

Macro Indicators of Crime Rates in Central Java Province

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Abstract

This study aims to analyze the influence of the Human Development Index (HDI), population, Open Unemployment Rate (OUR), and economic growth on the crime rate in Central Java Province from 2018 to 2024. This study uses a quantitative method with a panel data regression approach that combines time series and cross-sectional data from districts and cities in Central Java Province. The analytical model used is the Fixed Effect Model (FEM). The data used are secondary data obtained from the Central Statistics Agency (Badan Pusat Statistik/BPS). The results of the study show that the Human Development Index (HDI), population size, and the Open Unemployment Rate (OUR) have a positive and significant effect on the crime rate in Central Java Province. Meanwhile, economic growth has a positive but insignificant effect on the crime rate. Increases in HDI, population, and the open unemployment rate tend to be followed by a rise in crime due to socio-economic pressures, urbanisation, population density, and the weakening of social control in society. On the other hand, economic growth has not been able to fully reduce crime because the benefits of economic development have not been distributed equally across the community. Thus, it is necessary to distribute development more equitably, expand employment opportunities, and strengthen social supervision in order to reduce the crime rate in Central Java Province.

INTRODUCTION

Crime is a social problem that not only disrupts economic stability and growth, but also causes various losses to the community both in terms of material and non-material aspects that can result in the inhibition of the economic development process in an area (Faridatussalam et al., 2025). The increase in crime rates in Indonesia shows the importance of the role of the government, society, and legal institutions in efforts to maintain the quality of life of the community. As one of the provinces with a fairly high economic activity and population density, Central Java Province also faces the problem of crime. Cases such as theft, fraud, and other crimes are still found in a number of areas and are often related to the socio-economic conditions of the community (Sinaga et al., 2025). Based on data from the number of crime cases reported by Badan Pusat Statistik Provinsi Jawa Tengah (2025), Central Java province in 2024, it will reach 6,741 cases. This illustrates that security is still an important issue that is closely related to macroeconomic conditions and social dynamics in Central Java Province.

Changes in economic and social structures are one of the manifestations of these conditions (Azzarah et al., 2025). The large population and high unemployment rate pose its own challenges for the government and the community. The imbalance between population growth and the availability of jobs can have an impact on the potential increase in crime rates in Central Java Province (Zahra & Usman, 2023). The following is the development of the

crime rate in Central Java Province :

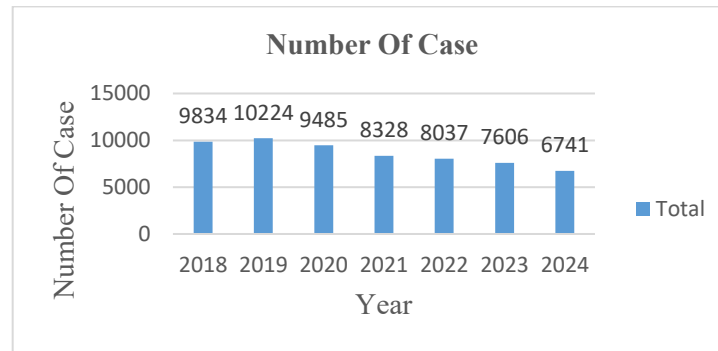


Figure 1. Development of The Crime Rate in Central Java Province

Source : Badan Pusat Statistik, 2018-2024.

The picture above shows that the crime rate in Central Java Province had fluctuated in the 2018-2020 period. In 2019 was the highest year reaching 10,224 reported crime cases (Badan Pusat Statistik Provinsi Jawa Tengah, 2025). This is due to the existence of a spatial pattern that shows that some areas have a higher crime rate compared to others, so this causes a concentration of crime and vulnerable areas (Shiode et al., 2023). On the other hand, the crime rate decreased from 2021-2024, with the lowest total crime cases reaching 6741 in 2024. Despite the decline in cases, the figures still indicate that the crime rate in the region still reflects unstable security conditions. According to research Pratama & Purwanto (2025), the types of crimes in Central Java Province are in the form of violence, fraud and theft. This shows that crime in Central Java is still dominated by conventional forms of crime spread across various districts/cities. This condition is related to the difference in the socio-economic situation of the community, so that criminal acts can appear both in the family environment and in public spaces, including schools and the environment around the community.

