

Research Article

The Impact of Social Variables on Income Inequality Distric/Municipalities of West Java Province

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Abstract: Economic development aims to improve the quality of life for all people. Equitable distribution of the benefits of growth is essential. Social variables can support development but can also cause inequality. This study examines the effect of population, health, education, human development, urbanization, per capita income, wages, and unemployment on income inequality in West Java. Using panel data regression on BPS 2018-2022 data, this study found that urbanization significantly affects income inequality. This suggests that high urbanization influences the high level of inequality in West Java due to differences in wages and employment opportunities between urban and rural areas.

Keywords: Economic Development; Income Inequality; Social Variable

INTRODUCTION

Development is a process of change that is directed and planned with the aim of improving the quality of life of the community (Hariyati et al, 2017). The focus of economic development is to improve welfare through economic development and pay attention to other aspects such as education, technology, health, infrastructure, and community income and welfare (Sukirno, 2006). The benefits of this development must be felt by all levels of society, not just a few. Equity is essential to achieve key goals such as improving quality of life and reducing poverty. When equity is not achieved, large inequalities can pose a threat to a country's progress (Maurilla et al, 2022). As one of the developing countries, Indonesia faces growing inequality problems, especially in terms of equitable development in each region. One of the determinants of development success is equitable development, but this is not easy to realize because there are many things that must be fulfilled so that welfare and equitable development can be achieved.

Measuring community welfare can be done by looking at the low level of income inequality. However, this aspect is often ignored when comparing community welfare and its development over time (Hindun et al, 2019). In fact, income inequality has a significant impact on the socioeconomic conditions of the community. Income inequality can reduce people's purchasing power for goods and services. When people's purchasing power is low, this can hamper economic activities in creating production. This will negatively affect the economic growth of a region (Alesina et al, 1994). In addition to the impact of inequality on economic growth, inequality is also known to limit social mobility, increase poverty, lower life expectancy, and reduce happiness (Wang et al, 2024).

Inequality in Indonesia is measured using various methods, one of which is the Gini Ratio. The Gini ratio is a measurement tool used by the Badan Pusat Statistik as the official institution that provides basic statistical data in Indonesia to measure income inequality in society. Although Indonesia as a whole has a relatively low Gini ratio, there are certain regions that show high levels of inequality, even exceeding the national Gini ratio level. West Java Province is one example of a region that shows significant levels of inequality. Among the provinces in Java, West Java has the third highest gini ratio after the Special Region of Yogyakarta and DKI Jakarta, reaching 0.41 in 2022, indicating that inequality is at a moderate stage. Despite being at a moderate stage, this figure is still higher than the national gini ratio of 0.38. Bappeda (2023) mentioned that West Java also occupies the fourth position as the province with the highest level of inequality nationally. Long-term income inequality can cause social turmoil and hamper human development by reducing welfare, increasing poverty and unemployment, and lowering health and education standards (Taresh et al, 2021).

Figure 1.
Gini Ratio of Java Island in 2022



Source: BPS, 2022

Social variables are known to support genuine development strategies (Todaro, 2000), for example improvements in the quality of education and access to health services can help create more productive and healthy human resources, which in turn can support sustainable economic growth. However, social variables also play a role in creating inequalities in income distribution (Taresh et al, 2021). These inequalities can arise when access to these social variables is unequal across society. For example, if only a small proportion of the population has access to high-quality education, this will lead to people being trapped in low-wage jobs. The income gap between groups of people will widen. In addition, population growth can also contribute to income inequality. Rapid population growth often has a more negative impact on the poorer sections of society. Families with a large number of members, especially children who are still in school, will experience a heavy burden of dependents. They may experience difficulties in meeting basic needs such as food, education and health. Ultimately, poverty and income inequality worsen because these families do not have enough resources to improve their quality of life (Todaro, 1997). This is also in line with the research of Samsir et al (2018) who found that an increase in population contributed to an increase in income inequality.

For the period 2018 to 2022, West Java's population growth rate fluctuated. During this period, the peak population growth rate occurred in 2018 where it reached 1.49. In contrast, it was recorded that the population growth rate reached its lowest rate in 2020 with a rate of 1.11. This decline was partly due to the effects of the Covid-19 pandemic which affected population mobility and birth rates. In 2022, the population growth rate in West Java Province decreased. Nevertheless, the population growth rate in this province still exceeds the population growth rate in Indonesia as a whole.

