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The Effect of Human Development Index (HDI) on Poverty and Crime in West Kalimantan, Indonesia

Jamaliah[1*], Elyta[2]
[1-2]Universitas Tanjungpura Indonesia
*Corresponding Author E-mail: elyta@fisip.untan.ac.id

Abstract

The strategic problem faced by West Kalimantan Province is the problem of the high poverty rate. Compared to other provinces in Indonesia, the poverty rate in West Kalimantan is still relatively high. The human development index (HDI) in West Kalimantan has indeed increased yearly, but this increase is followed by relatively high poverty and crime. Based on the background described, the main problem in this study is the influence of HDI on poverty and crime in West Kalimantan. This study uses quantitative and descriptive approach as the method with multiple linear and panel data regression analyses. The results of this study are poverty with HDI has a negative relationship. Weather crime shows a positive relationship with HDI. In other word, HDI has an acceptable influence on crime. Moreover, poverty has a negative relationship to crime, meaning that if poverty increases by 1 percent, crime will decrease. The result of this research can be a basis for general considerations in dealing with poverty and reducing the number of crimes by improving the population's quality as indicated by the HDI. All stakeholders' effort needed to strengthen human quality by implementing programs in tackling poverty. For further research, this study suggests using an approach to the real conditions of poverty.

Keywords: Criminal; HDI; Poverty.

Abstrak

Permasalahan strategis yang dihadapi wilayah Provinsi Kalimantan Barat adalah masalah masih tingginya angka kemiskinan. Angka kemiskinan di Kalimantan Barat bila dibandingkan dengan provinsi lain di Indonesia masih tergolong cukup tinggi. Indeks Pembangunan Manusia (IPM) di Kalimantan Barat dari tahun ke tahun memang meningkat, namun peningkatan tersebut diikuti dengan kemiskinan dan kriminalitas yang relatif masih tinggi. Oleh sebab itu, identifikasi masalah utama dalam penelitian ini adalah pengaruh IPM terhadap kemiskinan dan kriminalitas di Kalimantan Barat. Penelitian ini menggunakan pendekatan kuantitatif deskriptif sebagai metodenya. Analisis dilakukan melalui regresi linier berganda dan data panel. Hasil dari penelitian ini adalah kemiskinan dengan IPM memiliki hubungan yang negatif. Kriminalitas menunjukkan hubungan yang positif dengan IPM yang menyatakan bahwa IPM memiliki pengaruh terhadap kriminalitas dan dapat diterima. Sedangkan, kemiskinan memiliki hubungan yang negative terhadap kriminalitas, artinya jika kemiskinan naik 1 persen akan mengakibatkan kriminalitas turun. Hasil penelitian ini dapat menjadi dasar pertimbangan umum dalam menangani kemiskinan dan mengurangi jumlah kejahatan dengan meningkatkan kualitas penduduk seperti yang diindikatorkan dari IPM. Seluruh upaya pemangku kepentingan diperlukan untuk memperkuat kualitas manusia dengan melaksanakan program-program dalam menanggulangi kemiskinan. Untuk penelitian lebih lanjut, penelitian ini menunjukkan menggunakan pendekatan terhadap kondisi kemiskinan yang sebenarnya.

Kata kunci: IPM; kemiskinan; criminal.

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INTRODUCTION

High economic development can improve human welfare (Elyta et al., 2021; Etim et al., 2018). Although the government has launched many programs by improving all the infrastructure needed, the community or humans also have a significant role to realize it. It is also necessary to strengthen the character of the community in innovating to be successful in building a quality of life and sound economic development and progress because the community is the principal capital in this case (Muhamad et al., 2018)

Thus, one of the efforts to improve economic performance is to carry out national economic development to create jobs and provide a decent life to realize the welfare of the Indonesian population. Various development programs and activities have been directed primarily at regional development, particularly areas with a relatively high poverty level. Regional development must, of course, be carried out in an integrated and sustainable manner based on the priority needs of each region. National development targets have been set through long-term and short-term development. One of the leading indicators in the success of national development is the rate of decline in the number of poor people.

