
THE RELATIONSHIP BETWEEN COMMUNITY WELFARE AND CRIME IN EAST JAVA 2019-2022



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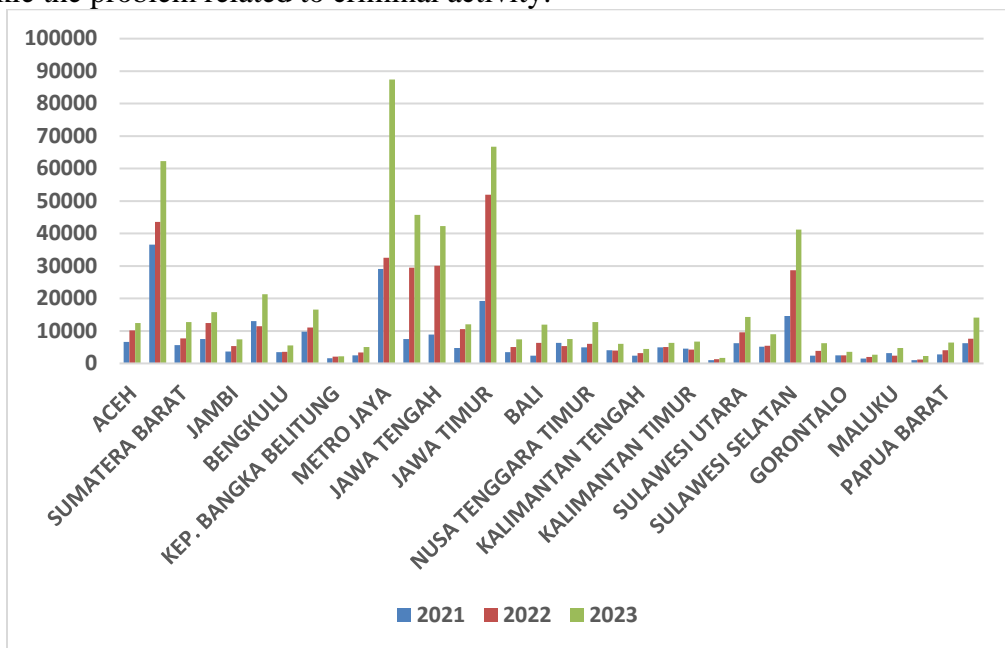
Abstract

This study investigates the impact of community welfare on criminality in East Java Province. The dimensions of welfare used in this study are education, unemployment, poverty, and health. The study uses panel data collected from the Central Statistics Agency (BPS) and applies panel data regression analysis to measure the real effect of each of these socioeconomic variables on criminality. The results suggest the presence of a positive and significant impact of education on crime and of poverty, with a negative and significant effect. Employment and health indicators, on the other hand, do not show a statistically significant effect on crime. These results suggest that improving education without enough job opportunities may increase the chances of criminal behavior. At the same time, poverty continues to drive crime due to ongoing economic pressures. Overall, the study points out the need to improve the quality of education and its connection to the job market while also focusing on strategies to reduce poverty. Community-based economic empowerment is crucial in efforts to lower crime in East Java.

Keywords: Crime, Education, Unemployment, Poverty, Health, East Java

INTRODUCTION

Crime remains a problem to date among various nations globally, including Indonesia. Though the crime rate in Indonesia is somewhat lower compared to South America, Iraq, and Colombia, crime still constitutes a pivotal problem that deserves to be taken very seriously (Rahmalia et al., 2019). According to (Pratita & Woyanti, 2024), crime behavior lies in the breach of legal laws, social behavior, and religious belief, and in many instances, it results in both psychological as well as financial loss to the individual. Given the direct negative influence of criminal behavior on the life of the people, it indeed requires top priority to tackle the problem related to criminal activity.



Source: (BPS, 2023)

Figure 1. Number of Crimes in Indonesia according to Regional Police from 2021 to 2023

Figure 1 shows that East Java Province has been consistently ranked the third highest nationally regarding the crime rate from the year 2021 to 2023, at the same time registering the highest number of overall criminal cases in Java Island. Although the level of criminal cases in this province is somewhat high, the conditions of factors that contribute to such cases are not solely caused by one factor but by various interconnected factors. According to Hardianto (2009) based on the study "Analysis of Factors Affecting Crime Rate In Indonesia From an Economic Approach," the level of education, unemployment ratio, as well as poverty, are important factors that play a significant role in influencing the crime rates within Indonesia. These determinants require continued study at the regional level with special focus on East Java Province. Aside from the variables used in most studies on the matter, the health factor plays a part as the auxiliary variable that can potentially affect the rates of crimes. The health factor is found important, given the negative impacts of poor health on individual productivity, leading to a diminished flow of employment opportunities and further exacerbated social and economic pressures, thereby increasing the potential for those individuals to commit criminal acts. Each of these

factors is, thus, systematically analyzed in this research for determining its individual impact on crime rate in East Java Province.

