



The effect of GRDP, education, and gender empowerment index on poverty

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ABSTRAK

Kemiskinan merupakan masalah yang kompleks dan multidimensional yang terjadi di berbagai negara, salah satunya Indonesia. Penelitian ini bertujuan untuk menganalisis pengaruh PDRB, pendidikan, dan Indeks Pemberdayaan Gender terhadap kemiskinan di lima kabupaten di Jawa Tengah dari tahun 2010-2021. Penelitian ini merupakan penelitian deskriptif kuantitatif dengan menggunakan data sekunder yang diperoleh dari Badan Pusat Statistik. Teknik analisis data menggunakan regresi linier berganda dengan data panel. Hasil penelitian menunjukkan bahwa PDRB dan pendidikan berpengaruh negatif dan signifikan terhadap kemiskinan. Indeks Pemberdayaan Gender tidak berpengaruh terhadap kemiskinan karena adanya ketimpangan gender. Implikasi dari penelitian ini adalah pemerintah daerah kabupaten Kebumen, Brebes, Pemalang, Banjarnegara, dan Banyumas perlu terus menggali dan mengelola potensi sumber daya yang ada untuk mendorong peningkatan PDRB di lima kabupaten tersebut. Di samping itu, pemerintah di kabupaten-kabupaten tersebut perlu memberikan kemudahan akses pendidikan dan meningkatkan program pendidikan serta secara berkala mengevaluasi ketepatan program tersebut terhadap sasaran yang dituju sehingga kemiskinan menurun.

ABSTRACT

Poverty is a complex and multidimensional problem occurring in various countries, one of which is Indonesia. This research aims to analyze the effect of GRDP, education, and the Gender Empowerment Index (GEI) on poverty in five regencies in Central Java from 2010 - 2021. The Central Bureau of Statistics provided secondary data for this descriptive quantitative research. The data analysis technique used multiple linear regression with panel data. The results showed that GRDP and education had a negative and

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significant effect on poverty. Gender Empowerment Index had no effect on poverty due to gender inequality. The implications of this research were the regional governments of Kebumen, Brebes, Pemalang, Banjarnegara, and Banyumas Regencies need to continue exploring and managing the potential of existing resources to encourage an increase in GRDP in the five regencies. In addition, the governments in those regions must make education more easily accessible, enhance their educational initiatives, and consistently assess how successfully they are reaching their intended audiences in order to reduce poverty.

INTRODUCTION

Poverty is a multidimensional problem with manifestations in the economic, social, political, and environmental fields (Danaan, 2018). One of the developing countries that faces poverty problems is Indonesia. In Indonesia, reducing poverty is a priority in development initiatives supported by the National Long-Term Development Plan and the Sustainable Development Goals (SDGs) agenda (Arifin, 2020). Even though there has been significant growth, infrastructure development, and investment in health and education over a substantial period, some people still suffer from severe deprivation and are vulnerable to disadvantage (Mehta *et al.*, 2018). Increasing poverty indicates a decrease in people's welfare. Therefore, it needs to be evaluated regularly through the development of programs, policies regarding poverty, and a factor that affects the poverty rate (Leonita & Sari, 2019).

In 2021, the national poverty condition is a poverty rate of 10.14 percent with 27,542,770 poor people. Meanwhile, the extreme poverty rate is four percent with 10,865,279 people living in extreme poverty. To reduce poverty, the Government of Indonesia through the National Team for the Acceleration of Poverty Reduction seeks to reduce poverty by focusing on extreme poverty which focuses on seven provinces namely East Java, West Java, Central Java, East Nusa Tenggara, Papua, Maluku, and West Papua. Extreme poverty reduction is prioritized in 35 districts in these seven provinces. The three provinces where poverty reduction is prioritized are located on Java Island, even though Java Island plays an important role in Indonesia's development because it contributes around 60 percent to the economy. In addition, development also tends to be centralized on this island, which has an impact on economic and population mobility (Andiyan & Rachmat, 2021). Among the three provinces that suffer from extreme poverty in Java, Central Java has the highest percentage of poor people. In the province of Central Java, poverty reduction is prioritized in five regencies, namely Kebumen, Brebes, Pemalang, Banjarnegara, and Banyumas. Data about poverty in five regencies in Central Java can be seen in Table 1.