Table 1.
Growth Rate of Indonesia and West Java Province

Year	Growth Rate	
	Indonesia	West Java
2018	1,33	1,49
2019	1,31	1,48
2020	1,25	1,11
2021	1,22	1,41
2022	1,17	1,33

Source: BPS (2022)

In 2022, West Java Province will have a population of 49 million people, making it the most populous province in Indonesia according to data from the BPS. The impact of this population growth includes an increase in the labor force, while new job opportunities are limited. This imbalance exacerbates the unemployment problem by increasing the number of workers who cannot find work. This limited absorption of human resources is the cause of low living standards (Todaro, 2000). With a large population, the open unemployment rate in West Java is also the highest nationally. Bappeda stated that in 2022 the unemployment rate in this province reached 8.31%. Liling et al (2018) mentioned that increasing unemployment has an effect on increasing inequality. Although the economy in West Java is growing rapidly and contributing significantly to the Indonesian economy, the employment problem remains a serious challenge. The rate of population increase is an obstacle to economic development. It is known that West Java's GRDP in 2022 reached 22.40% of the total GRDP of the Java region which amounted to 56.48%. However, the increase in employment opportunities is not in line with high economic growth, so income inequality still occurs. Hendarmin (2019) states that an increase in economic growth will cause inequality to increase as well. As the most populous region in Indonesia and with a high unemployment rate, it can hinder the increase in minimum wage and income equality (Todaro, 2000).

One of the main focuses of the Indonesian government is equity, including in West Java Province. Currently, the main priority of West Java Province, as outlined in the 208-2023 RPJMD document is to improve the welfare and quality of human resources. Over the past five years, there has been a steady increase in the Human Development Index in West Java Province, reaching a high of 73.12 in 2022. Investment in human capital development is expected to reduce income inequality (Adeleye, 2023). In other words, efforts to improve the quality of labor through education and training are likely to reduce income inequality. This is in line with Kuznets (1955) statement that increasing skills and knowledge will reduce inequality.

The existence of metropolitan cities or growing industrial areas is often a center for human capacity building. The availability of access to education and training as well as employment opportunities are the main factors that encourage people to urbanize from

rural to urban areas. Kuznets (1955) suggested that high wage levels in urban areas could reduce inequality. However, the reality shows that the highest level of inequality in West Java Province occurs in urban areas. According to BPS data in March 2022, the level of inequality in urban areas of West Java Province reached 0.43 while in rural areas it reached 0.32. This is due to the fact that many people migrate with the aim of earning higher incomes (Todaro, 2000). When urbanization occurs, newcomers are often in lower economic positions, while higher income groups dominate the top of the economy. As a result, urban income inequality becomes wider (Kuznets, 1955).

Taresh et al (2021) research on the relationship between income inequality and social variables shows that income inequality affects social variables in Indonesia. In his research, the increase in population growth and unemployment rate occurs due to inequality in the population, where people with lower incomes are more likely to prioritize the number of children over the quality of life. Income inequality also results in declining levels of health, access to education, HDI, and urbanization growth rates. Based on these results, this study focuses on whether or not social variables influence income inequality, but within the scope of West Java province. If social variables are found to significantly influence income inequality, understanding these factors in the context of West Java Province can help formulate more effective policies to address inequality. Thus, this study can provide valuable inputs to support efforts to reduce inequality in West Java.

LITERATURE REVIEW

Kuznets Theory

Kuznets (1955) elaborated that in the initial phase of economic growth, the rich-poor gap is significant, mainly due to the shift from the agricultural sector to the industrial sector, which has high wages and productivity. Income inequality initially widens rapidly between the rapidly growing industrial sector and the stagnant agricultural sector. However, over time, inequality tends to shrink due to improvements in people's skills and knowledge. Urbanization that occurred due to sector shifts caused income inequality in cities to increase, with newcomers in low-income positions while high-income groups dominated the economy. However, in more advanced stages of economic growth, inequality tends to decrease due to increased wages and employment opportunities in urban areas. Kuznets also argues that a population boom as a result of declining mortality rates without being followed by a decline in birth rates can exacerbate inequality, as resources and opportunities become limited, leaving the low-income group further behind the high-income group, thus widening inequality.

Todaro's Theory of Migration Model

Todaro (2000) assumes that migration from rural to urban areas is an economic phenomenon based on the relative advantages of migration. The difference between expected income in the city compared to actual income in the countryside drives the decision to migrate. The main factor is the wage gap and job opportunities in the city. Despite the high unemployment rate in cities, migration still occurs as migrants seek higher incomes. Consequently, the increase in urban unemployment is a result of economic imbalances including the wage gap.

The Effect of Population on Income Inequality

The phenomenon of rapid population growth is known as a population explosion, caused by high birth rates and declining death rates. The onset of industrialization also increased population growth. This rapid growth poses serious problems, especially in underdeveloped countries, where population growth is considered a drag on economic development and negatively affects the poor. Population increases exacerbate poverty and inequality. Samsir et al (2018) mentioned that population has a positive and significant effect on income inequality.

The Effect of Health on Income Inequality

Health problems exacerbate income and wealth inequality. Health problems affect all segments of society, but are more severe in communities with limited economic resources. The spread of disease and poor health among low-income people exacerbates income inequality because people who are sick or malnourished have lower productivity (Taresh et al, 2021). Economic development affects health and improved health conditions increase labor productivity. More health complaints reduce productivity and have a negative impact on Gross Domestic Product and economic growth (Prananda et al, 2018).