In contrast, Yanti et al. (2023) the fact that the average length of schooling in East Java Province is relatively long does not mean that crime rates are lower. According to Rahmalia et al. (2019), a lack of access to education can hamper employment prospects, causing people with lower levels of education to be at a disadvantaged position in being able to secure a decent standard of living. However, when the needs for a decent standard living cannot be met properly because of a lack of income, economic pressure becomes a grave consideration. Moreover, under such circumstances, a person can find themselves forced into looking for alternative solutions for securing his or her needs, such as committing crimes.

Kasim and Hendra (2023) conclude that criminality has a negative relation with unemployment, though it is not significant statistically. However, the inability to secure jobs for the breadwinners in the family can cause certain types of psychological pressure and social unrest. In the context of Indonesia, the unemployment rate has witnessed certain fluctuations. In 2019, the open unemployment rate dropped to 3.82%, but this increased dramatically to 5.84% in 2020. However, there has been certain improvement in this regard, with the unemployment rate decreasing to 5.74% in 2021 and further to 5.49% in 2022. Rahmalia et al. (2019) highlight the negative impact of unemployment on income levels. If such conditions continue further, they can eventually cause an increase in poverty. In this context, it can be interpreted that poverty indicates the inability to sustain basic living needs, which can cause people to become involved in criminal activities in certain conditions. In support of this assumption, Hulu (2024) states there exists a type of positivity between poverty and criminal. In other words, the higher the poverty level, the higher the criminal level.

Health is an integral part of sustainable human development (Herdaetha, 2015). In developing countries such as Indonesian and India, the public health conditions are largely affected by a number of societal factors, such as education level, economical status, environmental conditions, and healthcare services (Rajan, 2013). Apart from its relation to the welfare of an individual, another key area related to health concerns its linkage with the larger social sphere, such as criminal activity. According to Silver et al. (2008), mental health problems can raise an individual vulnerability to commit deviant or criminal actions (Indrasto et al., 2025). Hence, it is an inevitable requirement to understand the linkage between health, especially mental health, and criminal activity in formulating health policies with preventive strategies beyond the conventional cure-oriented strategy, with an objective for an improved, healthier, safer, and equitable society for all (Groning, 2024). In this study, analysis centers on the top ten highest ranked crime rates for the districts and cities within East Java Province from 2019 to 2022. Additionally, this study examines the impact of education levels, unemployment rate, poverty, and health on crime rates using secondary sources such as the Central Statistical Agency (BPS) and the regional police.

LITERATURE REVIEW

Human Capital Theory (Becker, 1968) implies that there will be a negative relationship between educational attainments and rates of crime because, in general, persons with more human capital tend to have access to better and law abiding job opportunities. This scenario is also associated with the improved opportunity cost associated with involvement

in criminal activities, leading to a reduction in criminal activities. In contrast, evidence presented in studies on the nexus between educational attainments and rates of criminality sometimes does not align with the implications of Human Capital Theory. However, evidence presented in studies undertaken by Hachica & Triani (2022) and Lochner & Moretti (2004), supports the assertion that there is a negative relationship between educational attainments and rates of criminal activity, since improved skills and job opportunities can lead to a reduction in the rate at which persons indulge in criminal activities. Conversely, alternative research, such as that by Yanti et al. (2023) and Pratita & Woyanti (2024), tends to illustrate that there is a positive relationship between educational attainments and rates of criminal activity, which is especially experienced in a situation whereby an improvement in the number of years spent in educational institutions is not accompanied by job creation and skill absorption, translating to economic pressures experienced by persons with advanced educational attainments.