Table 1
Percentage of Poor People in Five Regencies in Central Java

No.	Regency	Percentage of Poor People (%)				
		2017	2018	2019	2020	2021
1.	Kebumen	19.60	17.47	16.82	17.59	17.83
2.	Brebes	19.14	17.17	16.22	17.03	17.43
3.	Pemalang	17.37	16.04	15.41	16.02	16.56
4.	Banjarnegara	17.21	15.46	14.76	15.64	16.23
5.	Banyumas	17.05	13.50	12.53	13.26	13.66

Source: Central Bureau of Statistics Indonesia (2022)

According to Central Bureau of Statistics Indonesia (2022), the percentage of poor people in five regencies in Central Java in 2018 and 2019 decreased. However, the number is increased due to the impact of the Covid-19 pandemic in 2020 and 2021. The Covid-19 pandemic affects all levels of society, especially low-income groups, through a combined mechanism of supply and demand shocks that cause a decrease in productive activities, income reduction, and suppression of economic growth. This also has an impact on reducing average per capita expenditure at the household level (Ningtias & Anwar, 2021).

Poverty conditions can be influenced by many factors because poverty is a multidimensional problem. Based on the economic perspective, the GRDP is reflection of economic growth and productivity. From the social perspective, the education variable is related to the quality of human resources which will be related to careers and salaries/wages. From a cultural perspective, the gender empowerment index was chosen because it relates to the active role of women. The existence of a patriarchal culture has limited the role of women in the socio-economy. Thus, women are often considered a burden. Whereas the active role of women can potentially contribute to income to reduce poverty. However, gender empowerment efforts still have many challenges, because in Central Java there are often problems of gender inequality (Ayumn *et al.*, 2022). These three variables were chosen to further investigate their effect on poverty.

According to Hasibuan *et al.* (2022), Gross Regional Domestic Product (GRDP) is one of the factors that affect poverty because GRDP is an indicator of the success of economic development. In other words, greater GRDP will create the potential source of regional revenue caused by the greater income of the people in the area. Therefore, the higher the GRDP, the more prosperous the population is so that poverty decreases. Apart from GRDP, another factor that can affect poverty is education. According to Abaidoo (2021), education is influential in poverty reduction and has a very important role in the formation of human capital which has an impact on worker productivity and income. Higher income will result from having more education. Higher education will indirectly open job opportunities for people. Conversely, workers with low education will get low income (Julianto & Utari, 2019). Not only these two factors, but gender empowerment is also a factor that affects poverty. Based on the feminization of poverty theory, the existence of gender inequality causes poverty to be higher (Sanjay, 2018). This occurs because income discrimination, variations in employment levels in paid work, and shift

length are all impacted by gender disparity, which also has an effect on intra-career mobility inequality. The gendered poverty approach focuses on the gender implications and social costs of poverty. The active role of women increases as gender equality increases. Poverty will eventually decline as the women empowerment index rises.

Some studies related to poverty are research conducted by Martini & Woyanti (2022), where GRDP has a negative effect on poverty, because increasing GRDP indicates increasing income. Increased income leads to increased purchasing power which has an impact on increasing the fulfilment of needs. Therefore, welfare increases and poverty decreases. Further research related to poverty is research conducted by Jacobus *et al.* (2019) which found that education has a negative effect on poverty. The reason is that increasing education will encourage the formation of quality human resource capabilities which have an impact on the greater opportunity to get a job and salary according to their abilities. If the salary is higher, the purchasing power is also higher. So, the fulfilment of needs is more fulfilled, and life is more prosperous, and poverty is reduced. Then, research related to poverty is research conducted by Alisjahbana & Pitriyan (2016) which concluded that gender empowerment has a negative effect on poverty. Gender empowerment is measured by the Gender Empowerment Index (GEI). The Gender Empowerment Index (GEI) is an indicator that shows whether women can play an active role in economic and political life (Central Bureau of Statistics Indonesia, 2012). If the GEI increases, the active role of women in economic and political activities also increases. An increase in the active role of women in terms of involvement in parliament, professional staff, and income contributions can improve welfare. Finally, poverty will decrease.