The Effect of Education on Income Inequality

Educated people tend to have higher salaries, causing income inequality to increase due to high incomes, while those without equal access to education are trapped in low incomes. However, with good access to education, inequality can be reduced over time (Dollar, 2016). Xu et al (2023) in their study showed that increasing secondary and tertiary education can reduce income inequality, while Ahmad and Triani (2018) showed that education level does not affect income inequality.

The Effect of Human Development on Income Inequality

Suryani et al (2021) state that the Human Development Index measures the success of human development with three main components, namely knowledge, longevity and health, and decent living standards. This value indicates the level of inequality, when the higher the HDI value, the lower the income gap and vice versa. From his research, it was found that HDI has a negative effect on income inequality because it can increase productivity and income, thus reducing inequality. On the contrary, Thye et al (2022) found that increasing human development tends to increase income inequality.

The Effect of Urbanization on Income Inequality

Todaro (2000) explains that urbanization occurs due to differences in expected income between cities and villages. Migrants consider job opportunities in cities and villages, choosing based on the difference in real income and the chance of getting a job in the city. However, uncontrolled urbanization is considered to undermine the city's development strategy. In addition, it creates problems for the destination area, the origin area, and the individuals themselves. Many end up as unemployed because of the rapid growth of the labor force and the city cannot provide employment opportunities to all the existing labor force. Due to the lack of jobs, many are willing to work for lower wages while in the village. (Dwi, 2019). Thus, Dollar (2016) states that population movement to urban areas can increase income inequality.

The Effect of Income per Capita on Income Inequality

Todaro (2000) states that development is often thought of as an economic phenomenon, with progress measured by per capita income growth. However, the main focus is often on economic growth so that other issues such as poverty, unemployment, and inequality are ignored. Research from Hendarmin (2019) found that increased economic growth will lead to increased inequality, in accordance with the Kuznets Hypothesis which states that the beginning of economic growth worsens income distribution. On the other hand, Mukhlis et al (2018) found no effect of economic growth on income inequality.

The Effect of Wages on Income Inequality

Wages are rewards for labor at levels that vary across labor markets (Case and Fair, 2006). In employment, experienced workers are often paid higher wages so that they earn more than less experienced workers. Wage increases can widen inequality because they are felt more by workers with higher incomes (Dollar, 2016). The minimum wage, a strategy to reduce inequality, is the lower limit to be paid to workers (Case and Fair, 2006). Medrano-Adán and Salas-Fumás (2023) state that the minimum wage slightly increases the Gini index, due to changes in income distribution among workers. This suggests the minimum wage helps low-income workers, although its impact on overall income inequality is small. However, Suryani et al (2021) mentioned that the minimum wage has a positive impact on inequality as its increase may reduce labor demand and cause some to lose income.

The Effect of Unemployment on Income Inequality

Mankiw (2006) mentions unemployment as a problem that can affect individuals directly. Todaro (2000) also mentioned that unemployment reflects low development performance. Increased urbanization and education while the growth of the industrial sector is not in line with the increase in the number of workers contributes to the increase in unemployment (Jhingan, 2018). In many cities, the unemployment rate reaches 10-20 percent of the labor force, with increasing unemployment among the youth and highly educated. Liling (2018) shows that rising unemployment can increase inequality as well. In contrast, Muryani et al (2021) found that unemployment is not the main source of income inequality.

METHOD

This study was conducted using a quantitative approach using descriptive method, which is intended to understand the influence of social variables on income inequality. These variables include the population variable with the population growth rate, the health variable with the percentage of the population with health complaints during the last month, the education variable with the high school net enrollment rate, the human development variable with the Human Development Index, the urbanization variable with urban population growth, the income per capita variable with the Gross Regional Domestic Product per Capita indicator, the wage variable with the regional/provincial minimum wage, and the unemployment variable with the open unemployment rate, all of which affect the income inequality variable. The data utilized is secondary data or preexisting data, which is collected from various existing sources, including from the

Badan Pusat Statistik (BPS) and other relevant sources. Data collection techniques are conducted through the documentation method, which includes document collection.

The study used descriptive statistical analysis and regression. Descriptive statistical analysis describes secondary data, while regression analysis examines the relationship between variables with the Panel Least Square (PLS) method using the Eviews 10 program. This study evaluates the influence of social variables on income inequality in districts/cities in West Java in 2018-2022.

$$Ginit = \alpha_i + \beta_1 POPit + \beta_2 HEALTit + \beta_3 EDUCit + \beta_4 HDIit + \beta_5 URBit + \beta_6 INCOit + \beta_7 Wit + \beta_8 UMit + \epsilon_{it}$$

Description:

