Apart from that, Indonesia is known for structural poverty and temporary poverty. Structural poverty is certainly worse than temporary poverty because, in this type of poverty, it is difficult to get out of poverty. After all, it has become chronic (chronic poverty) which is characterized by deprivation, discrimination, and living in areas that do not support the improvement of life. broadening also emphasizes that poverty reducing strategies must recognize the interactions among the policies--the impact of appropriately designed combinations will be greater than the sum of the individual parts (Kanbur, R. and Squire, L. 1999). Furthermore, Buck, R., and Deutsch, J., 2014 stated that t. Poverty is a vast and complex issue that plagues communities in a seemingly endless cycle. However, working together to find effective ways of solving issues caused by poverty, the future can become a brighter for American youth growing up in poor communities.

Although establishing a positive environment within a school is a challenging task, it is just as important to recognize what makes the environment of the community positive. Principals who were able to align school goals and community goals had better success within the school (Mulford, et al., 2008) Community involvement is one of the major factors that benefits a schools success. When the teachers and members of the community believe that their students can succeed despite struggling with poverty, the students are more likely to achieve at higher levels. When the community becomes involved, people have a vested interest in making sure that their children are getting the services they need to be successful. It takes a collective mindset to positively influence the students in impoverished schools (Kirby & DiPaola, 2011). Without community involvement, the actions of the students, teachers, and administration are left unchecked. Since school funding comes from the local tax base, people should feel more invested in the schools of their community. When employment becomes nonexistent, the academic performance of the student may suffer due to heightened levels of stress.

Poverty

The concept of poverty is multidimensional. Sida divides poverty into 4 dimensions, namely: Resources, power and voice, opportunity and choice, and human security. So the problem of poverty is not only in the form of material fraud but also in other dimensions. According to (Parwadi, 2012), there are three factors that cause poverty when viewed from an economic perspective, namely: (1) unequal patterns of resource ownership which give

rise to unequal distribution of income, (2) Low quality of human resources means low productivity, which in turn low wages, less fortunate fate, discrimination or hereditary. (3) differences in access to capital. These three factors that cause poverty lead to the theory of the vicious circle of poverty. The circle of poverty is a series that influences each other in such a way that a country will remain poor and will experience many hardships. to achieve a better level of development.

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Regional Development

Regional Development Theory In much of the literature on development, there are several approaches and theories. Some of them are growth theory, rural development theory, agro first theory, basic needs theory, and so on. These development theories contain various social science approaches that attempt to deal with the problem of underdevelopment. Development theory really took off only after it was recognized that the problems of development in the Third World were special and qualitatively different from the "original transition". Throughout its evolution, development theory has become increasingly complex and non-disciplinary, making it difficult to create a standard definition of development, only proposals regarding development in certain contexts.

One of the regional development theories is unbalanced growth which was developed by Hirschman and Myrdal. Regional development is the process of formulating and implementing development goals on a supra-urban scale. Regional development is basically carried out by using natural resources optimally through local economic development, which is based on the basic



economic activities that occur in a region. The theory of unbalanced growth views that a region cannot develop if there is balance, so there must be an imbalance. Investment cannot be carried out in every sector in a region equally but must be carried out in leading sectors which are expected to attract progress in other sectors. The favored sector is called the leading sector. In fact, development theory is closely related to development strategy, namely changes in economic structures and social institutions that are sought to find consistent solutions to the problems faced. Various approaches concern the themes of development studies, one of which is the issue of regional development. Broadly speaking, regional development is defined as an effort to formulate and apply a theoretical framework to economic policies and development programs that consider regional aspects by integrating social and environmental aspects towards achieving optimal and sustainable prosperity (Nugroho and Dahuri, 2004). Regional development planning is increasingly relevant in implementing economic policies in regional aspects. Hoover and Giarratani (Nugroho and Dahuri, 2004), concluded that there are three important pillars in the regional development process, namely: Comparative advantage (imperfect mobility of factors), Agglomeration (imperfect divisibility), Transport costs (imperfect mobility of good and service).