Poverty is a multidimensional problem that affects and impacts various ways (Tubaka, 2019; Mankiw, 2019). Poverty is one of the normalization of component indicators (Kovacevic, 2011), thus it is the biggest problem facing all developing countries. Still, some developing countries have succeeded in carrying out economic development in production and national income. The condition of poverty in a country or region also reflects the level of welfare of the population living in that country or region. Indonesia is still a developing country, and poverty is a significant concern.

Indonesia consists of many islands and provinces, one of which is West Kalimantan Province. This province has a high potential for Natural Resources and Human Resources. It is divided into 14 districts/cities with various characteristic ethnicities and cultures (Elyta & Rahman, 2019). West Kalimantan also has problems like those faced by other provinces in Indonesia that is a high poverty rate.

The identification of these problems in depth can be seen from the relatively high poverty rate of West Kalimantan compared to other provinces in Indonesia. Poverty is still considered a serious problem. It is indicated by the number of people who lack food. It is challenging to meet the basic needs of life, the low level of public education, and the high level of crime cases. This fact indicates that poverty in West Kalimantan still requires serious attention from the government because it is a measure of community welfare. The percentage of poor people in each district and city in West Kalimantan Province can be seen in the following table 1.

The table 1 shows the percentage of poverty of districts or cities in West Kalimantan. Among all districts or cities, the percentage of poverty of four districts increase in 2018 (Sanggau, Sintang, Melwai, and Kayong Utara), it decreases in the next year, in 2019. There is only one district that shows its increasing from 2017-2019, Kapuas Hulu. From 2017 to 2019, Melawi District had the most prominent poor people and Sanggau District had the lowest prominent poor people among all districts/cities in West Kalimantan. In 2017, the highest poor population was in Melawi District which is 12.54%, and the lowest one is Sanggau District which is 4.52%. In 2018, the highest poor population was in Melawi District which is 12.83%, and the lowest one is Sanggau District which is 4.67%. In 2019, the highest poor population was in Melawi District which is 12.38%, and the lowest one is Sanggau District which is 4.57%.

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Table 1 Percentage of Poor People in West Kalimantan by District /City (%) 2017 - 2019

No	District/City	2017	2018	2019
1	Sambas	8.59	8.55	8.19
2	Bengkayang	7.51	7.17	6.96
3	Landak	12.23	11.77	11.47
4	Mempawah	5.94	5.61	5.32
5	Sanggau	4.52	4.67	4.57
6	Ketapang	11.02	10.93	10.54
7	Sintang	10,20	10.35	9.65
8	Kapuas Hulu	9.45	9.60	9.62
9	Sekadau	6.46	6.17	6.11
10	Melawi	12.54	12.83	12.38
11	Kayong Utara	9.89	10.08	9.98
12	Kubu Raya	5.26	5.07	4.74
13	Pontianak City	5.31	5.00	4.88
14	Singkawang City	5.42	5,12	4.91
	Average	8.01	8.29	7.81

Source: Badan Pusat Statistik Kalimantan Barat, 2019

However, based on its rate, the efforts made by the provincial government of West Kalimantan in the context of reducing poverty have shown promising results. In 2017, the poverty rate in West Kalimantan was 8.01%, it was 8.29% in 2018, and in 2019, it was 7.81%. In general, the percentage of poverty in West Kalimantan in the last five years has decreased. The poverty problem is allegedly influenced by several factors, including the increasing number of criminal cases and the quality of the population which can be seen from the High Development Index (HDI).

Table 2 HDI of West Kalimantan by District/City (Percent) 2015 - 2019

No	**District/City**	**2015**	**2016**	**2017**	**2018**	**2019**
1	West Kalimantan	65.59	65,88	66.26	66.98	67.65
2	Sambas	64.14	64.94	65.92	66.61	67.02
3	Bengkayang	64.65	65.45	65.99	66.85	67.57
4	Landak	64.12	64.58	64.93	65.45	65.96
5	Mempawah	63.37	63.84	64.00	64.90	65,50
6	Sanggau	63.05	63.90	64.61	65.15	65.67
7	Ketapang	64.03	64.74	65.71	66.41	67.16
8	Sintang	64.18	64.78	65,16	66.07	66,70
9	Kapuas Hulu	63.73	63.83	64.18	65.03	65.65
10	Sekadau	62.34	62.52	63.04	63.69	64.34
11	Melawi	63.78	64.25	64.43	65.05	65.54
12	Kayong Utara	60.09	60.87	61.52	61.82	62.66

13	Kubu Raya	65.02	65.54	66.31	67.23	67.76
14	Pontianak City	77.52	77.63	77.93	78.56	79.35
15	Singkawang City	70.03	70,10	70.25	71.08	71.72

Source: Badan Pusat Statistik Kalimantan Barat, 2019b

Based on the table 2, the human development index of West Kalimantan from 2015 to 2016 increased by 0.29%. The following year, it grew until 2019 by 0.67%. Among all districts/cities in West Kalimantan, from 2015 to 2019, the highest human development index was Pontianak City and followed by Singkawang City.