The formulation of problems related to the phenomena previously described can be organized into questions, how does the Gross Regional Domestic Product (GRDP), education, and the Gender Empowerment Index (GEI) affect poverty in five regencies in Central Java in 2010-2021. Therefore, this research aims to analyze the effect of Gross Regional Domestic Product (GRDP), education, and Gender Empowerment Index (GEI) on poverty in five regencies in Central Java from 2010 to 2021. Given that 2010 is the most recent base year in Indonesia for computing GRDP at constant prices, the period from 2010 to 2021 was selected. Since the influence of inflation has been taken into account when calculating the GRDP, constant prices have been chosen. Due to the 12-year "compulsory education" scheme, 2021 was picked. In order to demonstrate 12 years when the time frame is consistent with the obligatory education program, the period from 2010 to 2021 is adequate. In addition, from 2010 to 2021 there were legislative elections in 2014 and 2019. These parliamentary elections served as a signal for the gender empowerment index's indicator of women's participation in parliament, which is one of its dimensions. This research is useful to add to the literature on the effect of gross regional domestic product (GRDP), education, and gender empowerment index (GEI) on poverty. They become input and reference material for similar research related to poverty. Additionally, as a factor that local governments should take into account while

formulating policies to reduce poverty and promote economic theory. In addition, this research has become a supplementary for understanding the feminization of poverty. Therefore, there is a need to reduce patriarchal culture and embed the knowledge that women's roles play a significant part in alleviating poverty.

In this research, poverty is proxied by the percentage of poor people as the dependent variable. Meanwhile, GRDP based on constant prices for the 2010 base year, the education is proxied by the average length of schooling, and Gender Empowerment Index (GEI). Based on the available data, there was an increase in the GRDP variable and the average years of schooling variable in the five regencies studied, but poverty also continued to rise even though in theory the effect was negative. In addition, the gender empowerment index data that has increased in several regions is also not followed by a decrease in poverty. So, for the discrepancy between the phenomenon and the existing theory, a study was conducted focusing on the research gap. The difference between this research and previous research is the gender empowerment index, which has not been studied much before in terms of its effect on poverty. The active role of women, as measured by the gender empowerment index, can encourage the realization of gender equality. The efforts for gender equality that continue to be made by the government, the community, and the private sector, are expected to enable women to break out of the circle of poverty and have equal opportunities to achieve their dreams and develop their potential. This will not only bring benefits to the women themselves, but also to their families and communities. The expected contribution of this latest variable is to support gender-responsive development. Thus, gender equality increases and poverty decreases. Therefore, this research was made to complement existing research.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Poverty

Poverty is defined as a condition where a person cannot fulfill the needs of shelter, food, clothing, proper health, and education (Utami & Siregar, 2021). Poverty includes primary aspects that include poor assets, socio-political organization, knowledge, and skills. In addition to primary aspects, poverty also includes secondary aspects such as poor social networks, financial resources, and information (Arsyad, 2015). According to the World Bank, the causes of poverty are education, employment, gender, access to basic health services and infrastructure, and geographical location (Nazara, 2007). Meanwhile, Todaro & Smith (2012) stated that poverty is caused by the following factors, such as a relatively low level of national income and a relatively slow rate of economic growth, relatively low per capita income, unequal income distribution, the majority of the population living under the pressure of absolute poverty, poor health facilities and services, malnutrition, and disease outbreaks. When infant mortality is high, educational facilities and curriculum

content are inadequate. Therefore, the failure rate of education completion is relatively high, while literacy rates are still low.

Nurkse (1952) argues for a vicious circle of poverty. He considers poverty as a phenomenon caused by low income, low savings, low investment, low capital formation, low productivity, and low employment. This circle is likely to continue unless there is outside intervention. The poverty circle is sometimes termed a development trap when applied to developing countries. The reasons for this vicious cycle have been classified into: supply side causes, demand side causes, and imperfect market causes. Supply-side causes indicate that less developed countries become underdeveloped because their productivity is too low and cannot encourage capital formation (Henry, 2022). Based on Human Capital Theory, it is emphasized that human capital theory regulates indirect effects such as improved education. Where education is considered an important driver in poverty reduction and economic growth. Education plays an important role in the formation of human capital as it impacts the productivity of workers as well as their income (Abaidoo, 2021). Poverty is also explained in Pearce's feminization of poverty theory, she argues that gender inequality leads to higher poverty. This happens because gender inequality has an impact on inequality of intra-career mobility, different levels of employment in paid work, wage discrimination, and the duration of work shifts. These things make women's productivity at work lower (Sanjay, 2018).

