

ANALYSIS OF FACTORS INFLUENCING REGIONAL DISPARITIES IN CENTRAL JAVA PROVINCE

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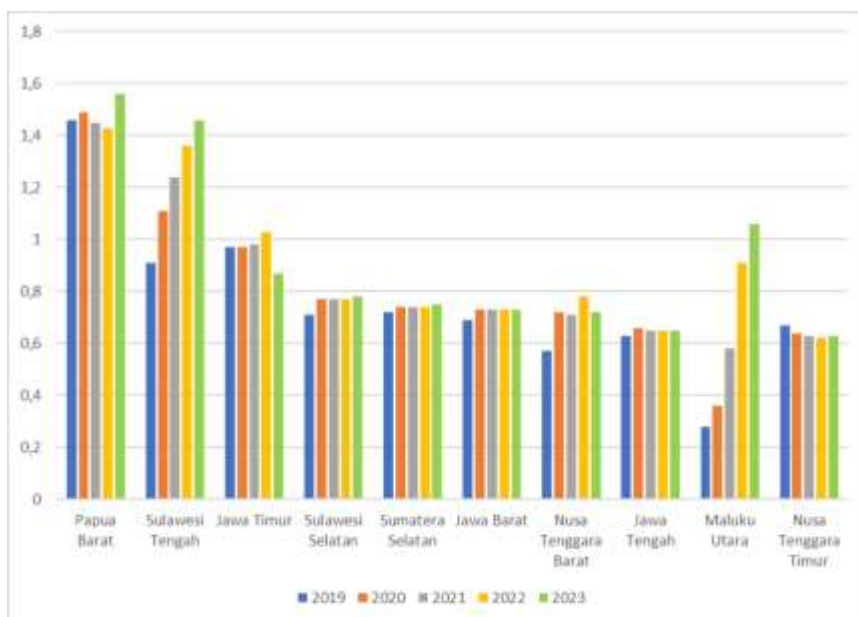
Abstract

Regional inequality refers to a condition where there are disparities in the level of development between one region and another. This phenomenon remains a major challenge in achieving economic equity in Indonesia, including in Central Java Province, which experiences a relatively high level of regional inequality. This study aims to analyze the factors influencing regional inequality in Central Java Province during the period 2005–2023. The dependent variable in this study is regional inequality, measured using the Williamson Index. The independent variables include agglomeration, the gap in regional independence ratio, the gap in general allocation funds, the gap in the human development index, and the labor force gap. The analytical tool used is multiple linear regression, and the data employed is secondary data. Based on the study's results, it was found that the variables of agglomeration, regional independence ratio gap, general allocation fund gap, human development index gap, and labor force gap collectively have a significant effect on regional inequality, with an explanatory power of 53.8%. Partially, the labor force gap variable has a significant effect on regional inequality, while the agglomeration, regional independence ratio gap, general allocation fund gap, and human development index gap variables were found to have no significant individual effect. It is expected that this study can assist the government in developing strategic planning for regional development, particularly in areas that are still underdeveloped.

Keywords: Agglomeration, Regional Independence Ratio Gap, General Allocation Fund Gap, Human Development Index Gap, Labor Force Gap

INTRODUCTION

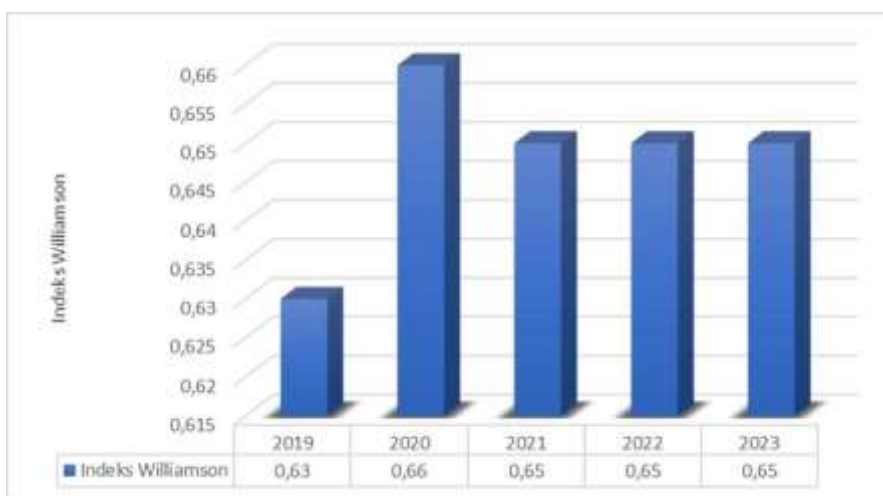
Regional inequality is a condition characterized by differences in the level of development between regions. These disparities can occur across various aspects, including economic, social, and infrastructure development. According to Aprianoor and Muktiali (2015), regional inequality is a gap that arises not only from differences in income distribution among communities but also from disparities in development between regions within a country. If left unaddressed, regional inequality can lead to negative consequences such as economic inefficiency, social and political instability, and social jealousy, as certain regions may feel neglected (Zusanti et al., 2020). Indonesia, as a developing country, frequently faces issues related to regional development disparities. These disparities remain quite significant. This can be seen in Figure 1.