Myrdal, G. in 1957, argued that the Cumulative Causation Theory argues that the main cause of regional inequality is strong backwash effects and weak spread effects. Gunnar Myrdal explained that each region has an attraction for the entry of labor, trade goods and capital. Furthermore, Hirschman, trickle-down effect, states that in the growth process there is a downward trickle that connects the central and peripheral areas. The trickle down leads to growth and development of the periphery, too. Hirschman argues against Myrdal that trickle down is automatic and government should not interfere in the growth process. Furthermore, Perroux (1950) put forward the pole growth theory, a theory that can combine the concept of "growth poles", stating that economic growth in each region does not occur in any place, but in certain locations. Thus, it includes the principles of concentration and decentralization simultaneously. Thus, the development center theory is one tool for achieving conflicting regional development goals, namely growth and equitable development across all corners of the region. Development can be started only in a few dynamic sectors, capable of providing high output ratios and in certain areas, which can have a broad impact (spread effect) and multiple effects on other sectors and wider areas.

THE METHOD

This type of research is quantitative, taking the type of study of comparative causality that processes numerical data that can be calculated using statistical formulas. The data analysis technique used in this study is path analysis which estimates the direct and indirect influence of exogenous variables on endogenous variables although in this study we only look at and discuss the direct effect, both effects are available in the statistical program used for estimation in this study. This study uses secondary data, namely data that is already available and collected by other parties and it was panel data. The data was taken from the Indonesia Central Statistics Agency (BPS) and the Ministry of Research, Technology and Higher Education Indonesia which covers 34 provinces in Indonesia, where since the end of 2022 there have been 38 provinces, but the necessary data is not yet available. The data used is divided into two groups, Indonesia bagian barat (IBB), disebut Region 1 and Indonesia Bagian Timur (IBT), disebut Region 2. The statistical analysis technique used is path analysis using the Amos 18 statistical application program.

Based on the conceptual relationship in the framework of thinking, mathematically functional relationships can be written as

$$Y_1 = f(X_1, X_2, X_3, X_4, X_5)$$

$$Y_2 = f(X_1, X_2, X_3, Y_1, X_5, D, DX_1, DX_2, DX_3, DX_4, DX_5)$$

Whereas:

X1 = road infrastructure (length of national, provincial, and district roads, km)

X2 = wage (provincial minimum wage rate)

X3 = MSMEs (number of MSMEs for each province)

X4 = Industrial development (number of the manufacturing industry sector)

X5 = electrical consumption (number of KWH purchased by all electricity customers)

Y1 = poverty (percentage of poor people to the total population)

Y2 = education (average length of time the population has attended formal education, year)

D = Dummy variable, D = 0, Western areas (Region 1); D=1, Extern areas (Region 2)

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$$Y_1 = \alpha_0 + \alpha_1 \ln X_1 + \alpha_2 \ln X_2 + \alpha_3 \ln X_3 + \alpha_4 \ln X_4 + \alpha_5 \ln X_5 + \mu_1 \dots\dots\dots(3.4)$$

$$Y_2 = \beta_0 + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \beta_4 \ln X_4 + \beta_5 \ln X_5 + \beta_6 Y_1 + \beta_7 D + \beta_8 D \ln X_1 + \beta_9 D \ln X_2 + \beta_{10} D \ln X_3 + \beta_{11} D \ln X_4 + \beta_{12} D \ln X_5 + \mu_2 \dots\dots\dots(3.5)$$

Substituting the value of the dummy variable, D=0 in the equation (3.5), a new equation is obtained

$$\ln Y_{21} = \beta_0 + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \beta_4 \ln X_4 + \beta_5 \ln X_5 + \beta_6 \ln X_6 + \beta_7 Y_1 + \mu_3 \dots\dots(3.6)$$

Regression Equation for Region 2, D=1, a new equation is also obtained

$$\ln Y_{22} = (\beta_0 + \beta_7) + (\beta_1 + \beta_8) \ln X_1 + (\beta_2 + \beta_9) \ln X_2 + (\beta_3 + \beta_{10}) \ln X_3 + (\beta_4 + \beta_{11}) \ln X_4 + \dots(3.7)$$

$$\beta_5 + \beta_{12} \ln X_5 + \beta_7 Y_1 + \mu_3$$

RESULTS AND DISCUSSIONS

Model fit test

Chi-square statistic, as stated earlier, is the most fundamental test to measure overall fit, it is very sensitive to the size of the sample used and the relation of exogenous variables, almost the same as

the model Regresi Linear Berganda. The model is considered good if the Chi-square value is small. The smaller the value, the more feasible the research, meaning that the more it describes the match between the variance of the sample taken and the research population. The results of data processing that have been carried out using the AMOS 18 program are as shown in Table 1.