The disparity emerging from theoretical premises versus empirical observations exposes a new research gap, which is that education does not play a significant deterrent role against criminal acts. Conversely, the role of education seems highly contingent upon the labor market situation as well as the geographic pattern of economic opportunities available in a specific region. Empirical observations supporting this aspect reveal the positive role of education in controlling crime rates in East Java Province. Though a considerable number of studies have covered the topic of criminality, a surprisingly small number of research studies have used health variables while examining crimes, especially in the context of East Java.

Criminal Theory

Crime has become a prominent social issue with the potential to interfere with the unity and integrity of society as a whole, as offenders negate the fundamental principles of governance like the rule of law and social welfare (Zahra & Usman, 2023). The Dictionary of Indonesian Language (KBBI) defines crime as an activity contrary to the provisions of the criminal code. According to the Opportunity Theory, the commission of a crime takes place when a perpetrator faces an opportunity to commit a wrongful act and stated that when a perpetrator faces opportune environments like lack of supervision and vulnerable targets, the likelihood of a wrongful act occurring will be significantly impacted. In addition, several socio-economic variables, such as income disparity, poverty, low educational attainment, as well as joblessness, also serve to further heighten the propensity for crime to occur. In this manner, such conditions have probably created situations in which people view or see crime as an alternative means to earn income. The inability to satisfy the primary needs in life via legitimate means, as well as the lack of suitable educational and job opportunities, contribute to increased socioeconomic pressure, which can serve to push people toward making high risk choices regarding crime. In this respect, Opportunity Theory emphasizes the need to be able to lessen crime by improving socioeconomic conditions (Soraya et al., 2024).

Criminal behavior may emerge as a result of a deliberate choice, where people systematically evaluate the potential costs and benefits of participating in criminal behavior. If they find the potential benefits superior to the potential cost or penalty, then the likelihood of committing a crime will be higher. The best approach in a strategy designed to lower levels of criminality would thus be to promote awareness among would-be offenders. Once persons

become aware of the fact that criminal behavior did not result in a significant benefit, as well as substantial cost, they may choose not participate (Riyardi & Guritno, 2022).

The Relationship Between Education Level and Crime

The Human Capital theory, as proposed by Gary Becker in his book "Human Capital," assumes that the quality of human resources is a crucial factor in the determination of economic development (S. Backer, 2009). In economic theory, investment in education is viewed as the investment in human capital to build the skills and knowledge of an individual (Pristiwanti et al., 2023).

As posited by Todaro (2011), stresses that investment in human capital encompasses different aspects of education. Thus, for countries that wish to enhance the quality of human resources, investment in human capital development has to be a priority. Offering free education can serve as one mechanism of enhancing education awareness among the majority of citizens and thus can influence more people to take part in the process of education.

The relationship between an individual level of education and their likelihood of engaging in criminal activity is widely recognized. Individuals with lower educational attainment tend to encounter limited employment opportunities and often have a weaker understanding of the legal consequences of their actions (Saputra, 2023). Research conducted by Hachica and Triani (2022) shows that education has a negative effect on crime rates, suggesting that greater public awareness of importance of education is associated with a decline in criminal activity.

The Relationship between Unemployment and Crime

Unemployment occurs within the context of the economic system, with high levels of unemployment often indicating the existence of overall conditions of poverty. Unemployment can be explained as the state where persons are not working even when they actively seek to engage in the labor force (Permata & Hutapia, 2025). In most cases, unemployment can result from the existence of disequilibrium within the labor force and the number of available job opportunities. On the other hand, there can occur various types of unemployment when persons choose to avoid contributing to the labor force, most particularly when the labor force is in equilibrium or in the case that there are not significant restrictions within the process involving entry into or exit from the labor force (Mufida & Nasir, 2023).

Unemployment is caused by the gap between the availability of job vacancies and the size of the workforce, so a vast number of people are left without jobs (Abda & Cahyono, 2022). A factor that can act as a catalyst for criminal behavior is a relatively high rate of unemployment. With an increase in the pool of unemployment, criminal behavior is expected to rise, owing to economic distress (Bahtiar & Nurhayati, 2024). According to Purwanti & Widyaningsih (2019), people of working age who lack jobs are more likely to become involved in criminal behavior, mostly if the period of unemployment has lasted for a long time. This is due to the fact that a long period of unemployment worsens the economic burden and frustration, so it motivates people to become involved in criminal acts.

The Relationship between Poverty and Crime

According to Kumar et al. (2024), define poverty as an ongoing challenge in the global arena, the implications of which have yet to be fully dealt with effectively. Being an issue for not only developing but also developed countries, it is apparent that Indonesia is compelled to act on the poverty conditions in the country, despite the efforts initiated by the government to address it (Larabeni, 2022).