Research Yusuf & Zanudin (2025) shows that improving people's welfare by decreasing inequality, unemployment, and poverty tends to correlate with a decrease in crime rates. Improving people's quality of life is able to create social stability, expand access to economic opportunities, and reduce various social pressures that have the potential to trigger criminal acts. In the macroeconomic context, these conditions are reflected through the Human Development Index (HDI) which measures the quality of human development through the dimensions of health, education, and income. The higher the HDI value, the more likely the crime rate is to decrease. However, Budiarta & Anggraini (2024) research shows that the influence of socioeconomic conditions on crime is not always consistent in each region, given the differences in levels of development, social characteristics, and distribution of community welfare. Low HDI is often associated with increased crime due to limited access to education and economic opportunities that can encourage individuals to commit criminal acts as a form of fulfilling the needs of life. Ningrum et al. (2020) states that poverty and unemployment have a significant impact on the quality of human development, while economic growth does not affect the improvement of the quality of human development. These conditions show that low public welfare characterized by high poverty and unemployment can increase social vulnerability, which theoretically has the potential to encourage an increase in crime rates.

The number of population reflects the amount of human resources owned by an area and is one of the factors that can affect the socio-economic condition of the community (Ranti et

al., 2024). The denser an area, the greater the potential for various social problems to emerge, which can ultimately affect the crime rate. Population growth that is not balanced with equitable development and the availability of jobs can put pressure on the regional economy, such as increasing unemployment and poverty, which ultimately has the potential to increase crime rate (Sari & Yulianto, 2024). Previous research (Ningsih et al., 2024) has shown that high population densities can pose challenges to the availability of public resources and facilities, such as health services, education, and employment opportunities. This limited access can trigger social inequality and increase the potential for criminal acts, especially in urban areas with rapid population growth. On the other hand, areas with a more balanced level of population density and supported by an equitable distribution of resources tend to have higher levels of welfare and social stability. In line with this, research by Zuhairah et al. (2024) found that partial population has a positive effect on crime, because increasing population density can increase social pressure and economic competition in society. Meanwhile, research by Harati (2026) shows that population size does not always have a significant effect on crime, as it is highly dependent on the quality of development and the effectiveness of policies in each region.

Employment conditions reflected through the Open Unemployment Rate (OUR) are one of the important indicators in describing the level of community welfare and economic dynamics of a region. Previous research has shown that OUR not only has an impact on economic aspects, but also affects social conditions such as poverty and crime, although with varying results (Hurrin & Yazid, 2025). An increase in the unemployment rate is likely to be followed by a rise in the crime rate. This supports research Zahara & Yeniwati (2026) that found that OUR has a positive effect on crime, indicating that the increase in open unemployment increases the number of individuals who are not absorbed in the labor market, there by increasing the economic incentive to engage in illegal activities as a form of income substitution. However, research by Ardefa et al. (2025) shows that the unemployment rate has a negative and significant influence, meaning that even if there is a decrease in the unemployment rate, it does not automatically correlate with a decrease in the crime rate, depending on the characteristics of the region, the level of development, and the socioeconomic conditions of the community. These conditions show that the influence of TPT on crime is complex and cannot be partially understood, but needs to be linked to macroeconomic and social conditions in the region.

Macrologically, this condition can affect the rate of economic growth due to a decrease in the quality of human resources. When welfare declines, employment opportunities are limited, and social stability is disrupted, economic activity slows down (Rohmah et al., 2024). High economic pressures often trigger social instability and rising crime rates. The low quality of the population and increasing social pressure can hinder the overall development process and economic growth. However, research Rahayu et al. (2025) states that economic growth has a positive effect on crime, where increased economic growth is able to reduce crime rates through increased employment opportunities and community welfare. Another study Budiarta & Anggraini (2024) found that economic growth has no significant effect on crime because economic growth is not always followed by an equitable distribution of income and public welfare. The difference in the results of the study shows that the relationship between economic growth and crime is still an interesting phenomenon to be researched further.