Ginit	= Gini ratio of i, in year t
POPit	= Population growth rate of i region, in year t
HEALTit	= Percentage of population with health complaints during last month of i, in year t
EDUCit	= Net enrollment rate in senior high school of i, in year t
HDIit	= Human Development Index of i, in year t
URBit	= Number of People Per Square Kilometer of i, in year t
INCOit	= Gross Regional Domestic Product per Capita of i, in year t
Wit	= Regional Minimum Wage of i, in year t
UMit	= Open Unemployment Rate of i, in year t
ϵ_{it}	= Error term
β_0	= Constant
$\beta_1 \beta_2 \beta_3 \beta_4 \beta_5 \beta_6 \beta_7 \beta_8$	= Regression parameters to be estimated
i	= 27 regencies/cities in West Java province
t	= Observation time (2018-2022)

To predict the regression model in multiple linear regression analysis with panel data, there are three approaches that can be used, namely Common Effect, Fixed Effect, and Random Effect. To choose the most appropriate model, there are three tests that can be done, namely the Chow Test, Hausman Test, and Lagrange Multiplier Test. Furthermore, the selected regression model must pass the classical assumption test, which includes tests for normality, multicollinearity, heteroscedasticity, and autocorrelation. If the model passes the classical assumption test, it can be considered a good regression model (Basuki, 2017).

RESULTS

Panel Regression Model Selection

Next, conduct tests to determine which model is the best among CEM, FEM, and REM in estimating panel data.

a. Chow Test

Used to choose the best model between the Common Effect Model and the Fixed Effect Model. Based on the Chow Test results, both the Cross Section F and Chi-square probability values are 0.0000, which is smaller than 0.05. This indicates that H0 is rejected and H1 is accepted, so the Fixed Effect Model is the best model in this test.

b. Hausman Test

Used to select the best model between the Fixed Effect Model and the Random Effect Model. Based on the Hausman Test results, the Cross Section probability value is 0.0371, which is smaller than 0.05. This indicates that H₀ is rejected and H₁ is accepted, so the Fixed Effect Model is the best model in this test.

c. Lagrange Multiplier Test

Used to select the best model between the Common Effect Model and Random Effect Model estimation models. Based on the Lagrange Multiplier Test results, the One-Sided Cross Section output value in the Breusch Pagan column is 0.0000, where the number is smaller than 0.05. This indicates that H₀ is accepted and H₁ is rejected, so the Random Effect Model is selected. However, because in the previous test the Fixed Effect Model was selected, the LM Test results are irrelevant. Therefore, the FEM model is the most appropriate to use in this study.

Panel Data Regression Equation

From the test results above, the best method for this research is the Fixed Effect Model (FEM). The results of the calculation using panel data regression are as follows:

Table 2.*Results of Panel Data Regression Analysis*

Variable	CEM	FEM	REM
Constant	0.040362	-0.139454	-0.022611
Population	-0.008431 (0.005036)	-0.003206 (0.005065)	-0.004319 (0.004338)
Health	0.000338 (0.000372)	0.000317 (0.000376)	0.000326 (0.000295)
Education	-0.001436 (0.000554)	-0.000232 (0.001343)	-0.000463 (0.000777)
Human Development	0.005816 (0.001177)	0.007189 (0.007477)	0.005645 (0.001832)
Urbanitation	-3.25E-05 (1.09E-05)	4.73E-05*** (1.74E-05)	7.75E-06 (1.31E-05)
Income per Capita	-6.69E-08 (6.29E08)	-2.98E07 (8.91E-07)	-2.80E-08 (1.07E-07)
Wages	-6.05E-09 (5.63E-09)	-9.75E-12 (1.69E-08)	-1.20E-09 (7.73E-09)
Unemployment	0.003128 (0.001375)	0.000477 (0.001252)	0.001387 (0.001132)
R-squared	0.366175	0.756431	0.143684
F-statistic	9.099128	9.134163	2.642743

Notes: Standard Error in parentheses

*** p

Source: data processed with E-views

Classic Assumption Test

Next is to test the model with classical assumptions, which include Normality, Multicollinearity, Heteroscedasticity, and Autocorrelation tests.

a. Normality Test

The normality test tests whether the variables in the regression are normally distributed. In this study using the Jarque-Bera test. It was found that the

probability result was 0.065840, where this figure was greater than 0.05 so it was stated that the data in the study was normally distributed.

Table 3.
Normality Test Results

Jarque-Bera	5.441044
Probability	0.065840

Source: data processed with E-views

b. Multicollinearity Test

The multicollinearity test tests whether there is a correlation between the independent variables in the regression model. From the test results, no correlation coefficient value is more than 0.80. This indicates the absence of multicollinearity in this regression model.