Table 1. Goodness of Fit Index

No.	Goodness of fit Measure	Cut-off Criteria	Estimation (cut off Value)	Fit Situation
1	Chi-Square (χ^2) Significance Probability (p)	smaller the better ≥ 0.05	5.460 0.243	Fit
2	RMSEA (the Root Mean Square Error of Approximation)	≤ 0.05	0.043	Fit
3	NFI (Normed of Fit Index)	≥ 0.95	0.987	Fit
4	IFI (Incremental Fit Indices)	≥ 0.95	0.996	Fit
5	CMIN/DF (the minimum Sample Discrepancy Function)	≤ 2	1.365	Fit
6	TLI (Tuckler Lewis Index)	≥ 0.95	0.958	Fit
7	CFI (Comparative Fit Index)	≥ 0.95	0.996	Fit
8	Hoelter's Index	≥ 200	353	Fit

Sumber: Malkanthie, 2015; Wan, 2022 and Amos Result

Research Findings

As is known, this research divides Indonesia's provinces into 2 regions, so the estimation results consist of two components. The

estimation results for Region 1, which is called Non-Natural Resource Base Areas, D=0, can be seen in Figure 4

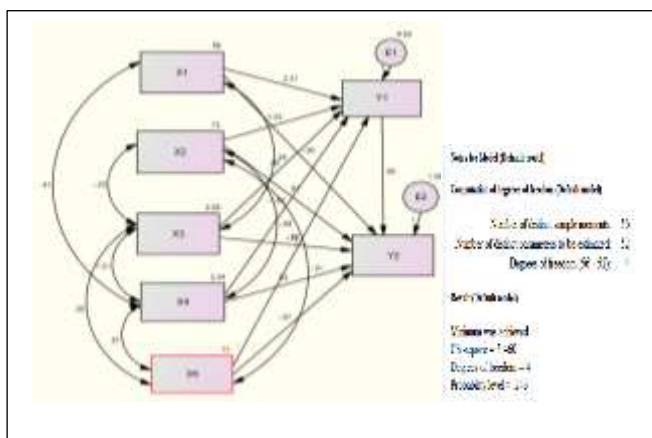


Figure 4. Variable Coefficients untuk Region 1 and Result of Default Model
Recourse: Amos 18 data processing results.

As can be seen in Figure 2, where there is no level of confidence or probability for each coefficient or path, the estimation results

are also displayed as a scalar estimate for Region 1 (Group 1), which describes the level of significance of each path, Figure 5.



Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P
Poverty <-- RoadInfrastructure	2.307	.361	6.389	***
Poverty <-- Wage	-1.031	.798	-1.281	.196
Poverty <-- MSMEs	.900	.242	3.722	***
Poverty <-- IndustrialDevelop	-1.597	.216	-7.387	***
Poverty <-- ElectricalConsump	-.871	.307	-2.833	.005
Education <-- Poverty	-.003	.049	-.064	.949
Education <-- MSMEs	-.116	.124	-.931	.352
Education <-- IndustrialDevelop	.029	.137	.211	.833
Education <-- RoadInfrastructure	-.303	.207	-1.463	.144
Education <-- Wage	.874	.388	2.254	.024
Education <-- ElectricalConsump	-.073	.153	-.476	.634

Figure 5. Scalar Estimates Region1
Resource: Amos 18 data processing results.

Further illustrating the estimation results for Region 2, Natural Resource Based Areas, D=1 or Region 2, as carried out in Region 1, can be seen in Figure 6.

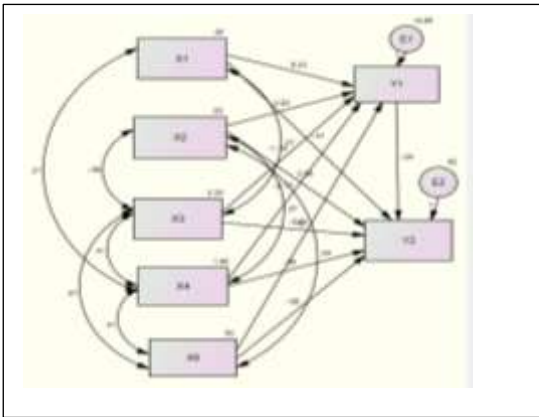


Figure 6. Variabel Coefficients in Region 2
Resource: Amos 18 data processing results

Next, in Region 2, the estimation results are presented, variable coefficients with confidence level or probability (P), Regression Weights for Region 2, can be seen in Figure 7.