Gross Regional Domestic Product

GRDP is defined as the value of all goods and services produced in a region in a certain period where the number of products produced is measured in money (Alhudhori, 2017). Gross regional domestic product (GRDP) illustrates the performance of development over time toward a clear regional economy (Vendison *et al.*, 2022). GRDP can affect poverty. If GRDP increases, it indicates the spending of economic actors also increases. The increasing GRDP indicates the spending of economic actors is also increased. For example, consumer households experience an increase in income. So, they will increase their consumption. Increased consumption means that the fulfillment of needs also increases, in other words, the purchasing power increases. When purchasing power increases, welfare increases and poverty decreases. This is supported by the research of Martini & Woyanti (2022) that GRDP has a negative effect on poverty. In addition, it is also supported by research conducted by Giovanni (2018) that GRDP has a negative effect on poverty. Therefore, the hypothesis can be proposed as follows:

H1: GRDP has a negative effect on poverty.

Education

Education is a conscious and structured effort to form a conducive learning

situation and process. So, students actively cultivate spiritual strength, self-control, personality, intelligence, noble character, and skills needed for themselves (Amalia, 2012). Education is closely related to the labor market. The higher the education will create the income. Indirectly, high education will lead individuals to job choices (Julianto & Utari, 2019). There is wage segmentation related to the level of education of the workforce. When education increases, the quality of human resources will also increase. The increase in the quality of human resources will lead to an increase in salaries/wages earned following the quality of these human resources. The increase in salary/wages means that the income also increases. Increased income causes increased purchasing power so that more needs can be met. That way poverty will decrease because welfare is increasing. This is supported by the research of Awan *et al.* (2011) which concluded that education has a negative effect on poverty and research from Jacobus *et al.* (2019) which concluded the same thing, that education has a negative effect on poverty. Therefore, the hypothesis can be proposed as follows:

H2: Education has a negative effect on poverty.

Gender Empowerment Index

The gender empowerment index is an indicator that describes how women can contribute in the form of an active role in economic and political life. The Gender Empowerment Index is important to calculate because it is one of the main indicators for measuring the success of human development (Salsabila & Hendrawan, 2021). In addition, the gender empowerment index can reflect differences in roles between women and men in terms of achieving capabilities based on the status and position of women compared to men (Pake *et al.*, 2018). If the gender empowerment index increases, the active role of women also increases so that it can improve welfare so that poverty decreases. It was supported by research conducted by Alisjahbana & Pitriyan (2016) which concluded that women's empowerment has a negative effect on poverty. Therefore, the hypothesis can be proposed as follows:

H3: The gender empowerment index has a negative effect on poverty.

RESEARCH METHODS

This type of research was quantitative descriptive. The research location was in five regencies in Central Java that were prioritized for extreme poverty reduction in 2021, namely Kebumen, Brebes, Pemalang, Banjarnegara, and Banyumas. The object studied in this research was poverty. The data source used was secondary data obtained from the Central Bureau of Statistics Indonesia. The method used was a literature study.

This study used multiple linear regression analysis with panel data, where panel data is a combination of time series and cross-section data. Multiple linear

regression analysis was chosen because it is in accordance with the objectives of this study, namely testing the effect of the independent variable on the dependent variable. The number of independent variables that were more than one causes the regression used was multiple linear regression. The multiple linear regression equation models can be expressed as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_{it} \dots\dots\dots 1$$

Where Y = Poverty of five regencies in Central Java; X1= GRDP of five regencies in Central Java; X2= Education of five regencies in Central Java; X3= Gender Empowerment Index of five regencies in Central Java; β_0 = intercept; $\beta_1, \beta_2, \beta_3$ = Regression coefficients of independent variables; ε_{it} = Error component at time t for cross-section unit-i; i = 1, 2, 3, 4, 5 (cross-section data of five regencies in Central Java); t = 1, 2, 3, ..., 12 (time-series data, 2010-2021).

In panel data regression analysis, there are three approaches, namely the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The common effect model is done by combining time series and cross section data using the Ordinary Least Square (OLS) method. Fixed effect model (FEM) takes into account the possibility of omitted-variables problem that may cause changes in the intercept of time series or cross section. In the FEM approach, dummy variables are added to allow for changes in the intercept. Random effect models do not use dummy variables but use residuals that are thought to have intertemporal and interindividual relationships. REM assumes that each variable has a different intercept, but the intercept is random (Gujarati *et al.*, 2012). The best model selection is done through the Chow Test and Hausman Test. The Chow test is conducted to determine which model is more appropriate to use the common effect model (CEM) or the fixed effect model (FEM) to estimate panel data. While the Hausman Test is conducted to determine which is more appropriate to use the Fixed Effect Model (FEM) or Random Effect Model to estimate panel data (Gujarati *et al.*, 2012). In the multiple regression model estimated through Ordinary Least Squares (OLS), it must be meets classical assumptions. Therefore, the estimate meets the BLUE (Best Linear Unbiased Estimation) criteria (Latuconsina, 2017). The classical assumption test includes normality, multicollinearity, heteroscedasticity, and autocorrelation (Matondang & Nasution, 2021). After that, the statistical test consists of the t-test and the F-test with the following criteria:

a) t-Test

H0: $\beta_i \geq 0$ (There is no significant negative effect of independent variable X individually on dependent variable Y).