Table 4.
Multicollinearity Test Results

	Popula tion	Health	Educat ion	Huma n Devel opmen t	Urbani tation	Incom e per Capita	Wages	Unem ploym ent
Populatio n	1.0000 00	- 0.0657 48	0.0947 83	0.2388 91	- 0.3724 72	0.3126 79	0.4467 65	0.1699 50
Health	- 0.0657 4	1.0000 00	- 0.0203 60	- 0.1234 64	0.0535 09	- 0.0490 77	- 0.0622 46	- 0.0770 08
Educatio n	0.0947 83	- 0.0203 60	1.0000 00	0.6336 61	- 0.4925 28	- 0.1145 20	- 0.0008 28	0.0226 55
Human Develop ment	0.2388 91	- 0.1234 64	0.6336 61	1.0000 00	- 0.5660 03	0.2937 14	0.5509 85	0.1132 06
Urbanitat ion	- 0.3724 72	0.0535 09	- 0.4925 28	- 0.5660 03	1.0000 00	- 0.2785 36	- 0.4373 70	- 0.2596 78
Income per Capita	0.3126 79	- 0.0490 77	- 0.1145 077	0.2937 14	- 0.2785 36	1.0000 00	0.6477 16	0.2577 34
Wages	0.4467 65	- 0.0622 46	- 0.0008 28	0.5509 85	- 0.4272 70	0.6477 16	1.0000 00	0.3152 30
Unemplo yment	0.1699 50	- 0.0770 08	0.0226 55	0.1132 06	- 0.2596 78	0.2577 34	0.3152 30	1.0000 00

Source: data processed with E-views

c. Heteroscedasticity Test

The heteroscedasticity test tests whether there is a difference in the regression variance of the residuals from one observation to another. If there are different variants, then the data has a heteroscedasticity problem. Detection uses the Glesjer Test. Based on the calculation results, it is known that the probability values of the eight variables are all more than 0.05. This indicates the absence of heteroscedasticity in this regression model.

Table 5.
Heteroscedasticity Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	-0.189038	0.238858	-0.791423	0.4306
Population Growth rate	0.000740	0.002522	0.293274	0.7699
Percentage of population with health complaints	0.000220	0.000187	1.176788	0.2421
Net enrollment rate in senior high school	-0.000803	0.000669	-1.200221	0.2329
Human development index	0.003934	0.003724	1.056482	0.2933
Number of people per square kilometer	1.42E-05	8.69E-06	1.638669	0.1044
Gross regional domestoc product	-5.45E-07	4.44E-07	-1.228500	0.2221
Regional minimum wage	-2.28E-09	8.42E-09	-0.270669	0.7872
Open unemployment rate	-0.000406	0.000624	-0.651687	0.5161

Source: data processed with E-views

d. Autocorrelation Test

Figure 2.
Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.514682	Prob. F(20,106)	0.0913
Obs*R-squared	30.00610	Prob. Chi-Square(20)	0.0698

The autocorrelation test tests whether in the model there is a correlation between confounding errors in period t-1 (previous). The test uses the LM (Breusch-Godfrey) test. Based on the calculation results, it is known that the Chi-Square probability value is 0.0698 so that it is more than 0.05. This indicates the absence of autocorrelation in this regression model.

Panel Data Regression Model Interpretation

Based on the results of the panel data regression analysis that has been carried out, the equation model formed is as follows:

$$Y = -0.139454119438 - 0.00320638027377 * X1 + 0.000316887969023 * X2 - 0.000232085752076 * X3 + 0.00718895504266 * X4 + 4.73452333038e-05 * X5 - 2.98163053865e-07 * X6 - 9.74765479029e-12 * X7 + 0.000476886908101 * X8$$

The constant value is -0.1395 indicating that without the independent variable, income inequality will decrease by -0.1395.

The coefficient of the population variable is -0.0032, indicating that every one unit increase in the value of population represented by the population growth rate will reduce income inequality by 0.0032.

The coefficient of the health variable is 0.0003 indicating that every one unit increase in the value of health represented by the percentage of the population with health complaints during the last month will increase income inequality by 0.0003.

The coefficient of education variable is -0.0002 indicating that every one unit increase in the value of education represented by the net enrollment rate of senior high school will reduce income inequality by 0.0002.

The coefficient of the human development variable is 0.0072 indicating that every one unit increase in the value of human development represented by the Human Development Index will increase income inequality by 0.0072.

The coefficient of urbanization variable is 4.7345 indicating that every one unit increase in the value of urbanization represented by Number of People Per Square Kilometer will increase income inequality by 4.7345.

The coefficient of the per capita income variable is -2.9816 indicating that every one unit increase in the value of per capita income represented by Gross Regional Domestic Product per Capita will reduce income inequality by 2.9816.

The coefficient of the unemployment variable is 0.0005, indicating that every one unit increase in the value of unemployment represented by the Open Unemployment Rate will increase income inequality by 0.0005.

Hypothesis Test

Individual Significance Test T

As a determinant of whether the independent variable partially has a significant effect on the dependent variable. The results of the T test calculation are as follows:

Table 6.

T Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	-0.129454	0.479622	-0.290758	0.7718
Population Growth Rate	-0.003206	0.005065	-0.633048	0.5281
Percentage of Population with Health Complaints	0.000317	0.000376	0.843291	0.4011
Net Enrollment Rate in Senior High School	-0.000232	0.001343	-0.172793	0.8632
Human Development Index	0.007189	0.007477	0.961413	0.3387
Number of People Per Square Kilometer	4.74E-05	1.84E-05	2.714671	0.0078
Gross Regional Domestic Product	-2.98E-07	8.91E-07	-0.334684	0.7386
Regional Minimum Wage	-9.75E-12	1.69E-08	-0.000576	0.9995
Open Unemployment Rate	0.000477	0.001252	0.380872	0.7041

Source: data processed with E-views

The population variable has a probability of 0.5281 which is greater than 0.05 with a negative coefficient. Population has no significant effect and shows a negative correlation with income inequality. This means that every 1% increase in the population variable will reduce income inequality by 0.0032 units.

The health variable has a probability of 0.4011 which is greater than 0.05 with a positive coefficient. Health does not have a significant effect and shows a positive correlation with income inequality. This means that every 1% increase in the health variable will increase income inequality by 0.0003 units.

The education variable has a probability of 0.8632 which is greater than 0.05 with a negative coefficient. Education has no significant effect and shows a negative correlation with income inequality. This means that every 1% increase in the education variable will reduce income inequality by 0.0002 units.

The human development variable has a probability of 0.387 which is greater than 0.05 with a positive coefficient. Human development does not have a significant effect and shows a positive correlation with income inequality. This means that every 1% increase in the human development variable will increase income inequality by 0.0003 units.

The urbanization variable has a probability of 0.0078 which is less than 0.05 with a positive coefficient. Urbanization has a significant effect and shows a positive correlation with income inequality. This means that every 1% increase in the health variable will increase income inequality by 0.0000473 units.

The per capita income variable has a probability of 0.7386 which is greater than 0.05 with a negative coefficient. Per capita income has no significant effect and shows a negative correlation with income inequality. This means that every 1% increase in the per capita income variable will reduce income inequality by 0.000000298 units.

The wage variable has a probability of 0.9995 which is greater than 0.05 with a negative coefficient. Wages have no significant effect and show a negative correlation with income inequality. This means that every 1% increase in the wage variable will reduce income inequality by 0.000000298 units.

The unemployment variable has a probability of 0.7041 which is greater than 0.05 with a positive coefficient. Unemployment has no significant effect and shows a positive correlation with income inequality. This means that every 1% increase in the unemployment variable will increase income inequality by 0.0005 units.

Simultaneous Test (F Tests)

As a determinant of how the overall effect of all independent variables, in this case the social variables, on income inequality together.

Table 7.

F Tests Results

F-statistic	9.134163
Prob (F-statistic)	0.000000

Source: data processed with E-views

To see the effect, look at the probability value. If the value is greater than 0.05, then the social variables simultaneously have a significant effect on income inequality.

The calculated F value of 9.134163 is greater than the F table of 2.082449914 and the sig value of 0.000000 is smaller than 0.05. This indicates that all social variables have a significant influence on income inequality.

Determination Coefficient Test (R-square)

As a measure of the extent to which the independent variable is able to explain the dependent variable in the model used.

Table 8.

R-Square Test Results

R-squared	0.756431
Adjusted R-squared	0.673618

Source: data processed with E-views

From the table above, it can be seen that the R-square is 0.756431 or 75.64 percent. It is concluded that the population, health, education, human development, urbanization, per capita income, wages, and unemployment variables in the regression model can explain the income inequality variable by 75.64 percent while the remaining 24.36 percent is explained by other variables outside the model.

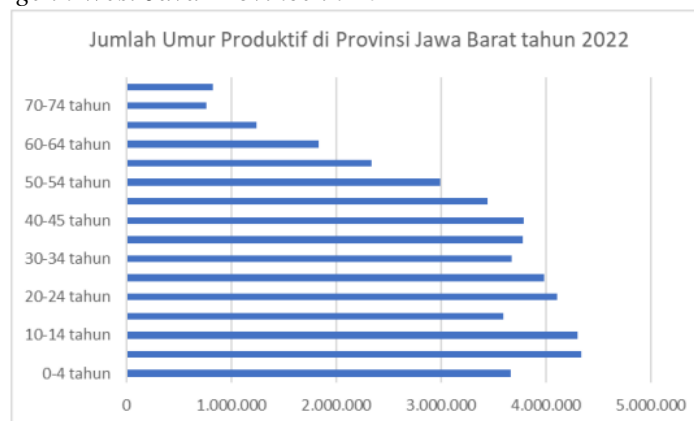
DISCUSSION

Population and Income Inequality

Based on the results of data analysis, population has no significant effect and shows a negative relationship with income inequality. These results indicate that this relationship is not in line with the hypothesis and theory in this study. The population growth rate reflects the increase in population in a certain period of time due to the high birth rate. The increase in the growth rate reduces regional income (Umayati, 2014). According to Kuznets, an increase in population due to a decrease in the death rate without a decrease in the birth rate can worsen inequality.

Figure 3.

