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The Effect of Education, Health, and Inflation to Poverty in West Java Province

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Abstract: *The United Nations focusing on Poverty as the problem that considered still difficult to solve. Through the Sustainable Development Goals (SDGs), the problem of poverty is a top priority that must be ended by 2030. West Java Province as the Heart of National Industry has many superior resources compared to other provinces. However, West Java Provinces is still the province with the second highest number of poor people nationally. The aim of this study is to measure an econometric estimation to measure the role of education, health, and inflation on poverty in West Java Province. The model used in this research is panel data from 7 districts/cities in West Java Province from 2011-2022, using multiple linear regression analysis with quantitative methods. Education has a negative influence on poverty, health has a negative influence on poverty, and inflation does not have a positive influence on poverty. This study shows that poverty in West Java Province is influenced by education and health, where if the average level of years of schooling and the health index increases, the poverty level will decrease. On the other hand, inflation has no influence on the poverty level in West Java Province.*

INTRODUCTION

Poverty is the main goal of the Sustainable Development Goals (SDG's) declared at the UN General Assembly in September 2015 which began in 2015 and will end in 2030. The goal is designed to create economic prosperity for society while maintaining environmental quality. This decision is based on the Implementation of the Third United Nations Decade for the Eredection of Poverty which stated that the United Nations (2018) made poverty as a problem that received main attention because it was considered difficult to resolve.

Poverty according to Central Agency on Statistics (BPS) (2023) is economic incapacity so that basic needs are not met as measured in terms of expenditure. Residents are categorized as poor if their monthly per capita expenditure is below the poverty line. West Java is one of the largest rice producers in Indonesia and is superior in the plantation sector (tea, sugar cane, coffee, etc.). However, the province of West Java definitely encounters the problem of poverty and many people who fall into the poor category are still found in districts/cities spread across West Java Province.

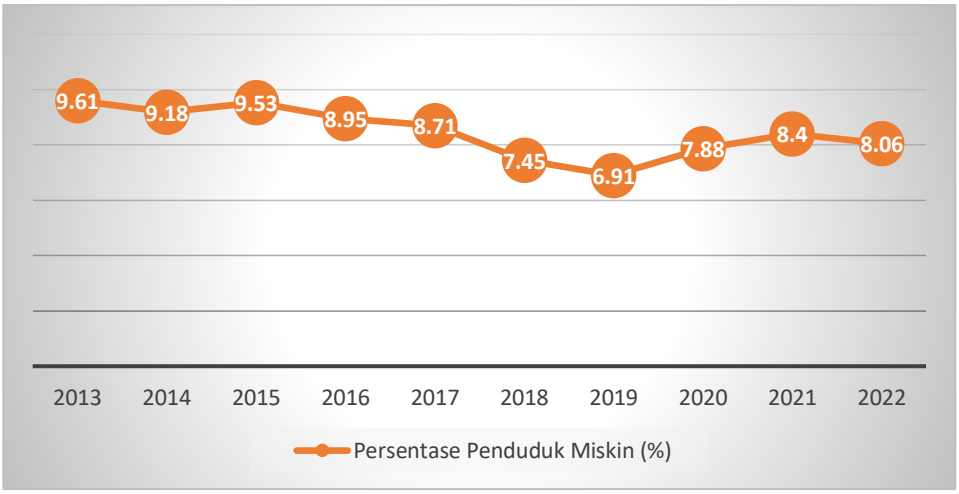

Figure 1. Percentage of Poor People

Source: West Java Central Agency on Statistics, 2023.

Based on data released by the West Java Central Agency on Statistics (BPS), it can be seen that there has been an increase in the percentage of poor people over the last 5 years. In 2019 the percentage of poor people in West Java reached 6.91% and continues to increase until in 2022 it reaches 8.06%.

The factors causing the increase in the percentage of poor people in West Java were conveyed by the Deputy Governor of West Java in the Coordination Meeting of the Poverty Reduction Coordination Team (TKPK) on Tuesday, August 24 2021, including low levels of household income, low levels of education resulting in lack of skills, and low levels of health and lack of access to health facilities. (Ika, 2021)

Researchers concluded that a high level of education and good health conditions can create community prosperity and reduce poverty rates. Country's economic conditions, such as inflation, also play a role in overcoming poverty, so that the government can improve infrastructure and improve the country's economic conditions to reduse poverty, which is the main goal of the SDGs.