Kusuma and Sari (2024), poverty can be considered a state where income fails to generate the needs of existence and poses a threat to human life. When it comes to development, poverty goes beyond having little money. Poverty encompasses a lack of education, health care, infrastructure and other important services necessary to uplift the quality of living (Kharisma et al., 2021). According to Ferezegia (2018), poverty was found to be a result of low income and lack of ownership of means of production, which are responsible for preventing individuals from fulfilling their needs of primary housing and health.

Poverty could potentially be associated with several negative consequences within society, one of which could be an elevated potential for criminal behavior. A lack of adequate fulfillment of basic needs could mean that people living below the poverty line could potentially be driven towards criminal activities as a way to satisfy their basic needs of living (Fiyantika et al., 2024). Also, people living in areas with low economic conditions often exist in an environment without adequate forces of regulation, which could make them more susceptible to high rates of criminal activities (Mardinsyah & Sukartini, 2020). As a result, poverty reduction initiatives have to focus on this all-encompassing approach aimed at improving accessibility of economic resources, enhancing social capital, and advancing an economically inclusive and sustainable approach (Sipahutar et al., 2016).

The Relationship Between Health and Crime

Mental health represents a complex issue that involves psychological, emotions, and social well-being domains, which play a critical role in determining an individual's thinking and behaviors (Galderisi et al., 2015). According to Silver et al. (2008), mentally ill individuals demonstrate a greater tendency to be involved in violent and deviant criminal behaviors, which mainly result from the instability of their mental and self-control functions. In terms of the economy, this has led to greater societal costs associated with law enforcement and rehabilitation systems, as well as reduced productivity and efficiency in the labor market since mentally ill individuals do not have the ability to take part in productive economic activities. The criminal behaviors triggered by mental health issues have also had other indirect societal impacts, such as reduced public safety and lower investment in the society due to mental insecurity.

According to Chen et al. (2025), people suffering from mental disorders tend to lose the estimated 10 to 20 years of potential life compared to those who do not suffer from such disorders, as indicated by the Years of Potential Life Lost (YPLL). The estimated loss in years occurs in almost every group that falls under the spectrum of mental disorders. It is important to note that the causes are not limited to the death of the mentally ill person due to either suicide or a physical illness but also social, economic, or a lack of access to health care.

Based on the theoretical models and empirical results that have been discussed, the following hypotheses are proposed:

Ha1 : It is assumed that the level of education has a positive and significant impact on crime rates in East Java during 2019-2022.

Ha2 : It is assumed that the unemployment has a negative and insignificant impact on the crime rates in East Java during 2019-2022

Ha3 : It is assumed that the poverty has a negative and significant impact on the crime rates in East Java during 2019-2022

Ha4 : It is assumed that the health has a positively and insignificant impact on the crime rate in East Java during 2019-2020

RESEARCH METHOD

The research uses two main types of variables, which are dependent and independent variables. The dependent variable is crime, while the independent variables are divided into four variables: the level of education, unemployment rate, level of poverty, and health conditions. The type of data used is secondary data. The secondary is obtained from publications issued by the Central Statistics Agency (BPS) and the Criminal Statistic publication. The data is arranged in the form of panel data, which consist of ten districts of cities in East Java Province from 2019 to 2022.

The technique used for analysis is panel data regression, which is analyzed using three different models: the Common Effect Model, the Fixed Effect Model, and the Rondon effect Model. Data analysis is carried out using the Eviews 12 software. The panel data technique allows for the combination of cross section and time series data, wick assist in a more detailed rivew of the differences and changes over space and time, respectively. The models utilized in this research are presented below:

RESULTS AND DISCUSSION

Tabel 1. Panel Data Regression Results

Variable	Regression Coefficient					
	CEM	Prob.	FEM	Prob.	REM	Prob.
C	20,45087	0,4184	-43,31365	0,5627	13,23476	0,6003
RLS	0,376299	0,0036	1,394766	0,0086	0,384100	0,0015
TPT	-0,094158	0,1209	-0,102504	0,1952	-0,104947	0,0337
Log (KMK)	0,668573	0,0010	-3,543834	0,0512	0,677932	0,0012
Log (AHH)	-4,460091	0,4570	13,14708	0,4530	-2,786318	0,6415
R^2	0,323446		0,694929		0,253322	
<i>Adjusted. R²</i>	0,246126		0,542393		0,167988	
<i>F.stat</i>	4,183192		4,555841		2,968580	
<i>Prob. F</i>	0,007141		0,000496		0,032725	