Total Productive Age in West Java Province in 2022



Source: Katadata.co.id

According to data from the Badan Pusat Statistik (BPS), in the period 2018 to 2022 the population growth rate in West Java Province continued to slow down. In 2022, the growth rate was 1.33. This figure is lower than the previous year which amounted to 1.41. Despite the slowdown, this insignificant result is due to the dominance of the productive age group in the population. Based on demographic data from Katadata.co.id (2022), 68.9% or around 33.5 million West Java residents are of productive age. This productive age group, if managed properly, can be an important capital to accelerate

development. According to Collin Clark in Jhingan (2018), although population growth creates economic difficulties, communities with strong enough energy can change their methods, so that in the long run they can become more advanced and productive.

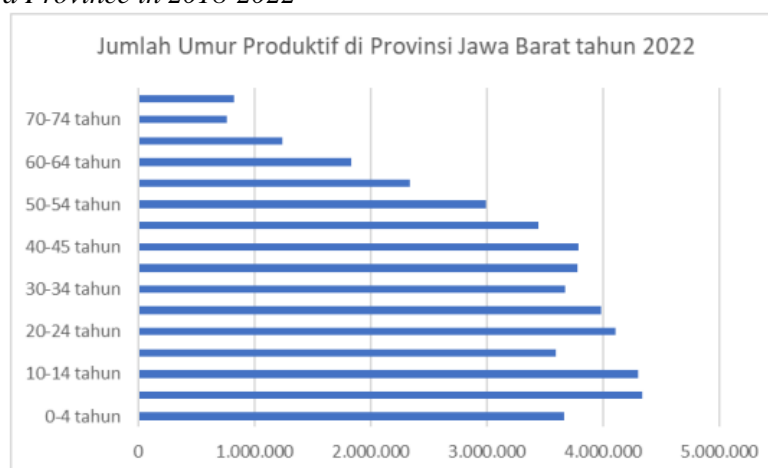
Research by Arfian et al (2022) supports the statement that the relationship between population and income inequality has no effect, where it is stated that a high population is not a problem as long as the productivity of the population is also high, so there is no inequality in income distribution. Research by Nadhifah et al (2021) also revealed similar results, namely that income inequality is not influenced by population because an increase in population is accompanied by an increase in productivity.

Health and Income Inequality

Based on the results of the data analysis, health has no significant effect and shows a positive relationship with income inequality. The percentage of the population with health complaints is data derived from household members who experience health complaints. Data from the Badan Pusat Statistik (BPS) shows that in the last five years, from 2018 to 2022, the number of people with health complaints in West Java Province has continued to increase. In 2022, around 45 percent of the population experienced health complaints, up from 28 percent in 2018 (BPS, 2022).

Figure 4.

GRDP of West Java Province in 2018-2022



Source: Badan Pusat Statistik (BPS)

Although the number of people experiencing health complaints is increasing, the results show that this does not have a significant effect on income inequality in West Java. Productivity in the region, as seen in the Gross Regional Domestic Product (GRDP) data continues to increase. In 2022, GRDP reached its highest level in the last five years, at IDR 1,590 billion. This increase shows that the amount of goods and services produced in West Java Province is increasing thanks to increased economic activity. In addition, increasing health complaints do not hamper productivity because West Java Province has more people of productive age than non-productive age.

Education and Income Inequality

Table 9.
Average Years of Schooling 2018-2022

Years	Average Years of Schooling (Years)
2018	8,15
2019	8,37
2020	8,55
2021	8,61
2022	8,78

Source: Badan Pusat Statistik (BPS)

Based on the results of the data analysis, education has no significant effect and shows a negative relationship with income inequality. In West Java Province, most of the population has an education level up to junior high school. The data from the Central Bureau of Statistics (BPS) shows that for five years, the average years of schooling for people in West Java Province is 8 years. This indicates that the majority of people have reached an adequate level of basic education. As the majority of the population reaches this level of education, income differences across communities are not much affected by education as variations in higher levels of education are not significant enough to create a large difference in income. Thus, although education is usually considered an important factor in determining one's income, since almost everyone has reached the same level of education, i.e. junior high school, education does not play a major role in causing or reducing income inequality.

Human Development and Income Inequality

Based on the results of data analysis, human development has no significant effect and shows a positive relationship with income inequality. Although the Human Development Index (HDI) is increasing and shows that human quality is quite good, it does not affect income inequality. Inequality remains due to other factors, such as unequal employment opportunities and lack of skills. For example, Cianjur Regency still has a low HDI because the local government pays less attention to education issues, so the school enrollment rate in this area is still relatively low.

The insignificant relationship between human development and income inequality is in line with research by Sulistyaningrum et al (2022) who found that the Human Development Index does not affect income inequality. Increased income is not always directly proportional to increased quality of life or human development. As a result, there are differences in the quality of human resources in various regions. This shows that even though income in a region increases, education, health, and community welfare do not always improve. This difference causes some regions to develop faster and more advanced, while other regions are left behind and less developed.

Urbanization and Income Inequality

Based on the results of the data analysis, urbanization has a significant effect and shows a positive relationship with income inequality. The number of people per square kilometer or population density indicates the number of people occupying one square kilometer of area. This is an indicator of the different resource conditions in a region. Better-off areas tend to be more densely populated, such as large cities.