H1: $\beta_i < 0$ (There is a significant negative effect of independent variable X

individually on the dependent variable Y).

b) F-Test

$F_{\text{test}} < F_{\text{table}}$

H0 is accepted and H1 is rejected (All independent variables X have no significant effect on the dependent variable Y).

$F_{\text{test}} \geq F_{\text{table}}$

H0 is rejected and H1 is accepted (All of the independent variables X jointly affect the dependent variable Y).

DATA ANALYSIS AND DISCUSSION

Selection of Estimation Method

First, regression model selection using the Chow Test. Hypotheses in the Chow test was as follows:

H0: Common Effects model is better than Fixed Effects model

H1: Fixed Effects Model is better than Common Effects model

The basis for decision making in the Chow Test is to use the significance value or p-value. If the significance value is greater than $\alpha = 0.05$, H0 can be accepted. If the significance value is smaller than $\alpha = 0.05$, H0 rejected (H1 is accepted).

Table 2
Selection of Regression Model with Chow Test

Effect Test	Statistic	d.f.	Prob.
Cross-section F	70.457	(4.52)	0.000
Cross-section Chi-square	111.563	4	0.000

Source: Data processed (2022)

Based on the Chow Test results in Table 2, a Cross-section F value of 0.000 and a Cross-section Chi-square of 0.000. This value was smaller than $\alpha = 0.05$. Therefore, H0 was rejected and H1 was accepted. Due to accepting H1, the model chosen was the Fixed Effect Model (FEM).

Second, regression Model Selection using Hausman Test. Based on the Chow Test, the model chosen was the Fixed Effect model, then proceed with the Hausman Test. The hypothesis used in this Hausman Test was:

H0: Random Effects Model is better than Fixed Effects.

H1: Fixed Effects model is better than Random Effects.

The basis for decision making in the Hausman Test is based on the significance value or p-value. If the significance value is greater than $\alpha = 0.05$, H0 is accepted. If the significance value is smaller than $\alpha = 0.05$, H0 is rejected and accept H1. The Hausman Test result can be seen in Table 3. Based on Table 3, Hausman test showed that the significance value (p-value) of the cross-section was 0.017. The significance

value was smaller than $\alpha = 0.05$. It indicates that the accepted hypothesis was H1. In other words, the regression model chosen was the Fixed Effect Model (FEM).

Table 3
Selection of Regression Model with Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	Prob.
Cross-section random	10.147	3	0.017

Source: Data processed (2022)

Classical Assumption Test

The normality test was obtained with the Jarque-Berra test. Based on the Jarque-Berra test, the probability value of Jarque-Berra was 0.657. This value was greater than $\alpha = 0.05$ ($0.657 > 0.05$). Thus, it can be concluded that the residuals were normally distributed. It means that the classical assumptions regarding normality have been fulfilled.

The multicollinearity test was done with the Pairwise Correlation method. Based on Table 4, it was known that all coefficient values of independent variables were less than 0.80. Therefore, it can be stated that there was no multicollinearity in the model.

Table 4
Multicollinearity Test Result

	X ₁	X ₂	X ₃
X ₁	1.000	0.496	-0.088
X ₂	0.496	1.000	0.406
X ₃	-0.088	0.406	1.000

Source: Data processed (2022)

The heteroscedasticity test is obtained by the Park Test, where the independent variables regression process is carried out on the absolute value of residuals. Based on the Park Test, the probability value of X₁ is 0.160, X₂ is 0.245, and the probability value of X₃ is 0.494. Therefore, all sig values of independent variables that have been regressed on absolute residuals are more than $\alpha = 0.05$. Therefore, it showed that heteroscedasticity does not occur.

The autocorrelation test is done by looking at the Durbin-Watson value. Based on the calculation, the Durbin-Watson value is 1.708, this value is between dU (1.689) and 4-dU (2.273). Thus, it can be said that there is no autocorrelation. This can also be illustrated in Figure 1.