Previous research Nindri & Devia (2023) generally used the variables of poverty,

unemployment, and the Human Development Index (HDI) in analyzing the crime rate using the Error Correction Model (ECM) approach. The results of the study showed that poverty and unemployment had an effect on crime, while HDI did not show a significant influence. In contrast to the previous study, this study uses a panel data approach that combines time series data for 2018–2024 and cross-section data of districts/cities in Central Java Province, by adding variables of the Human Development Index (HDI), population, Open Unemployment Rate (OUR), and economic growth in analyzing crime rates. Therefore, this study aims to analyze the influence of the Human Development Index, population, Open Unemployment Rate, and economic growth on the crime rate in Central Java Province during the period 2018–2024.

METHOD

Types and Data Sources

This research is a quantitative research using secondary data obtained from the Badan Pusat Statistik (BPS) of Central Java Province. The data used is in the form of panel data which is a combination of cross-section and time series data.

The cross-section data covers 35 districts/cities in Central Java Province, while the time series data covers the period from 2018 to 2024. Data processing is carried out using Stata 17 software.

The variables used in this study consist of dependent and independent variables. The dependent variable is crime, while the independent variable includes the Human Development Index (HDI), the number of population, the Open Unemployment Rate (OUR), and economic growth.

Research Object

The object of this research is 35 districts/cities in Central Java Province during the 2018–2024 period. The selection of this research object is based on differences in social and economic characteristics between regions which allows for variations in crime rates.

Analysis Methods

The data analysis method used in this study is panel data regression with the Fixed Effect Model (FEM) approach. Data panel is a combination of cross-section and time series data that allows analysis of the influence of independent variables on dependent variables simultaneously between individuals and time. The use of the panel data method in this study was chosen because it is able to observe changes in variables from time to time in each research object simultaneously, so that the information obtained becomes more complete, accurate, and able to increase the number of research observations. This has an impact on increasing the degree of freedom and results in more efficient model estimation than the use of cross section or time series data alone (Baltagi, 2021).

The selection of the Fixed Effect Model (FEM) in this study was based on the results of the Chow test and/or the Hausman test which showed a probability value of less than 0.05. This shows that the Fixed Effect Model (FEM) model is more appropriate than the Common Effect Model (CEM) and Random Effect Model (REM) models, so FEM was chosen as the estimation model used in this study.

Panel Data Regression

The panel data regression model used is as follows:

$$Y_{it} = \alpha_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \varepsilon_{it}$$

Description:

Y	= Crime
α_i	= different intercepts between districts/cities (fixed effect)
$\beta_1, \beta_2, \beta_3, \beta_4$	= regression coefficient
X1	= Human Development Index (HDI)
X2	= Population
X3	= Open Unemployment Rate (OUR)
X4	= Economic Growth
ε	= error term
I	= 35 districts/cities in Central Java Province
t	= year 2018–2024

RESULTS AND DISCUSSION

Results

Classical Assumption Test

a. Multicollinearity Test

The multicollinearity test was carried out to find out whether or not there is a relationship between independent variables in the regression model. Based on the conditions used, if the tolerance value is > 0.01 , then there is a multicollinearity problem, while if the tolerance value is < 0.01 , then multicollinearity does not occur. The results of the multicollinearity test are as follows:

Table 1. Multicollinearity Test

Variabel	VIVID	1/VIF
IPM	1.33	0.749104
Total Population	1.33	0.753698
TPT	1.11	0.898976
Economic Growth	1.10	0.905032
Mean VIF	1.22	

Source : Data in processing, 2026

The test results showed that in the Human Development Index (HDI) variable, the number of population, the open unemployment rate (OUR), and economic growth had a value of less than 0.01 and a VIF value of less than 10. Thus, it can be concluded that all independent variables are free from multicollinearity problems and the regression model used is worthy of further analysis.

b. Heterokedasticity Test

The heteroscedasticity test was performed to determine the presence of residual variance inequality in the regression model. If the probability value is > 0.05 , then heteroscedasticity does not occur, while if the probability value is < 0.05 , heteroscedasticity occurs. The results of the heteroscedasticity test are shown as follows.