In Todaro's migration model theory, the movement of people from villages to cities is based on rational considerations regarding the relative benefits of migration. The difference in wages between cities and villages and job opportunities are the main factors that keep migration happening. Bandung City is the most densely populated area in West Java Province. This is because Bandung is the capital of the province, making it the center of economic activity as well. Because Bandung City is the center of economic activity, many people who come from rural areas choose to depend on life in Bandung City. Research by Restulilah et al (2020) shows that increased urbanization has an impact on increasing income inequality. Better infrastructure, superior education and health services, and higher wages in urban areas trigger people to settle in cities to improve their welfare.

The level of inequality in urban areas can also be exacerbated if economic and employment opportunities are not evenly distributed. According to Kuznets, population movement to larger cities increases urban income inequality. This is because newcomers are often in low-income positions while high earners are at the top of the economy.

Per Capita Income and Income Inequality

Based on the results of data analysis, per capita income has no significant effect and shows a negative relationship with income inequality. West Java Province has 27 districts/cities with different economic, demographic, and natural resource characteristics. Although per capita income is high, in this case Gross Regional Domestic Product is increasing, income distribution has not changed significantly. Income inequality remains high, making West Java the province with the second highest Gini Ratio in Java. High per capita income is only dominated by a few districts/cities such as Bekasi with the highest GRDP of 265 million, while Banjar City has the lowest GRDP of 3 million. Economic growth from 2018 to 2022 did not reduce inequality, making Kuznets' theory irrelevant.

Research by Mukhlis et al. (2018) shows that economic growth does not have a significant relationship with inequality. Although economic growth is expected to improve welfare, without proper regulation, inequality can actually increase. The right strategy is needed to improve people's welfare evenly. Research by Nadya et al. (2019) also found that economic growth does not affect income inequality because economic development is mostly enjoyed by the rich, so it has little effect on equitable income distribution.

Wages and Income Inequality

Based on the results of data analysis, wages have no significant effect and show a negative relationship with income inequality. The Regency/City Minimum Wage (UMK) in West Java Province has an insignificant and negative effect on income inequality. This is due to the non-uniform determination of the UMK, which is adjusted to the needs of each region because West Java is a large and diverse region. Government policies that do not support income redistribution also contribute to high inequality, as wages do not consider living needs and dependents. For example, the minimum wage in 11 districts has not increased, so workers are experiencing difficulties. This condition is not in line with Kuznets' theory, which states that wages can reduce inequality.

Nangarumba's research (2015) states that the minimum wage has a negative and insignificant effect on income distribution. The minimum wage does not play an important role in reducing income distribution inequality. The negative effect indicates

that an increase in the minimum wage increases people's purchasing power and consumption, increases demand for goods and services, and ultimately improves the economy thereby reducing inequality (Anshari et al., 2018).

Unemployment and Income Inequality

Based on the results of data analysis, unemployment has no significant effect and shows a negative relationship with income inequality. The Open Unemployment Rate in West Java Province continues to decline every year. In August 2022, the open unemployment rate in West Java was 8.31%, a decrease of 1.51% from the previous year of 9.82%. However, this decline is not as fast as other provinces. Although there are many job opportunities, there are also many enthusiasts. The decrease in unemployment was not followed by a decrease in income inequality, instead inequality continued to increase. This contradicts Todaro's migration theory, which states that unemployment increases due to wage inequality between villages and cities.

The insignificant relationship between unemployment and income inequality is in line with the study by Hindrun et al. (2019), which shows that unemployment does not affect income inequality due to the existence of social assistance from the government that eases the burden on the community. Research by Istikharoh et al. (2018) also found that unemployment does not significantly affect income inequality due to the large number of informal sectors that absorb labor.

CONCLUSION

From the results of data processing and discussion of the research between the independent variables and the dependent variable, it can be concluded that the variables of population, health, education, human development, per capita income, wages, and unemployment have no significant effect on income inequality. This indicates that increasing or decreasing these variables will not affect the inequality that occurs in West Java Province. In contrast, the urbanization variable shows that it has a positive and significant effect on income inequality. This indicates that an increase in the level of urbanization in West Java will lead to an increase in income inequality. The high level of urbanization, especially in Bandung City, which is the capital of the province, is due to the fact that many people choose to live in Bandung City, which is also the center of economic activity. When population density is higher, it indicates that more people are moving to the area to settle down. Increased urbanization eventually leads to an increase in income inequality (Restulilah et al, 2020).

Implication

Based on this, the researcher provides several suggestions where the research results can be a focus for the government to be able to formulate policies that are in accordance with the conditions of the problem of high levels of income inequality, namely regarding urbanization. The policy can be in the form of how to reduce urbanization that occurs in one region and develop other areas that have potential so that local people can take advantage of the potential in their respective regions.

Limitation and Future Direction

Finally, future research could consider adding other social variables related to income inequality.

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