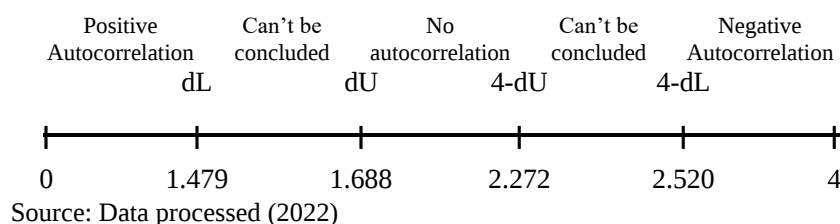


Figure 1
Illustrated of Autocorrelation Test Result

Multiple Linear Regression Result

Based on the Chow test and Hausman test that the Fixed Effect Model (FEM) is the appropriate model in this study. The Fixed Effect Model (FEM) method assumes that at various periods the characteristics of each individual are different. This difference is reflected by the intercept value in the different estimation models for each individual (Gujarati *et al.*, 2012). The results of multiple linear regression analysis in this study are shown in Table 5.

Table 5
Multiple Linear Regression Results

Variable	Coefficient	Std.Error	t-Statistic	Probability
C	35.543	2.214	16.049	0.000
X ₁	-0.402	0.041	-9.680	0.000
X ₂	-1.360	0.397	-3.424	0.001
X ₃	-0.001	0.0326	-0.035	0.971
Fixed effect (Cross)				
Kebumen	0.661			
Brebes	2.961			
Pemalang	-3.377			
Banjarnegara	-4.456			
Banyumas	4.210			

Source: Data processed (2022)

Based on Table 5, the regression equation for five regencies s in Central Java about the average of poverty is obtained as follows:

$$Y = 35.543 - 0.402X_1 - 1.360X_2 - 0.001X_3 \dots\dots\dots 2$$

Based on the regression equation, a constant value is obtained of 35.543. When change in GRDP, education, and the gender empowerment index are zero, the average poverty in the five regencies of Kebumen, Brebes, Pemalang, Banjarnegara, and Banyumas is 35.543 percent.

Furthermore, the regression equation is created as follows in relation to the intercept difference in each regency:

a. Kebumen

$$Y = 35.543 + 0.661 - 0.402X_1 - 1.360X_2 - 0.001X_3$$

$$Y = 36.204 - 0.402X_1 - 1.360X_2 - 0.001X_3 \dots\dots\dots 3$$

b. Brebes

$$Y = 35.543 + 2.961 - 0.402X_1 - 1.360X_2 - 0.001X_3$$

$$Y = 38.504 - 0.402X_1 - 1.360X_2 - 0.001X_3 \dots\dots\dots 4$$

c. Pemalang

$$Y = 35.543 - 3.377 - 0.402X_1 - 1.360X_2 - 0.001X_3$$

$$Y = 32.166 - 0.402X_1 - 1.360X_2 - 0.001X_3 \dots\dots\dots 5$$

d. Banjarnegara

$$Y = 35.543 - 4.456 - 0.402X_1 - 1.360X_2 - 0.001X_3$$

$$Y = 31.087 - 0.402X_1 - 1.360X_2 - 0.001X_3 \dots\dots\dots 6$$

e. Banyumas

$$Y = 35.543 + 4.210 - 0.402X_1 - 1.360X_2 - 0.001X_3$$

$$Y = 39.753 - 0.402X_1 - 1.360X_2 - 0.001X_3 \dots\dots\dots 7$$

These equations show that although the independent variables' slopes or coefficients are the same, the intercepts are different. In the fixed effect model, intercept differences occur due to differences in characteristics. In this study, differences in characteristics are considered as differences in economic, geographic, demographic, and socio-cultural conditions. The differences in each intercept represent different levels of poverty in the regencies and the average poverty across all regencies. If the intercept of a regency is higher than the average poverty intercept of all regencies, the poverty of that regency is higher than the average poverty. On the contrary, if the intercept of the regency is lower than the average poverty intercept, the poverty in the regency is lower than the average poverty.