Table 2. Heterokedasticity Test

Chi2(1) = 198.35

Prob > chi2 = 0.0000

Source : Data in processing, 2026

The results show $0.000 < 0.05$ which shows that the regression model has a heterokedasticity problem, this shows that the error variance is not constant and the model does not meet classical assumptions. Therefore, it is necessary to carry out robust standard errors to overcome the problem of heterokedasticity.

c. Robust Statistical Test

In overcoming heteroscedasticity, model estimation is carried out using robust standard errors so that the results obtained are more accurate. The results of the model estimation with a robust approach are shown as follows.

Table 3. Robust Statistical Test

Variable	Coeficin	Robust Std Error	t-test	Prob.
HDI (Human Development Index)	37.67726	2.927766	12.87	0.000
Total Population	234.0488	17.86139	13.10	0.000
TPT (Open Unemployment Rate)	13.91567	1.906149	7.30	0.000
Economic Growth	16.15755	9.878621	1.64	0.153
obs	245			
R-squared	0.5883			
f-test	0.000			

Source : Data in processing, 2026

The results of robust estimation in table 3 show that the variables of the Human Development Index (HDI), the number of population, and the open unemployment rate (OUR) have a positive and significant effect on the dependent variables. Meanwhile, the economic growth variable did not have a significant effect.

Panel Data Regression Analysis

This study uses several tests, namely the Chow test and the Hausman test to determine the most appropriate panel data regression model. The results of the test of the selection of the model are presented as follows.

Table 4. Model estimation results

Variable	Coeficin	t-test	Prob.
HDI (Human Development Index)	37.67726	16.13	0.000
Total Population	234.0488	14.10	0.000
TPT (Open Unemployment Rate)	13.91567	2.78	0.006
Economic Growth	16.15755	1.94	0.054
R Squared	0.5883		
f-test	0.000		

Source : Data in processing, 2026

The results of the model estimation test in table 1 show that the selected model is the Fixed Effect Model (FEM). The independent variables of the Human Development Index (HDI), Population, and Open Unemployment Rate (OUR) have a probability value of <0.05 , meaning that it has a significant positive effect on the dependent variable. Meanwhile, the independent variable Economic Growth has a probability value of >0.05 , meaning that it has a positive effect on the dependent variable.

T test

The results of the t-test in table 4 show that the Human Development Index (HDI) variable has a positive effect on crime. This means that every 1 unit increase in HDI will increase the number of crime cases by 37.67726 assuming other variables are constant. Furthermore, the variable population has a positive effect on crime. This means that every increase in the number of population by 1 person will increase the number of crime cases by 234,0488, assuming other variables are constant. Then, the variable Open Unemployment Rate (OUR) also has a positive influence on crime. This means that any increase in the number of unemployed by 1 percent will increase the number of crime cases by 13.91567 assuming other variables are constant. Meanwhile, economic growth has a positive but insignificant effect on the crime rate. This suggests that any 1 percent increase in economic growth will increase the number of crime cases by 16.15755, but this effect is not statistically significant.

F Test

Based on table 4, the Prob value (F-Statistic) is $0.000 < 0.05$. The results of the F test on the independent variables of the Human Development Index (HDI), Number of Population, and Open Unemployment Rate (OUR) had a significant positive effect on the crime rate. This shows that together these variables are able to explain the variation in crime rates. However, the results of testing the economic growth variable were not significant to the crime rate, although they showed a positive relationship.

Determination Coefficient Test

The R-squared value of 0.5896 from the dependent variable shows that the change in the crime rate can be explained by the independent variables of the Human Development Index (HDI), the number of population, the open unemployment rate (OUR), and economic growth of 58.96% in the regression model. Meanwhile, the remaining 41.04% of the variability of the crime rate is explained by other variables outside the model.