LITERATURE REVIEW

Theory of Poverty

1. Neo-liberal Paradigm

This paradigm stated by Shanon, Spicker, Cheyne, O'Brien, and Belgrave. They argue that poverty is an individual problem caused by the individual's inability and choices regarding his life. According to this theory, poverty can disappear by itself if market forces are opened wide and economic growth is increased as high as possible. In this theory, the parties responsible for overcoming poverty are families, self-help groups, or religious institutions. If the group is deemed unable to overcome poverty, the state has the right to act. (Syahyuti, 2006)

However, this paradigm has weaknesses because it only views poverty in terms of people's income, and does not involve poor people as subjects in poverty problems in a region or region. This results in forms of poverty that arise in society receiving less attention, especially forms of poverty that are caused by social dimensions in society, as a result the root of the problems that cause poverty cannot be found.

2. Social Democratic Paradigm

This paradigm explains that poverty can not only be seen as an individual problem, but also as a structural problem. In Syahyuti (2006), this theory states that poverty is not an individual problem but a structural problem. Poverty can occur because of injustice and inequality in society due to limited community access to sources of capital such as education, good health and sufficient income.

However, this paradigm is very dependent on the state in forming structures and institutions to overcome poverty problems that occur in a region or region. In fact, achieving the formation of appropriate structures and institutions in dealing with poverty itself depends on the capabilities of the poor groups. The use of relative poverty in this approach also makes it more difficult to establish the standard needs required by poor groups. This is because poverty is not seen from the minimum needs that must be achieved but rather from the average ability of the population to meet their daily needs.

3. Social Functioning Paradigm

This paradigm places more emphasis on how individuals can fulfill their needs in society, where the main focus of this approach is on the capabilities of individuals, families and communities who carry out social roles in their environment. In Syahyuti (2006) this paradigm explains that social functioning is closely related to an individual's ability to fulfill basic needs within themselves and their families, as well as in making positive contributions to society. Through this paradigm, individuals are considered as subjects of all life processes and activities.

This approach views poor groups not as passive objects characterized only by the conditions and characteristics of poverty. The poor group for this approach are individuals who have a set of knowledge and skills that they often use to overcome various problems surrounding their poverty. Social functioning can describe the characteristics and dynamics of poverty in a more realistic and comprehensive way. The social capacity of poor families in this case is focused on several key indicators which include the ability of poor families to earn a living, fulfill their basic needs, manage assets, reach resources, participate in community activities and the ability to face economic shocks and pressures.

Education

Ki Hajar Dewantara in Yusuf (2018) stated that education is the right of every human being, where through education a person can develop their abilities to achieve success and happiness in their life. According to Ruff et al., (2023) Education is an activity to gain experience with the aim of increasing individual self-confidence and values as an effort to develop the ability to face various problems in everyday life.

Based on human capital theory quoted from Linggawati & Wenagama (2022), A high level of education can influence people's income levels. Education is seen as one of the aspect that can solve the problem of poverty. Because a high level of education will indicate the high quality of society so that it is able to develop skills and knowledge to achieve prosperity.

Health

Health according to *World Health Organization* (WHO) is a state of complete physical, mental, and social well-being and measured by its productivity in producing something economically and not merely the absence of disease or infirmity.

Emberson et al., (2021) stated that health can have an influence on a person's physical activity, the better the level of health, the higher the productivity so that they can carry out activities well in daily life.

According to Central Agency on Statistics (BPS) (2023) Life expectancy is used as an indicator in measuring the health of an individual in an area. Where Life Expectancy is the average estimate of the number of years a person can live during their life. Life expectancy is calculated using an indirect approach (*indirect estimation*).

Inflation

According to the Badan Pusat Statistik (2023) Inflation is a tendency to increase the prices of goods and services in general which occurs continuously. Hendayanti & Nurhidayati (2018) states that inflation is a condition where the purchasing power of money decreases, resulting in an increase in the prices of goods and services in general over a long period of time and continuously, thus creating low people's purchasing power.

Based on the inflation theory stated by Keynes in Prasetyo (2012), inflation occurs because of humans' desire to be able to fulfill their living needs beyond the limits of their capabilities. This attitude will cause a high level of demand for goods and services but the number of goods and services available on the market cannot meet people's demand. As a result, prices of goods and services will increase but people's income will not change.