First, the intercept of Kebumen regency is 0.661 higher than the intercept of average poverty. That means the poverty in Kebumen is higher than the average poverty of all regencies. Second, intercept of Brebes regency is 2.961 higher than the intercept of average poverty. It means the poverty in Brebes is higher than the average poverty of all regencies. Third, the intercept of Pemalang regency is 3.377 lower than the intercept of average poverty. It means the poverty in Pemalang is lower than the average poverty of all regencies. Fourth, the intercept of Banjarnegara regency is 4.456 lower than the intercept of average poverty. It means the poverty in Banjarnegara is lower than the average poverty of all regencies. Fifth, the intercept of Banyumas regency is 4.210 higher than the intercept of average poverty. It means the poverty in Banyumas is higher than the average poverty of all regencies. The condition shows that the poverty in Banyumas regency is highest.

The GRDP coefficient value of -0.402. It means that if GRDP increases by one trillion rupiahs (IDR), poverty decreases by 0.402 percent. The coefficient value of Education is -1.360. It means that if education increases by one year, poverty decreases by 1.360 percent. The coefficient value of the Gender Empowerment Index is -0.001. It means that if the gender empowerment index increases by one percent, poverty decreases by 0.001 percent.

Based on Table 5, the probability value of the GRDP variable is $0.000 < \alpha$ (0.05). This probability value is smaller than $\alpha = 5\%$. So, H_0 is rejected and H_1 is accepted. Therefore, it can be stated that partially the GRDP has a negative and significant effect on poverty. Moreover, the probability value of education is $0.001 < \alpha$ (0.05). This probability value is smaller than $\alpha = 5\%$. So, H_0 is rejected and H_1 is accepted. Therefore, it can be stated that partially education has a negative and

significant effect on poverty. Then, the probability value is $0.971 > \alpha$ (0.05). This probability value is greater than $\alpha = 5\%$. Thus, H_0 is accepted and H_1 is rejected. Therefore, it can be stated that partially the Gender Empowerment Index (GEI) variable is not affecting poverty.

The F test is used to test the joint influence of independent variables on the dependent variable. The basis for testing the F test is using the F-test and F table. In this study, the value of the F-test (F statistic) is 89.697 and F-table (α ; df1; df2) = (0.05; 3; 55) is 2.772. Therefore, all independent variables jointly have a significant effect on the dependent variable ($89.697 > 2.772$).

Based on the results of multiple linear regression analysis of panel data, the Adjusted R-squared value is 0.913 or 91.3 percent. This value indicates that the variation in the independent variables of GRDP, education, and Gender Empowerment Index (GEI) can explain the variation of change of poverty by 91.3 percent. However, the remaining 8.7 percent is explained by other variables outside this research model.

Discussion

Various policy strategies have been implemented to reduce poverty. However, there are often errors in the determination of strategies such as only oriented to economic aspects rather than multidimensional aspects, nuanced curative (generosity) rather than productivity, positioning the poor as objects rather than subjects, and the government often acting as a ruler rather than a facilitator (Huraerah, 2013). These strategies and policies certainly need to be evaluated periodically, as do periodic evaluations of the factors that influence poverty. Poverty is seen as a condition where a person cannot fulfill the needs of shelter, food, clothing, proper health, and education (Utami & Siregar, 2021). The inability to fulfill these needs has an impact on the low quality of life and the quality of resources. This is consistent with the vicious circle theory of poverty by Nurkse (1952). In addition to these issues, there is also the term feminization of poverty, where women live in poverty more than men. If the economic status of women is lower, the quality of life of the family, including their children, will remain low (Abda & Cahyono, 2022). According to research conducted by Walczak (2022), children who are born in poverty have a lower chance of succeeding in education and therefore a lower chance of breaking out of the vicious cycle of poverty. Low education is associated with low human resource quality. The low quality of human resources will lead to low productivity so that in turn the wages received are low (Rodliyah, 2023). With low wages, they often cannot fulfill the needs of their families because their purchasing power is low. So, their welfare decreases and poverty increases.

GRDP has a negative and significant effect on poverty in five regencies in Central Java. It means that when GRDP increases/decreases will make poverty decrease/increase. This is in line with research conducted by (Giovann (2018) which shows that GRDP has a significant negative effect. GRDP affects poverty because the

declining GRDP has an impact on the quality of household consumption. If income decreases, many households change consumption patterns to cheaper or more affordable goods with fewer goods (poverty increase). GRDP is an indicator of a region's economic growth. GRDP is the final net value of all goods and services produced by various economic activities in a region in a certain period. The higher the GRDP of a region, the higher the potential revenue source of the region. The success of programs in third-world countries is often assessed based on the high level of output and national income (Todaro & Smith, 2012).