Discussion

The Effect of the Human Development Index on Crime

Based on the results of regression testing, the probability number of $0.000 < 0.05$ shows that the HDI variable has a positive and significant effect on the crime rate in Central Java Province. This shows that every 1% increase in the Human Development Index (HDI) is associated with an increase in the crime rate of 37.67%, *ceteris paribus*. The results of this study are in line with Crime Opportunity Theory which explains that a criminal act occurs when the benefits obtained are greater than the costs that must be borne by the perpetrator, so that the chances of crime occurring are greatly influenced by the available situational

conditions (Farrell & Tilley, 2026). This finding is strengthened by research Hermawanti & Kania Sari (2025) that the Human Development Index (HDI) has a positive and significant effect on the crime rate. The findings indicate that improving the quality of human development does not necessarily correlate with a decrease in crime rates, especially in urban areas with intensive socio-economic dynamics, where the complexity of community activities can create opportunities for crime. Areas with high HDI are generally areas with higher levels of urbanization, population mobility, and economic activity so that they can create more opportunities for crime (Fabela & Khairunnisa, 2024).

Kim & Lee (2023) It shows that urban environments have a close relationship with crime rates, although these relationships are not always linear, where urban environment characteristics such as activity density, urban spatial structure, and social interaction can influence crime patterns. In certain contexts, an increase in HDI can be followed by changes in social and economic structures that affect crime patterns in society. Improving cognitive capabilities, digital literacy, and access to technology, which is in line with the improvement of the Human Development Index (HDI) has the potential to encourage the transformation of crime characteristics from conventional forms to more modern crimes (Suseno et al., 2025). In line with this, Zhou et al. (2024) explained that the development of digital technology and the expansion of virtual spaces have given rise to new forms of crime such as metacrime and cybercrime, where technological advances not only create new opportunities for criminal activity, but also increase the complexity of technology-based crime.

Although HDI generally describes an improvement in the quality of human resources and community welfare, the results of the analysis show that an increase in HDI is not always followed by a decrease in crime rates. This condition shows that improving the quality of human resources is not always directly proportional to the decrease in crime rates, but can encourage changes in the form and characteristics of crime to become more complex. This is supported by research Kim & Lee (2023) that shows that urban dynamics and infrastructure development also open up opportunities for the development of various forms of crime. The findings are in line with the view Zhou et al. (2024) that modernization and development not only result in economic progress, but also open up space for the transformation of crime patterns from conventional forms to more modern and hard-to-detect forms.

However, the results of this study are different from the findings Budiarta & Anggraini (2024) that show that HDI has a negative effect on the crime rate. In addition, Mailadani et al. (2024) it also said that a high HDI value indicates a better quality of human resources and a better level of community welfare and contributes to reducing poverty levels. These differences in results show that the relationship between HDI and crime can vary between regions, influenced by social characteristics, economies, levels of urbanization, and regional development dynamics. Thus, human development that is not balanced with the strengthening of governance and social control can give rise to a development paradox, which is a condition when the progress achieved is followed by the emergence of new and more complex social risks.

Effect of Population on Crime

The results of the analysis showed a positive and significant influence between the population and crime with a probability of $0.000 < 0.05$. Every 1% increase in the Population,

is associated with an increase in the crime rate of 234.048%, *ceteris paribus*. This condition indicates that the more densely populated an area, the greater the potential for social problems that can affect the crime rate. High population density encourages an increase in the intensity of social interaction, competition in fulfilling the needs of life, limited employment opportunities, and the complexity of social relationships which can ultimately increase the risk of crime (Zahra & Usman, 2023). In addition, high birth rates have also led to increased population mobility and social heterogeneity in high-density areas, thus encouraging the formation of a more anonymous society, weakening social closeness, and increasing individualistic behavior tendencies. This is in line with research Dari & Asnidar (2022) that found that population density has a positive and significant effect on crime due to increased social and economic pressures in a region. In addition, population density can also increase the number of potential crime targets and expand the space for perpetrators, so that an increase in population density tends to be followed by an increase in crime rates. Furthermore, population structure was also proven to be related to crime rates based on regression estimates Negative Binomial. Malthus argued that the population tends to increase faster than the ability to provide resources so that it can cause various social and economic problems if it is not balanced with adequate management (Abdah et al., 2023). These findings suggest that changes in population composition and distribution can affect the dynamics of crime in a region, indicating that demographic factors play a role in explaining variations in crime rates (Sypion-Dutkowska et al., 2022).