Estimates (Group number 2 - Default model)

Scalar Estimates (Group number 2 - Default model)

Maximum Likelihood Estimates

Regression Weights (Group number 2 - Default model)

	Estimate	S.E.	C.R.	P
Poverty <-- RoadInfrastructure	6.226	.877	7.099	***
Poverty <-- Wage	3.933	2.798	1.405	.160
Poverty <-- MSMEs	-1.393	.340	-3.907	***
Poverty <-- IndustrialDevelop	-2.698	.431	-6.263	***
Poverty <-- ElectricalConsump	-2.013	.689	-2.922	.003
Education <-- Poverty	-.044	.017	-2.552	.011
Education <-- MSMEs	.896	.064	1.510	.131
Education <-- IndustrialDevelop	.065	.059	.725	.468
Education <-- RoadInfrastructure	-.407	.189	-2.161	.031
Education <-- Wage	2.059	.501	4.114	***
Education <-- ElectricalConsump	-.056	.127	-.438	.662

Figure 7. Scalar Estimates Region 2
Resource: Amos 18 data processing result



The results of the analysis show the influence of one variable on another variable according to the research objectives so based on Figure 3 and Figure 4, a summary of the influence of independent variables on dependent variables can be represented in Table 2.

The table also shows that Region 1 and Region 2 each have a coefficient and probability according to the relationship between variables.

Table 2. Coefficients of the variables in Region 1 and Region 2,

No		The Relation of the Variables		Region 1 (IBB)		Region 2 (IBT)	
		Dependent variables	In dependent variables	Coefficient	Probability	Coefficient	Probability
1	Unstandardized Direct Effect	Poverty	1. Road Infrastructure	2.307	0.000	6.226	0.000
			2. Wage	-1.031	0.196	3.933	0.160
2	Unstandardized Direct Effect	Education	3. MSMEs	0.900	0.000	-1.193	0.000
			4. Industrial Development	-1.597	0.000	-2.698	0.000
3	Standardized Total Effect	Poverty	5. Electrical Consumption	-0.871	0.005	-2.013	0.003
			1. Road Infrastructure	-0.303	0.144	-0.407	0.031
4	Standardized Total Effect	Education	2. Wage	0.874	0.024	2.059	0.000
			3. MSMEs	-0.116	0.352	0.096	0.131
5	Standardized Total Effect	Poverty	4. Industrial Development	0.029	0.833	0.065	0.468
			5. Electrical Consumption	-0.073	0.634	-0.056	0.662
6	Standardized Total Effect	Education	6. Poverty	-0.003	0.949	-0.044	0.011
			1. Road Infrastructure	-0.310		-0.310	
7	Standardized Total Effect	Poverty	2. Wage	0.877		1.877	
			3. MSMEs	-0.119		0.148	
8	Standardized Total Effect	Education	4. Industrial Development	0.034		0.183	
			5. Electrical Consumption	0.070		0.032	
9	Standardized Total Effect	Poverty	6. Poverty	-0.003		-0.044	
				-			

Source: Data processing results, 2024.

Comparing the influence between all the variables included in the model, it is known that, from table 2, it shows that the variable that has the total, or greatest, influence on poverty is road infrastructure in both the eastern and western regions. With path coefficients of 2.307 and 6.226 respectively. This fact shows the importance of road infrastructure in reducing poverty and improving the quality of education in both regions. However, the impact on education is wages, with path coefficients of 0.88 and 1.88 respectively.

RESULTS AND DISCUSSIONS

Paying attention to the relationship between road infrastructure and poverty, it is known from table 2 that road instructors have a significant positive influence on poverty at the confidence level $\alpha = 0.05$ in both Western Indonesia (IBB) and Eastern Indonesia (IBT). Furthermore, it can be seen in the same table that the road infrastructure coefficient is 2,307 in IBB and 6,226 in IBT, which means that if road instructors increase by 1%, poverty will increase by 2.31% in the IBB section and 6.23% in IBT. So this fact shows that road instructors exacerbate poverty in both regions. It is known that the decline in poverty in the research period from 2017 to 2022 was not significant and even fluctuated, where in 2020 it reached above 10%, whereas in the previous year it was only 9.22% and after that year it fell at a slower pace.