Table 3 Crime rate/Criminal Acts based on Resort Police in West Kalimantan Province 2015-2019 (Case)

No	District /City	2015	2016	2017	2018	2019
1	Sambas	293	363	342	350	347
2	Bengkayang	251	210	231	289	235
3	Landak	204	211	181	194	142
4	Mempawah	278	309	314	268	277
5	Sanggau	485	423	325	350	333
6	Ketapang	574	470	509	627	507
7	Sintang	232	185	218	232	218
8	Kapuas Hulu	158	221	167	148	108
9	Sekadau	106	117	105	90	64
10	Melawi	156	176	156	139	95
11	Kayong Utara	-	-	50	62	73
12	Kubu Raya	-	-	-	-	-
13	Pontianak City	3302	3741	2701	2476	2303
14	Singkawang City	481	370	346	350	239
	Total	6520	6796	5645	5575	4941

Source: Kepolisian Daerah Kalimantan Barat, 2019

In table 3, from 2015-2019, among all districts/cities in West Kalimantan Province. the highest number of crimes is Pontianak City. In 2015, the lowest number of crimes is Sekadau by 106 cases and the highest number of crimes is Pontianak City by 3302 cases. It shows the same result in the next year, the lowest one is Sekadau by 117 cases and the highest one is Pontianak City by 3741 cases. The next three years, 2017-2019, Kayong Utara appears as the lowest number of crimes, and still, the highest number of crimes is Pontianak City. The pattern of development of total crime of four districts/cities namely Kapuas Hulu, Sekadau, Melawi, and Pontianak City, after increased in 2016, those decreased from 2016 to 2019. After its data appeared in 2017, the number of crimes of Kayong Utara District increases every year until 2019. The rest areas tend to fluctuate.

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In terms of the number of crimes, during 2019, the Pontianak City Police recorded the highest number of crimes (2,303 cases), followed by the Ketapang Police (507 cases) and the Sambas, Sanggau City and Singkawang Police with 347 cases, 333 cases and 239 cases respectively. Meanwhile, the Melawai, Kayong Utara, and Sekadau Police, with the number of crimes respectively, 64, 73, and 95, are the three resort police with the least number of crimes.

As explained before, the HDI in West Kalimantan has increased from year to year, but this increase is followed by relatively high poverty and crime. Thus, the identification of the main problem in this research is the influence of HDI on poverty and crime in West Kalimantan.

Several studies have been conducted in various countries regarding HDI, poverty, and crime (Kovacevic, 2014; McGillivray, 2005; McGillivray & White, 1993; Lai, 2003; Ogwang & Abdou, 2003). Furthermore, several studies have been conducted previously about the effect of economic growth, education, and unemployment on poverty in various province in Indonesia. The first is the research of Priatna (2015) entitled "Analysis of the Socio-Economic Effect on the Crime Rate of Theft in the Special Region of Yogyakarta in 2010-2015". The purpose of this study was to analyze the socio-economic influence, namely education level, unemployment rate, and Gini ratio. The three are independent variables and the dependent one is the theft crime rate.

Another research conducted by Astuti (2014) entitled "Analysis of Crime Levels in Semarang City with an Economic Approach in 2010-2012". This research tries to analyze the determinants of crime. Specifically, it discusses how economic, prevention, and demographic variables can affect crime. The used data is panel data from 14 sub-districts in Semarang during the 2010-2012 period. The results show that this research model is relatively weak in explaining the crime rate in Semarang and only shows a significant loss of prevention variables.

Based on the description above, the author tries to analyze the influence of the human development index (HDI) on poverty in districts/cities in West Kalimantan, how the human development index (HDI) affects district/city crime in West Kalimantan and how poverty affects district/city crime in West Kalimantan.