METHOD

This research uses an explanatory quantitative approach which ultimately produces numerical data (numbers) which are processed using statistical methods. According to Sugiyono (2013), the quantitative approach is a method that can be said to be a method that meets scientific principles, namely objective, measurable, rational, empirical and systematic. The type of data used in this research is secondary data obtained from the Central Agency on Statistics (BPS). The secondary data used is combined panel data from time series and cross sections from 2011−2022 from 7 regencies/cities in West Java Province. Data was processed using E-views 9 software.

RESULT AND DISCUSSION

Model Test Result

Selection of Estimation Results

Chow Test

Based on the table below, it is shown that the Probability Crosssection Chi-square value is 0.0000, which is <0.05 with the decision making criteria:

H_0 : If the probability (Prob) in the Chi-square Crosssection F < 0.05 then the better model to use is the fixed effect model.

H_1 : If the probability (Prob) in the Chi-square Crosssection F ≥ 0.05 then the better model to use is the common effect model.

Tabel 1. Chow Test Result

Effects Test	Statistic	d.f.	Prob.
Cross-section F	142.079492	(6,74)	0.0000
Cross-section Chi-square	212.295222	6	0.0000

Source: Eviews 9 data processing, 2023.

So, it can be concluded that the **Fixed Effect Model** is more appropriate than the Common Effect Model.

Hausman Test

Based on the table below, it can be seen that the Cross-section random value shows a value of 0.0754, which is ≥ 0.05, with the decision making criteria:
H_0 : If the probability (Prob) in the Crosssection F < 0.05 then the better model to use is the fixed effect model.
H_1 : If the probability (Prob) in the Crosssection F ≥ 0.05 then the better model to use is the random effect model.

Tabel 2. Hausman Test Result

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	6.891225	3	0.0754

Source: Eviews 9 data processing, 2023.

So, it can be concluded that the **Random Effect Model** is more appropriate than the Fixed Effect Model.

Lagrange Multiplier Test Result

Based on the table below, it can be seen that the random Probability Chi-square Breusch-Pangan value shows a value of 0.0000, which is <0.05, with the decision making criteria:
H_0 : If the probability (Prob) in the Crosssection F < 0.05 then the better model to use is the random effect model.
H_1 : If the probability (Prob) in the Crosssection F ≥ 0.05 then the better model to use is the common effect model.

Tabel 3. Lagrange Multiplier Test Result

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	247.6672 (0.0000)	0.330741 (0.5652)	247.9979 (0.0000)

Source: Eviews 9 data processing, 2023.

So, it can be concluded that the **Random Effect Model** is more appropriate than the Common Effect Model.

Classic Assumption Test

Normality Test

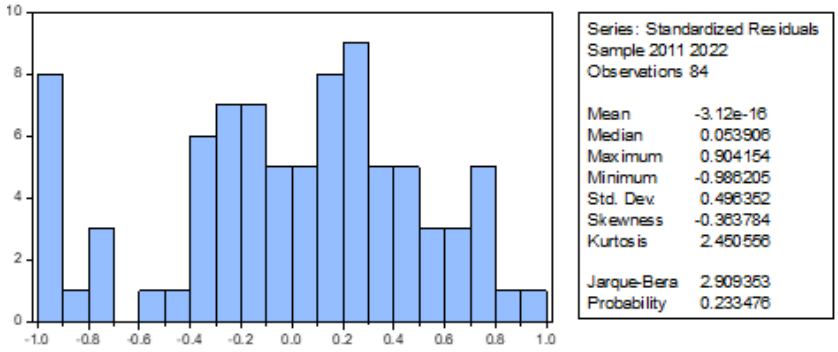

Figure 2. Normality Test Result

Source: Eviews 9 data processing, 2023.

From the test results above, it can be seen that the Jarque-Bera probability value is 0.233476, which means it has a value ≥ 0.05. So, it can be concluded that the data in this study is normally distributed. Because the test results have met the requirements, the data in this study is suitable to be continued in the next test.

Multikollinearity Test

The multicollinearity test aims to test whether in the regression model there are symptoms of multicollinearity in the independent and dependent variables. Multicollinearity is a condition where there is a perfect or near linear relationship between the independent variables in the regression model. The condition for decision making in this test is that if the Variance Inflation Factor (VIF) value is <10 then the data is declared to have no symptoms of multicollinearity.

Tabel. 5 Multikollinearity Test Result

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	7.686660	156.1347	NA
X1	0.071527	147.5067	1.011553
X2	1.460037	2.449906	1.065319
X3	0.010758	4.569020	1.071369

Source: Eviews 9 data processing, 2023.