Meanwhile, road instructors showed an insignificant increase because the data used included state roads, provincial roads and district roads (excluding city and village roads). So the facts of this research contradict previous research which stated that road instructors had a negative influence on poverty in the 2015-2019 period (Khaira, Alfatih, 2021). This condition cannot be separated from the impact of Covid-19 which has caused poverty to increase rapidly. Furthermore, it is also known that road infrastructure has an insignificant negative influence on education at IBB but is significant at IBT. This fact certainly does not meet expectations because the data used is only the length of national, provincial and district roads, meaning it does not include city and village roads.

The relationship between wages and poverty can be explained by the theory of economic growth where labor or wages contribute to economic growth, both classical and neoclassical growth theories. The research results show that wages have an insignificant negative effect on poverty at the confidence level $\alpha = 0.10$ in both IBB and IBT. This shows that increasing wages is not significant in reducing poverty. This is because the data used is provincial minimum wage (UMP) data, of course it is different from using wages in general. This fact is supported by research which states that the minimum wage has a positive and insignificant effect on poverty (Putri, E. Millenia & Putri, Dewi



Zaini 2021; and Campos Vazquez, R. M. & Gerardo E. (2022), minimum wage and social assistance expenditure limit a negative and significant effect on the number of poor people. This is in line with research (Cindy Devina Nasution and Khairil Anwar, 2023).

MSMEs have a significant positive influence on poverty in the IBB area while in the IBT they have a significant negative influence at the confidence level $\alpha = 0.01$. If MSMEs increase by 1%, poverty will increase by 0.90 % in Region IBB, while in Region IBT it will decrease by 1.19 %. This negative influence dates back to The number of MSMEs had a negative effect on poverty levels (Widowati, M. and Purwanto, A.B. (2021). Education and training provide key benefits in improving the competencies, skills, and knowledge needed by MSMEs to run their businesses more efficiently. Many previous studies have shown that education has a positive influence on the development of MSMEs, such as research, (Sutrisno at al., 2023) and (Meitriana, M. A. at al., 2021). However, this research tries to conduct variable analysis by looking at the influence of MSMEs on education. With the development of MSMEs, people's income will also increase so that education can be more advanced. Thus, this research hopes that there will be a positive influence of MSMEs on education. However, research facts show that there is no influence of MSMEs on education. It should be noted that if we look at the number of MSMEs according to the variables used, the result is that there is no influence on education. This fact can be caused by the low level of human resources for MSMEs, the number of small industries does not necessarily increase income significantly so that indirectly it cannot encourage an increase in education levels.

Industrial growth has a significant negative influence on education both at IBB and IBT at the confidence level $\alpha = 0.01$ with regression coefficients of -1,597 and -2,698. This shows that if industrial development increases by 1%, poverty will decrease by 1.60% in IBB and 2.70% in IBT, respectively. So if industry develops naturally or artificially, it will lead to an increase in income from this sector, thus having a positive impact on economic growth. Furthermore, economic growth will reduce poverty. This fact is in line with research by Dhiyaa'ulhaq, M., Sahara, S., & Juanda, B. (2023). which states that investment in micro and small industries can significantly reduce the percentage of poverty in most sub-districts in D.I. Yogyakarta, except in sub-districts in the Yogyakarta City area and its surroundings. However, contrary to Rahman's research, Arif (2021) stated that the industrial sector has a positive influence on poverty.

So far, the research that can be found is related to human investment theory which states that education has a positive influence on economic growth which ultimately has an impact on reducing poverty. This research highlights the opposite. The research results show that industrial development has an insignificant positive influence on education. This is made clear by research (Mire, at al. 2023) which states that education has had a significant positive influence both before and after COVID-19 in Indonesia. Further research (Federman, M. and Levine, David

I., 2005). which states in more detail that industrial growth has a significant positive influence at the confidence level $\alpha = 0.01$ on education at the age of 25-50 years, but for those aged between 18-22 years it shows a significant negative influence at the confidence level $\alpha = 0.05$.