Model Selection Test

(1) Chow Cross-Section $F(9,26) = 3,517770$; Prob. $F(9,26) = 0,0057$

(2) Hausman Cross-Section random $\chi^2(5) = 21,206018$; Prob. $\chi^2 = 0,0003$

Source: Eviews 12 Data Processing Results

The results obtained from the data processing using EViews are shown below. From the Chow test, it is shown that the cross sectional probability value of the F-statistic is 0.0057, which is less than the significance level of 0.05. Hence, the Fixed Effect Model is determined to be the best model according to the results of the Chow Test. On the basis of the above finding, The Hausman Test is performed to identify the best model estimate the panel data . In the context of the Hausman test, the aforementioned table reveals a probability value of 0.0003, which is also less than 0.05; therefore, the model selected based on the Hausman test is likewise the Fixed Effect Model.

Tabel 2. Heteroscedasticity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
The Relationship Between 13354				

C	-10.53186	37.89397	-0.277930	0.7833
RLS	-0.287329	0.251855	-1.140851	0.2643
TPT	0.018208	0.039548	0.460403	0.6491
LOG(KMK)	-0.305592	0.889337	-0.343617	0.7339
LOG(AHH)	3.423138	8.852307	0.386694	0.7021

Source: Eviews 12 Data Processing Results

Table 2 illustrates a probability value of 0.7833, an Open Unemployment Rate variable of 0.7339, a variable representing the Number of Poor Population of 0.7339, as well as a Life Expectancy variable of 0.7021, indicating that all independent variables exhibit a probability exceeding α 10%. Therefore, it can be inferred that this model does not exhibit heteroscedasticity.

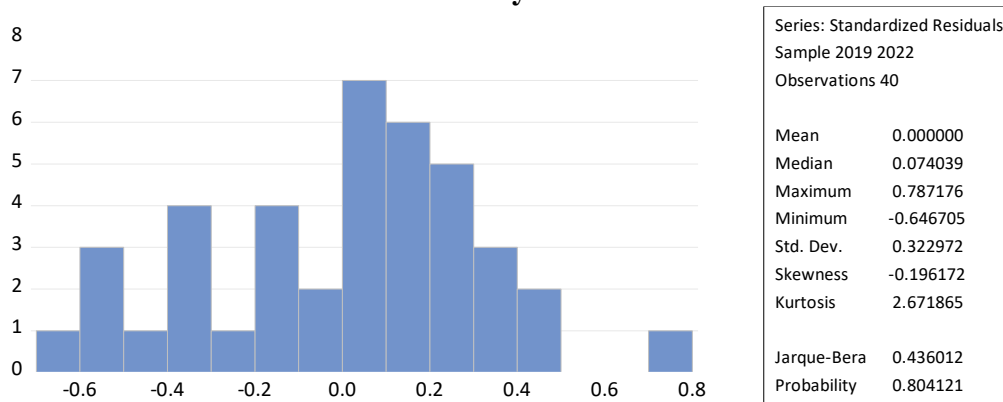
Tabel 3. Multicollinearity Test

	LOG(CRM)	RLS	TPT	LOG(KMK)	LOG(AHH)
LOG(CRM)	1.000000	0.206712	0.094507	0.287962	0.059310
RLS	0.206712	1.000000	0.742084	-0,534701	0.751136
TPT	0.094507	0.742084	1.000000	-0.249751	0.531705
LOG(KMK)	0.287962	-0.534701	-0.249751	1.000000	-0.458979
LOG(AHH)	0.059310	0.751136	0.531705	-0.458979	1.000000

Source: Eviews 12 Data Processing Results

From the table, it can be seen that the correlation coefficient between variables is below 0.8 so that the research data does not cause multicollinearity problems.