This phenomenon is also inseparable from the urbanization process that encourages an increase in the number of people in urban areas. Insani et al. (2026) said that the urbanization process can trigger social disorganization, which is characterized by weakening of social ties and increasing crime potential. The flow of population movement from villages to cities causes increased density that has the potential to reduce environmental quality, pressure on public facilities, and limited employment (Marbun et al., 2025). The larger the population in an area, the greater the potential for interaction between individuals, which indirectly increases the likelihood of crime. When the availability of resources is not proportional to population growth, people will face limited access to various economic needs and opportunities (Zahra & Usman, 2023). This then opens up opportunities for the emergence of opportunity-based crime, where perpetrators are more likely to commit criminal acts due to the low social control in a dense and heterogeneous society (Farrell & Tilley, 2026).

The high concentration of population in an area can increase the chances of crime because more and more individuals are active in the same space. This condition increases the possibility of interaction between perpetrators and crime targets and creates more opportunities for crime to occur. This phenomenon is in line with the Routine Activity Theory which explains that crime occurs when there is an encounter between a motivated perpetrator and a suitable target in a certain environment (Susetyo et al., 2025). These conditions have the potential to result in social problems, such as increasing unemployment and slums which ultimately increase vulnerability to conventional forms of crime such as theft, robbery, and street crime that occur in public spaces (Hidayati, 2021). This phenomenon can be explained through Malthus's population pressure theory, which states that an imbalance between faster population growth than the availability of resources can cause social and economic pressures in society (Sabiq & Nurwati, 2021). This gives rise to individual decisions to commit criminal acts

influenced by rational considerations, where the action is chosen when the expected economic benefits are greater than the costs and risks, especially in conditions of limited employment opportunities and legal income (Jazila & Aini, 2025).

Effect of Open Unemployment Rate on Crime

The results of the study indicate that the open unemployment rate has a positive and significant influence on the crime rate with a probability value of $0.006 < 0.05$. These findings are in line with research Saputra (2023) and Zahara & Yewiwati (2026), unemployment has a positive relationship with crime rates, where an increase in the unemployment rate tends to be followed by an increase in crime rates. It also supports the theory of crime economics Becker (1968) which explains that individuals can make rational considerations of costs and benefits in making decisions, so that the absence of a job can increase an individual's tendency to commit criminal acts. Unstable economic conditions, such as low income and limited sources of income, also encourage individuals to look for alternatives to meet their needs through means that are not in accordance with the applicable legal provisions Becker (1968). Arthur Lewis' dual-sector theory explains that unemployment occurs as a result of an imbalance in labor absorption between the traditional sector and the modern sector (Lewis, 1954). The imbalance between the supply and demand of labor in the labor market causes the entire labor force to not be absorbed in productive activities. This shows that the dynamics of job creation have not been in line with the growth of the labor force, so some individuals do not have opportunities (Joko & Dyah, 2022).

In addition, unemployment can also cause social and psychological pressure due to economic uncertainty and the loss of individual roles in productive activities. Such pressure can affect the individual's emotional state and mindset in making decisions, thereby increasing the vulnerability to seek alternatives to meet needs that are not in accordance with the norms and provisions of the applicable law (Sabiq & Nurwati, 2021). In addition, Sypion-Dutkowska et al. (2022) the results of the study show that areas with higher rates of poverty and unemployment tend to experience an increase in various types of crime, such as theft, destruction of property, and drug crimes. This condition ultimately not only has an impact on the economic aspect, but can also reduce the quality of life of the community and hinder social and economic development in a region. However, previous research Ardefa et al. (2025) and Nadya Soraya et al. (2024) has shown that unemployment has a negative influence on crime, not all unemployed individuals will commit criminal acts, as there are other factors such as social support, education, and the environment that also influence individual decisions. This phenomenon can be explained by Ardefa et al. (2025) the fact that most of the unemployed come from highly educated groups, such as diploma and college graduates. The difference in results shows that the effect of unemployment on crime is contextual and can differ depending on socioeconomic conditions, community characteristics, and the structure of the labor market in each region.