The formulation of the problem in this study is based on theories the previous research. To achieve the research objectives, the estimation results from the research model were statistically tested, discussed, and analyzed. The relationship between one concept to another concept of the problem is to be studied. This study uses conceptual framework to connect or explain the topics.

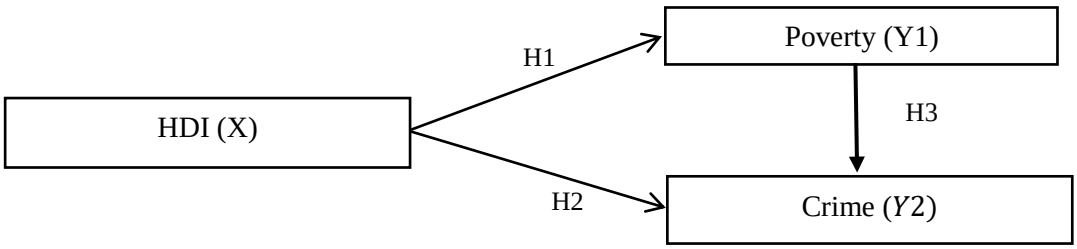

Figure 1 Research Conceptual Framework

Based on the arguments above, the hypotheses in this study are:

H1 : The Human Development Index has a significant effect on poverty in West Kalimantan Province
H2 : The Human Development Index has a substantial impact on crime in West Kalimantan Province
H3 : Poverty has a significant effect on crime in West Kalimantan Province

RESEARCH METHOD

This research uses a sample area of regencies/cities in West Kalimantan from 2015 to 2019. This study uses quantitative descriptive method. Furthermore, the researchers analyzed the obtained data by using multiple linear regression analysis and panel data regression methods (pooled data). Meanwhile, this study determines how much influence the independent variable, namely the Human Development Index, has on the dependent variable, namely Poverty and Crime. The form of estimation is as follows:

$$\mathbf{KM_{it} = + 1 + \ldots\ldots\ldots\ldots\ldots\ (1)\alpha(IPM)_{it}\varepsilon_{it}}$$

Description:

KM_{it}	: Regional poverty i in year t
α	: Constant
i, 2	: Regression coefficient
IPM_{it}	: Human Development Index for area i in year t
ε	: error term
i	: area of 14 regencies/cities in West Kalimantan which will be observed
t	: observation period (t = 2015 – 2019)

$$\mathbf{K_{it} = + 1 + \ldots\ldots\ldots\ldots\ldots\ (2)\alpha(IPM)_{it}\varepsilon_{it}}$$

Description:

K_{it}	: Crime area i in year t
α	: Constant
1,	: Regression coefficient
KM_{it}	: Poverty of area i in year t
ε	: error term
i	: area of 14 regencies/cities in West Kalimantan which will be observed
t	: observation period (t = 2015 – 2019)

In addition, this research also tries to analyze how much influence the dependent variable, namely poverty, has on the dependent variable, namely crime. The form of estimation is as follows:

$$\mathbf{K_{it} = + 1\ ) + \ldots\ldots\ldots\ (3)\alpha(KM_{it}\varepsilon_{it}}$$

Description:

K_{it}	: Poverty of area i in year t
α	: Constant
I, 2, 3	: Regression coefficient
PE_{it}	: Regional economic growth i in year t
PDK_{it}	: Education area I in year t
K_{it}	: Crime area i in year t
ε	: error term
i	: area of 14 regencies/cities in West Kalimantan which will be observed

RESULTS AND DISCUSSION

Poverty is a condition where people have limited income to meet their needs, so they can carry out illegal activities to get the desired income. The higher the poverty rate in an area, the lower the level of community welfare. In the case of poverty, the increasing inequality can cause crime rates to increase. It

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implies a more significant gap between the wages of the poor and the rich, thus reflecting a more considerable disparity between income from crime and legal work (Fajnzylber et al., 2000).

In addition, according to Kuncoro (2004), growth in the service sector in rural areas reduced poverty in all sectors and locations. However, the development of services in urban areas provides a high elasticity of poverty for all industries except urban agriculture. In addition, agricultural growth in rural areas has a significant impact on reducing poverty in the rural farming sector, in which the largest contributor to poverty in Indonesia.