Normality Test



Source: Eviews 12 Data Processing Results

The outcomes derived from the Jarque-Bera test (JB) indicate that the statistical probability of JB is 0.804121, signifying a value exceeding α 0.1; consequently, the residuals exhibit a normal distribution. The nature of data used within econometric analysis may take a variety of forms. In a general context, statistical data can be classified into four levels of measurement scales, which include nominal, ordinal, interval, and ratio. The reporting of econometric model estimation results aims to systematically discuss the differences of these data measurements scales. In a bid to improve clarity, the information is presented below in Table 4 ;

Tabel 4. Econometric Model Estimation Results

$\text{LogCRM}_{it} = -43,31365 + 1,394766 \text{ RLS}_{it} - 0,102504 \text{ TPT}_{it} - 3,543834 \text{ LogKMK}$
$(0,5627) \quad (0,0086)^* \quad (0,1952) \quad (0,0512)^{***}$
$+ 13,14708 \text{ LogAHH} + \varepsilon_{it}$
$(0,4538)$

$R^2 = 0,694929$; $DW = 2,473681$; $F \text{ statistic} = 4,555841$; $\text{Prob. } F = 0,000496$

Description: *Significant at $\alpha = 0.01$; **Significant at $\alpha = 0.05$; ***Significant at $\alpha = 0.10$. The values listed in parentheses indicate the probability of the t-statistic.

As seen from the above results of the econometric estimation, the table supplies information on the regression coefficients, their respective probabilities, the Coefficient of Determinations (R-square), the Durbin Watson Statistic, F-Statistic, and the probability value for the F test for the chosen econometric model, which is the Fixed Effect Model. The F-test produces a probability value, which is 0.000496, that is less than the significance level $\alpha = 0.05$. This confirms that there exists a significant relationship between the independent and dependent variables, which are collectively influencing criminality. With an R-square value of 0.6949, it is inferred that about 69,49% of the variation in the dependent variable, which is criminality, is explained by the average length of educational participation, unemployment rate, poverty, and health, while the remaining 30.51% variation could be attributed to factors not included in the model. Moreover, it can be observed from Table 4 that there exist significant effects in the coefficients β_1 and β_3 , meaning that there exist educative, poverty, but not unemployment or health related influencing factors on criminality.

As can be seen from Table 4 above, the coefficient value for the average length of schooling is 1.394766 with a t-statistic probability value of 0.0086, suggesting that it has a positive and significant impact on criminality. This means that as the average length of schooling rises by one year, there is a corresponding increase of 139.5% crime rates per district and city within East Java Province every year. In short, as crime rates rise with increased education attainment by communities. This result evidently confirms another study conducted by Yanti et al. (2023), saying that higher education attainment is accompanied by rising crime rates among communities due to the impact exerted by other structural factors although communities have higher education attainment in East Java. Furthermore, Pratita and Woyanti (2024) emphasized that despite increased education attainment to adapt to labor demands and needs in society, it results in mismatches among attained education and unemployment sectors, creating pressures and rising crime rates among highly educated individuals resulting from increased social pressures.

The poverty variable has a coefficient of -3.543834, with a t-statistic probability of 0.0512, which shows that poverty has a negative and significant relationship to crime. In other words, every 1% increase in poverty leads to a 3.54% decrease in crime rates. This relationship can be explained from an Opportunity Theory perspective, which states that an action, requiring a motive, needs an opportunity as well. Based on this, Pratita and Woyanti (2024), argue that people from poorer backgrounds usually possess limitations in terms of resources, mobility, and access to targets, which cause significant limitations in committing crime because of fewer opportunities. In extreme cases, poor capabilities and difficulties in access may limit these instances.

To support these arguments, Sofiantini and Murialti (2025) argue that a lack of economic activity in impoverished regions leads to reduced social interactions and a reduced

pool of susceptible targets of crime. In this regard, one can argue that the non positive relationship between poverty and crime represents a lack of opportunities to commit these offenses the less developed a region is, the less it can accomplish and produce wrongfully. Using this argument, variables such as the rate of open unemployment and life expectancy have t-statistic probabilistic values higher than the α 0.1 significance levels, implying a lack of significance that does not require additional interpretation.

CONCLUSION

The analysis on the trend of crimes in East Java from 2019 to 2022 employed panel data regression analysis: specifically, it utilized the Fixed Effect Model. The R-squared for this analysis is 0.6949, which suggests that about 69.49% of the variations on the crime level can be explained by the variables included in the analysis: average education level, unemployment level, level of poverty, and health variables. The remaining 30.51% can be attributed to variables not included in the analysis. Based on the analysis, it can be seen that only two variables out of the four independent variables are statistically significant to the level of crime is education level and poverty.

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