The Effect of Economic Growth on Crime

Based on the results of the regression test, the economic growth variable has a probability value of 0.054 from a significance level of < 0.05 with a coefficient of 16.15 which means that every 1% increase in economic growth will increase the crime rate by 16.15%,

assuming that other variables are considered fixed (*ceteris paribus*). Although the coefficient shows a positive relationship, it is not statistically significant to the crime rate in Central Java Province. This means that increased economic growth tends to be followed by an increase in crime, but the influence is not statistically strong enough (Rahayu et al., 2025). On the other hand, other research In this case, an increase in economic growth under certain conditions can be followed by an increase in crime rates, especially if it is not accompanied by an equal distribution of income and optimal labor absorption. However, in theory, high economic growth can reduce the crime rate because increased economic activity is able to create jobs, increase people's income, and improve social welfare Becker (1968). From an economic perspective, an increase in economic activity can increase people's chances of obtaining a legal income so that individuals' tendency to commit criminal acts is lower. In addition, economic growth also reflects an increase in production and development capacity which is expected to be able to improve the socio-economic conditions of the community (Budiartha & Anggraini, 2024)

In fact, these conditions cause the opportunity cost to commit criminal acts to be higher because people have the opportunity to earn income through legal economic activities (Jazila & Aini, 2025). This condition can occur if the ongoing economic growth has not been able to create an optimal equitable distribution of people's welfare. This is supported by research (Kartiasih et al., 2023) showing that the existence of the informal sector still contributes to high income inequality in Indonesia, considering that workers in the sector generally have lower income levels and limited economic access. In addition, research Pida et al. (2025) says that increasing economic growth is also often followed by urbanization, population mobility, and increasing social and economic activities of the community. This condition can create opportunities for criminal acts, especially in areas with high economic activity. This is supported by research Budiartha & Anggraini (2024) that finds that economic growth that is not accompanied by income equality and unstable economic conditions can strengthen social inequality and encourage individuals to commit criminal acts as an effort to meet the needs of life. This condition indicates that crime is more influenced by other socio-economic factors such as income inequality, unemployment, population density, and uneven community welfare. The insignificance of the economic growth variable in this study shows that the increase in economic growth has not been fully able to affect changes in the crime rate in Central Java Province.

CONCLUSION

Based on the results of the study using the Fixed Effect Model (FEM) method, the variables of the Human Development Index (HDI), the number of population, and the open unemployment rate were proven to have a positive and significant effect on the crime rate in Central Java Province, while the economic growth variable had a positive but not significant effect. The HDI variable has a positive and significant influence on crime, which shows that improving the quality of human development is not always followed by a decrease in crime rates, but can lead to changes in more complex forms of crime due to technological development, urbanization, and high social mobility. Therefore, the government needs to strengthen social supervision, digital literacy, and community governance and integrity so that the improvement of the quality of human resources is not followed by the increasing risk of

modern crime. The population variable also has a positive and significant effect on crime, which shows that high population density can increase social pressure, economic competition, and weaken social control in society. Thus, it is necessary to equitably distribute regional development, improve public facilities, and control urbanization to reduce population density which has the potential to increase crime. In addition, the open unemployment rate has a positive and significant effect on crime because limited employment and economic pressure can encourage individuals to commit criminal acts in an effort to make ends meet. Therefore, the government needs to expand employment opportunities, improve the quality of the workforce, and strengthen community economic empowerment programs to reduce the unemployment rate and reduce the risk of crime in Central Java Province.

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