Based on the table above, it can be seen that the Centered VIF value of the three independent variables has a value of <10, so it can be concluded that the data in this study is protected from multicollinearity.

Heterocedasticity Test

The heteroscedasticity test is used to test whether the model in the regression has unequal variances in the residuals for all observations in the regression model. The heteroscedasticity test in this study used the Glesjer Test. The test is carried out by regressing the squared residual value with its independence. The condition for decision making is if the Prob Chi-square value on Obs*R-squared is ≥ 0.05, then H0 is accepted, which means that the data in this study does not have heteroscedasticity problems.

Tabel 6. Heredokedasicity Test Result

Heteroskedasticity Test: Glejser

F-statistic	2.434987	Prob. F(3,80)	0.0708
Obs*R-squared	7.028429	Prob. Chi-Square(3)	0.0710
Scaled explained SS	6.579346	Prob. Chi-Square(3)	0.0866

Source: Eviews 9 data processing, 2023.

Based on the results of the heteroscedasticity test using the White test, it can be seen that the education, health and inflation variables do not have heteroscedasticity problems. This is proven by the Prob Chi-Square value on Obs*R-Square of 0.0710, which is ≥ 0.05, so H0 is accepted.

Panel Regression Result

Panel data analysis in this research aims to determine the influence of education, health and inflation on poverty in West Java Province for the 2011-2022 period. Based on the results panel data processing for three estimation models, namely, CEM, FEM, REM, regression analysis was carried out using the Chow test, Hausman test, and lagrange multiplier. Of the three models that have been tested, the best model to use is the Random Effect Model (FEM). The panel data regression results are as follows:

Tabel 7. REM estimation results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.791994	0.842845	5.685500	0.0000
Education	-1.293970	0.350318	-3.693705	0.0004
Health	-0.025703	0.012860	-1.998602	0.0490
Inflation	0.009293	0.021911	0.424137	0.6726

Source: Eviews 9 data processing, 2023.

$$Y_{it} = 4.791994 - 1.293970X1_{it} - 0.025703X2_{it} + 0.009293X3_{it} + e_{it}$$

T Test

In this study, a t-statistical probability of 0.05 (5%) was used. Based on the t-statistic output, it shows that education and health influence poverty with a significance level of 0.05. Meanwhile, inflation has no effect on poverty. In this research, the t_{table} value is based on the formula df(n-k-1) where n is the number of observation data used, namely 84 and k is the number of variables in the research, namely 4 variables. Then df(84-4-1) = df(79). So with a df79 value and a probability level of 0.05, the ttable value is 1.664.

1) The education variable has a $t_{statistic}$ value of -3.693705 > t_{table} 1.664 and a significance value of 0.0004 < 0.05, so it can be said that education has a significant and negaitive effect on poverty in West Java Province.
2) The health variable has a $t_{statistic}$ value of -1.998602 > t_{table} 1.664 and a significance value of 0.0490 < 0.05, so it can be said that health has a significant and negaitive effect on

poverty in West Java Province.

3) The inflation variable has a $t_{statistic}$ value of 0.424137 < t_{table} 1.664 and a significance value of 0.6726 > 0.05, so it can be said that inflation do not has a significant and positive effect on poverty in West Java Province.

Hypotesis Test

Tabel 8. Hypotesis Test

R-squared	0.363775	Mean dependent var	0.124773
Adjusted R-squared	0.339917	S.D. dependent var	0.121397
S.E. of regression	0.098629	Sum squared resid	0.778220
F-statistic	15.24722	Durbin-Watson stat	0.693110
Prob(F-statistic)	0.000000		

Source: Eviews 9 data processing, 2023.

F Test

The F test is used to determine whether the independent variables together have a significant effect on the dependent variable. To carry out this test, F-statistics and Probability F-statistics from the results of multiple linear regression are needed. The test results show that the F-statistic is 15.24722 and the probability value is 0.000000 which has a value smaller than 0.05 (5%).

According to the test results, the $F_{statistic}$ value was obtained with a value of 15.24722 and the F_{table} value used an alpha confidence level of 0.05. The F_{table} value is searched through degrees of freedom (df) 1 and 2. df 1 has the formula k-1. Where k is the number of variables. Then df 1 is obtained, namely 4-1 = 3. df 2 has the formula n-k-1. n is the number of observation samples.So the df 2, namely 84-4-1 = 79 based on the known degrees of freedom, so we get F_{table} of 2,720. So, it can be concluded that based on the F test it can be assessed that $F_{statistic} > F_{table}$ (15.24722 > 2.720) or probability < 0.05 (0.000000 < 0.05) which can be interpreted that simultaneously the three independent variables have an effect on poverty as the dependent variable.