Education has a significant negative effect. This is in line with research conducted by Faritz & Soejoto (2020) which found that education has a negative and significant effect. Education has a negative and significant effect because based on Human Capital theory, education plays a very important role in the quality of human resources which has an impact on community productivity. If the quality of education is good, the quality of human resources will also be better. Not only is related to the quality of resources but education is also related to labor wage segmentation. Wage segmentation occurs because higher education opens wider opportunities for obtaining work, where the higher the education, the higher of wage will be following the responsibilities and abilities.

The gender Empowerment Index has no effect on poverty in the five regencies in Central Java, meaning that an increase in the Gender Empowerment Index (GEI) has no impact on reducing poverty. This is due to the low value of GEI in the five regencies, which results in a relatively low effect on poverty because gender equality has not been achieved in Kebumen, Brebes, Pemalang, Banjarnegara, and Banyumas. This occurs because in terms of women's income contribution, women have a double burden, namely as housewives and breadwinners. So, they often experience obstacles in carrying out their socioeconomic activities. In addition, the phenomenon of the female population working as family/unpaid workers often causes no increase in income contribution despite an increase in participation. This is in line with research conducted by Fikri & Suparyati (2017) that gender has a negative and insignificant effect on poverty. This is also in line with the results of research conducted by Adnan & Amri (2021) that gender empowerment has no significant effect on poverty.

CONCLUSIONS, LIMITATIONS, AND SUGGESTIONS

Based on the empirical results, Gross Regional Domestic Product and education have a negative and significant effect on poverty in five regencies in Central Java in 2010-2021, whereas the Gender Empowerment Index (GEI) has an insignificant effect on poverty in five regencies in Central Java in 2010-2021. If the Gender Empowerment Index increases, it does not affect poverty reduction. This is because in Kebumen, Brebes, Pemalang, Banjarnegara, and Banyumas, gender inequality still occurs and the active role of women in economic and political aspects

is still low. Therefore, an increase or decrease in GEI does not affect poverty. However, the Gross Regional Domestic Product (GRDP), education, and Gender Empowerment Index (GEI) variables jointly have a significant effect on poverty in five regencies in Central Java from 2010-2021.

The implications of this research are GRDP is the value of all goods and services produced in one period in a particular region. GRDP has a significant negative effect on poverty, indicating that the increase in GRDP needs to continue to be implemented. However, the increase in GRDP also continues to pay attention to equity, namely by prioritizing quality and equitable growth. Therefore, community empowerment programs in the inclusive development process need to continue to be improved accompanied by ongoing and consistent assistance, monitoring, and evaluation. It is important to do considering that it is often found that community empowerment programs are not accompanied by consistency in mentoring, monitoring, and evaluation. So, the benefits for the community are not maximized. In addition, the local governments of Kebumen, Brebes, Pemalang, Banjarnegara, and Banyumas regencies need to continuously explore their potential resources and manage existing resources optimally. Thus, they can provide benefits/revenues to encourage economic growth in the five regencies. One of the indicators of economic growth is the increase in GRDP. Increasing GRDP can reduce the percentage of poor people in the five regencies.

Furthermore, education is important in improving the quality of human resources. Education can support the skills, knowledge, and mindset of the people. Education will give a good opportunity for people when looking for work. In addition, education is also related to the labor market, especially in terms of wages or salaries. Therefore, education must be organized in a structured manner to produce an educated generation as well. Education improvement programs should continue to be intensified through programs, such as 12-year compulsory education. Based on available data regarding the achievement of the Regional Medium-Term Development Plan targets for Central Java Province until 2018, the dropout rate at elementary school and junior high school level has still not been able to meet the set target. Education is not only a formal program but also an informal one. Therefore, it is necessary to optimize socialization about good relationships, informal shelters, and training.

The government can also conduct periodic surveys regarding scholarship programs and whether they have reached the right target students or not. Education is the responsibility of all elements of government, society, and family. Thus, the family always need instills the value of education for noble ethics which can make the character moral. With a high education and qualified skills, people can get higher wages. So, their needs can be met and poverty decreases.

Based on the research activities that have been carried out, the limitations of this study are as follows: there is location of this research only focuses on the areas experiencing extreme poverty in Central Java in 2021, while in 2022 extreme poverty

in Central Java reached 19 regencies based on the publication of the national team for the acceleration of poverty reduction. Therefore, further research is to be carried out all of the areas.

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