So, it is necessary to improve the quality of the human index in various aspects such as education and health to encourage the community itself to become a prosperous society and ultimately the minimum level of crime that occurs. However, the community quality index must be the real one to realize correct information so that policymakers can also run correctly. There are many stages of this study. The first stage is to test the classical assumptions before processing regression and hypothesis testing.

Classic assumption test

The classical assumption test provides certainty that the obtained regression equation is correct, unbiased, and consistent. The assumption test used is the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test.

Normality test

The normality test used was the Kolmogorov-Smirnov test to improve the results of the data normality test. If the Kolmogorov-Smirnov results show a significance level greater than 0.05, then the data is usually distributed and vice versa.

Table 4 Normality Test Results

		Unstandardized Residual
N		69
Normal Parameters,[a,b]	Mean	-1547.8986813
	Std. Deviation	1556.08744605
Most Extreme Differences	Absolute	,106
	Positive	,106
	Negative	-,049
Test Statistics		,106
asymp. Sig. (2-tailed)		,200c,d

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

Source: processed data, 2021

Heteroscedasticity

In this study, the Scatter Plot test is used to determine whether there is a heteroscedasticity problem or not.

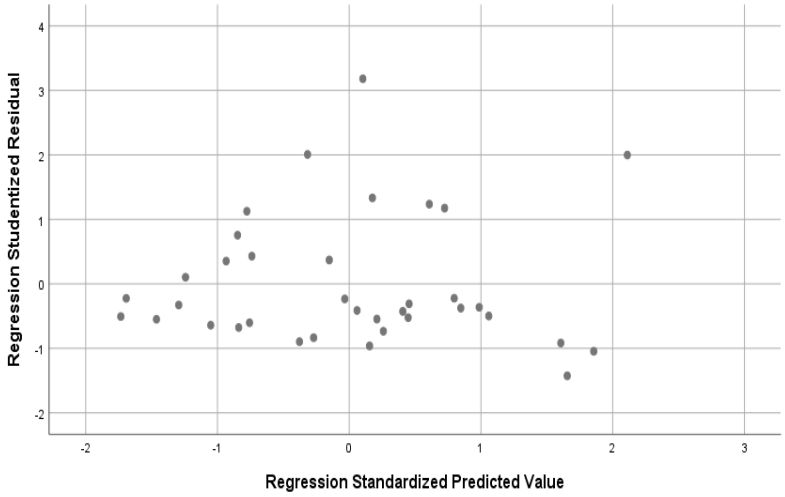

Figure 2 Scatter Plot Test Results

Source: Processed data, 2021

The results of the Scatter Plot test in Figure 2 produce output points that do not have a specific pattern and are random, so it can be concluded that there is no heteroscedasticity.

Autocorrelation

To perform the autocorrelation test, the researcher used the Run Test. Decision-making in the run test is based on whether the data is random or not. If the probability value = 0.05, then the observation occurs randomly, and it can be concluded that the information is not affected by autocorrelation.

In table 5, the test using the Run Test shows that the significance value is 0.063. It means that the research data is free from autocorrelation because it is more than 0.05 (> 0.05).

Table 5 Run Test Results

	Unstandardized Residual
Test Value	-1876,74356
Cases < Test Value	18
Cases >= Test Value	18
Total Cases	36
Number of Runs	13
Z	-1,860
asymp. Sig. (2-tailed)	,063

a. median

Source: Processed data, 2021

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Regression Analysis

After testing the classical assumption, the next step is to perform multiple linear regression analysis top test the relationship between the independent variable (X) and the dependent variable (Y) positively or negatively related. The regression analysis is carried out in two stages to see the relationship between the dependent variable and the independent without and with the moderating variable. The dependent variables in this study are poverty (Y1) and crime (Y2). At the same time, the independent variable is the Human Development Index (X).

The following are the results of data processing that show the regression results; besides that, there is information on the coefficient of determination and the results of the ANOVA test, which can be an indicator of the Hypothesis Testing test in this study.