Coefficient Determination (R^2)

The R-Squared value is 0.36377, which means that the independent variable is able to explain 36.3% of the dependent variable and the remaining 63.7% is influenced by other factors. Meanwhile, the Adjust R-Squared is 0.3319917, which means that the dependent variable (poverty) can be explained by the independent variables (education, health and inflation) amounting to 33.1% and the remaining 66.9% is influenced by other factors that can influence poverty in West Java Province.

The Effect of Education to Poverty

The education variable in this study uses is the average level of years schooling, where the test output using panel data regression shows that the average level of years schooling has a negative influence on poverty. Based on the output of the t test on this variable, $t_{statistic} > t_{table}$ (-3.693705 > 1.664) or probability value < 0.05 (0.0004 < 0.05) so that Ho is accepted. So, it can be partially concluded that education has a significant positive influence on poverty in districts/cities in West Java province.

The results of this research have the same results as research conducted by Adhitya et al., (2022) which obtained the results of education has a negative relationship and has a significant effect on poverty levels. The researcher said that the higher education levels, the greater the

prosperity and welfare of society. Apart from that, education can be an added value for a society, the higher the education, the higher the abilities and skills of that society.

The Effect of Health to Poverty

The test output using panel data regression shows that the health index has a negative influence on poverty. Based on the output of the t test on this variable $t_{statistic} > t_{table}$ (-1.998602 > 1.664) or a probability value < 0.05 (0.0490 < 0.05) so that Ho is accepted. So, it can be partially concluded that health has a significant negative influence on poverty in districts/cities in West Java province.

The results of this research have the same results as research conducted by Salsabilla Amadea & Muljaningsih Sri (2022) which obtained the results of Life Expectancy as a health index indicator has a negative relationship and has a significant effect on poverty levels. The researcher said that the higher the life expectancy of an area, the higher the level of health of that area. With a healthy population, productivity will also increase. Increasing population productivity will increase income so that welfare in the region will also increase.

The Effect of Inflation to Poverty

The test output using panel data regression shows that the inflation does not has a positive influence on poverty. Based on the output of the t test on this variable, $t_{statistic} < t_{table}$ (0.424137 < 1.664) or probability value > 0.05 (0.6726 > 0.05) so that Ho is rejected. So, it can be partially concluded that inflation does not have a significant positive influence on poverty, so that an increase or decrease in inflation will not have an effect on poverty in 7 regencies/cities in West Java Province.

The result of this research have the same results as research conducted by which obtained the results of inflation has no significant effect on poverty levels. The researcher said that the increase in the level of inflation that has occurred has not been able to affect poverty because the inflation that is occurring still considered as mild inflation.

CONCLUSION

In the study results obtained were concluded as follows:

1. The results showed simultaneously that the variable poverty can be explained by independent variables consisting of education, health, and inflation of. Partially, education and health has a significant effect on poverty. Meanwhile, inflation do not has a significant effect on poverty.
2. Education has a negative and significant effect on poverty levels in districts/cities in West Java Province during 2011−2022, which means that an increase in the average level of years schooling by 1 (unit) will decrease poverty in districts/cities in West Java Province.
3. Health has a negative and significant effect on the poverty level in districts/cities in West Java Province during 2011−2022, which means that an increase in the health index by 1 (unit) will reduce the poverty level in districts/cities in West Java Province.
4. Inflation has a positive and insignificant influence on poverty levels in districts/cities in West Java Province 2011−2022, which means that an increase of 1 (unit) has no effect on increasing poverty levels in districts/cities in West Java Province.

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Editor In Chief Jurnal EKOMA : Jurnal Ekonomi, Manajemen, Akuntansi menyatakan dengan sebenarnya bahwa :

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Memang benar yang bersangkutan telah mengirimkan artikel yang berjudul "**The Effect of Education, Health and Inflation to Poverty in West Java Province**" pada Jurnal EKOMA : Jurnal Ekonomi, Manajemen, Akuntansi dan dapat kami **TERIMA** untuk diterbitkan pada Vol.3 No.2 Edisi Januari 2024.

Demikian surat keterangan ini dibuat untuk dapat dipergunakan sebagaimana mestinya.

Sragen, 15 Januari 2024
Hormat Kami,
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