Electricity consumption has a significant negative influence at the confidence level $\alpha = 0.01$. against poverty both in the IBB area and in the IBT area. If electricity consumption increases by 1%, poverty will decrease by 0.87% in IBB and 2.01 in IBT, respectively. So when compared, the effect of electricity consumption on poverty in IBT (prob. = 0.003) is higher or more significant than the effect in IBB (prob. = 0.005). Furthermore, it was found that electricity consumption had no effect on education. Electricity consumption does not have an influence on education because the impact of COVID-19 on the development of industrial electricity consumption has decreased, and has not yet fully recovered, as seen in 2020, according to BPS data, a decline in the number and output of industry, especially small and medium industries. Electricity consumption tends to decrease due to COVID-19 and Christmas and New Year. On the other hand, the cause is awareness or effectiveness of electricity use by households (Ministry of Energy and Mineral Resources, 2023).

Poverty has no effect on education in the IBB area while in the IBT area it has a significant negative effect at $\alpha = 0.05$. If poverty decreases by 1% in the IBT area, it will lead to an increase in education of 0.04% in that area. Since President VI's administration, poverty has been reduced sharply, the number of poor people in 2004 was 36.1 million or 16.7 percent of Indonesia's population. This figure decreased until in 2013, the number of poor people was 28.1 million or 11.4 percent. The programs launched by President VI include the Mandiri National Community Empowerment Program (PNPM), the Family Hope Program (PKH), and rice subsidies for the poor (Raskin). There is also the provision of Poor Student Assistance (BSM) funds, the Askeskin/Jamkesmas program, and compensation and temporary programs. Furthermore, the decline in poverty from 2018 to 2022 according to BPS was only 9.66%, to 9.57%, so on average poverty fell by only 0.82% because during COVID-19 there was actually a significant increase in poverty from 9.22% to 10.19%. This is why the influence of poverty on education is still weak, especially at IBB. The thing that causes IBB to be very different from IBT when viewed from poverty is that the proportion of the population including poor people who live in IBT is much less than the poor population in the IBB area, where it is known that the percentage of people living on Java alone has reached 60% (BPS, 2023). Thus, it is natural that poverty reduction at IBB is unable to have an impact on education, where it is known that education always increases from year to year, measured by years of schooling.

CONCLUSION AND RECOMMENDATION

Conclusions

Based on the analysis and the results of the previous discussion, the following conclusions are drawn:



1. Road infrastructure has a positive influence on poverty alleviation in both the IBB and IBT regions, but education has a negative influence in both regions.
2. Wages have a negative influence on poverty in Western Indonesia. Therapy in the Eastern region has a positive influence
3. MSMEs have a positive influence on poverty in IBB, but in the IBT area they have a negative influence.
4. Industrial development and electricity consumption have a negative influence on poverty both in IBB and IBT
5. Wages have a positive effect on poverty both in the western and eastern parts of Indonesia
6. MSMEs and industrial development do not have a positive impact on education in both the Western and Eastern regions
7. Electricity consumption has no influence on education in both the eastern region of Indonesia and the western region of Indonesia
8. Reducing poverty does not have an effect of increasing education at IBB but at IBT it has an increasing impact.

Recommendations

The suggestions to be put forward based on the discussion and conclusions that have been stated, among others:

1. Even though road instructors do not have a negative influence on poverty and a positive influence on education, it would be better for the government, including regional governments, not to reduce investment activities in road construction, where this research has not included the length of city and village roads, so it is hoped that in future research using road status data fully.
2. An increase in wages causes a reduction in poverty and an increase in education, but there is still a need for a comprehensive discussion, because these wages can have negative effects such as inflation and also positive effects such as increasing workers' income which can support economic development
3. Efforts to eradicate poverty must still be the focus of the government's attention, because over the past decade the reduction in poverty has been very insignificant
4. Industrial development, especially digital industry, should be prioritized in order to increase added value which in turn leads to poverty alleviation
5. Disparity between the two regions in terms of poverty and education still shows a very large gap in the two regions, so there is a need for greater investment than in previous years, especially road and bridge infrastructure as well as meeting 40% or more of education costs from the development budget in Eastern region (IBT) of Indonesia.

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