Table 6 Regression Results

Description	constant	coefficient	R Square	Value Significance	Hypothesis
HDI => Poverty	23.82	-0.24	0.123	0.003	Received
HDI => Crime	-0.88	0.051	0.147	0.001	Received
Poverty => Crime	3,371	-0.106	0.293	0.000	Received

Source: Processed Data, 2021

Table 6 shows that the three regression equations formed from the research variables are as follows:

Poverty = 23.82 - 0.24 HDI + e …….(1)
Crime = -0.88 + 0.051 HDI + e ……..(2)
Crime = 3.371 – 0.106 Poverty …….(3)

The equation above and Table 6 show that in the districts/cities of West Kalimantan Province for the period 2015 – 2019:

- Poverty with HDI has a negative relationship. If the HDI increases by 1 unit, the percentage of poverty will decrease by 0.24 percent, with an R2 value of 0.123 or 12.3%, the relationship is fragile. The significance value of 0.003 indicates that the first hypothesis, which states that HDI influences poverty is acceptable.
- Crime shows a positive relationship with HDI, meaning that if the HDI decreases by 1 unit, then corruption will increase. However, because the constant is harmful, many crimes will still fall. The relationship is fragile, with an R2 value of 0.147 or 14.7%. A significance value of 0.001 indicates that the second hypothesis, which states that HDI influences crime, is acceptable.
- Poverty has a negative relationship to crime, meaning that if poverty increases by 1 percent, it will result in a decrease in crime. The connection is still weak, with an R2 value of 0.293 or 29.3%. The significance value of 0.000 indicates that the third hypothesis, which states that poverty influences crime, is acceptable.

Poverty is a significant economic determinant in this country, and crime as well (Yasir et al., 2009). As stated before, poverty can be a trigger for the poor to be involved in crime. In addition, social inequality

can cause crime rates to increase. A significant gap between the poor and the rich income reflect a more substantial disparity between income from crime and legal work (Fajnzylber et al., 2002).

This study is in line with the opinion expressed by Fajnzylber (2002) that HDI will affect poverty and crime and poverty influences criminality. The low HDI cause the high poverty in an area because it is unable to create community welfare and it can trigger criminal acts. It is necessary to improve the quality of the human index in various aspects such as education and health so that it can encourage the community to become a prosperous society and ultimately the minimum level of crime. However, the community quality index must be accurate to realize correct information so that policymakers can also run correctly based on the need of the community.

Low HDI is one of the determinants of poverty (Ross, 2019). The low human development index is a problem that must be solved (Lamba et al., 2020). The first principal component is usually thought to symbolize the overall index (Vyas & Kumaranayake, 2006; Lindman & Sellin, 2011). In the context of economic development in a region, the HDI is determined as one of the primary measures included in the basic pattern of regional development. It indicates that HDI is an essential position in regional development management. The HDI function and other human development indicators had the key to implementing targeted planning and development. In line with the previous research conducted by Krishnan, 2010; Antony & Rao, 2007; and Ariawan, 2006, the HDI, which is a benchmark for developing a region, should have a positive correlation with poverty conditions.

CONCLUSION

The conclusion of this research is poverty with HDI has a negative relationship. If the HDI increases by 1 unit, the percentage of poverty will decrease by 0.24 percent, with an R2 value of 0.123 or 12.3%, the relationship is fragile. The significance value of 0.003 indicates that the first hypothesis, which states that HDI influences poverty, is acceptable. Furthermore, crime shows a positive relationship with HDI, meaning that if the HDI decreases by 1 unit, then criminality will increase. However, the association is fragile because the constant is negative, the number of crimes will still fall, with an R2 value of 0.147 or 14.7%. A significance value of 0.001 indicates that the second hypothesis, which states that HDI influences crime, is acceptable. Furthermore, poverty has a negative relationship to crime, meaning that if poverty increases by 1 percent, it will result in a decrease in crime. The connection is weak, with an R2 value of 0.293 or 29.3%. The significance value of 0.000 indicates that the third hypothesis, which states that poverty influences crime, is acceptable.

The theoretical impact of this research suggests that the government should seriously seek to reduce poverty and crime by improving human quality and increasing poverty alleviation programs because the accumulation will have an impact on the whole Indonesian economy. In addition, the recommendation for further research is to use data that is close to natural conditions such as the actual GRDP variable that is synergized with poverty. Because the real GDP data can show the low purchasing power of the poor, not using economic growth which shows the level of purchasing power of the whole community.

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