Source: Badan Pusat Statistik, 2024

Figure 1. Highest Regional Inequality in Indonesia 2019-2023

Based on Figure 1, ten provinces in Indonesia exhibit the highest levels of regional inequality compared to other provinces. A closer look reveals that provinces on the island of Java continue to dominate the inequality rankings. One of the provinces on Java that ranks among the top ten and is worth examining is Central Java Province.



Source: Badan Pusat Statistik, 2024

Figure 2. Regional Disparities in Central Java Province 2019-2023

Based on Figure 1.2, it can be seen that over the five years from 2019 to 2023, the Williamson Index value for Central Java Province consistently remained above 0.5. This indicates that regional inequality in Central Java is classified as high. Central Java is an interesting case to examine because this level of inequality contradicts the vision and mission outlined in the 2005–2025 Central Java Provincial Development Plan, which states that the provincial government aims to promote equitable and harmonious development across all regions to enhance regional economic competitiveness and improve community welfare, along with equitable infrastructure development (Central Java Provincial Government, 2008).

Previous studies have analyzed various factors influencing inter-regional inequality. A study conducted in East Java by Rahmawati and Yuniarti (2020) examined the effect of agglomeration on inter-regional inequality. Research by Suryantini et al. (2022) investigated the influence of the Regional Independence Ratio on inequality in Bali Province. In Jambi Province, Sidik et al. (2020) analyzed the impact of the General Allocation Fund (GAF) on inter-regional inequality. Additionally, Adriana (2024) explored the effect of the Human Development Index (HDI) on inequality in Central Java, while Yusniar (2019) studied the influence of the labor force variable on inter-regional inequality across Java Island.

Unlike previous studies, this research presents a novelty by focusing on a different location, namely Central Java Province. Additionally, the independent variables used in this study differ from those in prior research. While previous studies typically relied on absolute data at the provincial level, this study provides a more detailed analysis of disparities between regencies and cities within Central Java Province. Furthermore, there is novelty in the inclusion of independent variables such as agglomeration and the regional autonomy ratio, which have been relatively underexplored in earlier studies.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

Regional disparities in Indonesia are still common, especially in the provinces of Java, which are the center of economic activity. One of the provinces with high regional disparities is Central Java. The high level of disparity in Central Java can be seen from its Williamson index, which is always above 0.5 every year. Regional inequality resulting from uneven development is often influenced by the concentration of development in certain areas, as explained in the growth pole theory. According to this theory, growth and development do not occur evenly across all regions but are limited to specific areas with varying degrees of intensity (Marhamah et al., 2023).

In addition, other theories can explain inter-regional inequality, such as the cumulative causation theory. This theory emphasizes that the minimal role of the government in the market economy system can cause inter-regional inequality (Nurjihadi, 2016). This occurs because in a market economy system, investors will prefer to invest in regions that can generate high profits. Conversely, underdeveloped regions have characteristics that are opposite to relatively developed regions, such as a lack of access to adequate infrastructure, resulting in minimal capital inflows.

Regional inequality can be caused by several important factors. First, agglomeration explains the concentration of economic activity in certain regions. Second, the gap in regional independence ratios, where differences in independence ratios between regions indicate differences in the fiscal capacity of those regions. Third, disparities in the use of general allocation funds (DAU), which are sometimes not utilized optimally and appropriately, and their distribution is sometimes not proportional between regions. Fourth, disparities in the human development index (HDI), which reflects the level of human development based on education, health, and science in a region. Fifth, disparities in the number of workers in each region and the lack of skilled workers, which are not balanced by the availability of adequate jobs, will cause greater disparities between regions. Based on the literature review and the above explanation, the following hypothesis can be formulated:

H₁: Agglomeration, Regional Self-Reliance Ratio Gap, General Allocation Fund (GAF) Gap, Human Development Index (HDI) Gap, and Labor Force Gap collectively have a positive effect on Inter-Regional Inequality in Central Java Province.

H₂: Agglomeration positively influences inter-regional inequality in Central Java Province.

H₃: Regional Independence Ratio Gap positively influences Interregional Inequality in Central Java Province.

H₄: General Allocation Fund Gap positively influences Interregional Inequality in Central Java Province.

H₅: Human Development Index Gap positively influences Interregional Inequality in Central Java Province.

RESEARCH METHODS

This study uses a quantitative approach conducted in Central Java with the district/city as the unit of analysis in Central Java. This study uses secondary data in the form of time series data covering a period of 19 years, from 2005 to 2023. The data obtained in this study were sourced from the Directorate General of Fiscal Balance (DJPK) and the Central Statistics Agency (BPS). The data collection technique used was documentation.

The data analysis technique used in this study is multiple linear regression analysis, conducted using the EViews 12 application. In addition, a normality test is performed to determine whether the residuals in the regression model are normally distributed. The normality test is conducted using the Jarque-Bera (JB) test along with a histogram. Several classical assumption tests are also conducted, including tests for multicollinearity, heteroscedasticity, and autocorrelation. Once the model passes the classical assumption tests, further analysis is conducted by calculating the coefficient of determination (R^2) and performing hypothesis tests, such as the F-test and t-test.

The regression model in this study can be written as follows:

$$KW_t = \alpha + \beta_1 AG_t + \beta_2 RKD_t + \beta_3 DAU_t + \beta_4 IPM_t + \beta_5 AK_t + e. \quad (1)$$

The dependent variable used in this study is interregional inequality (KW), measured using the Williamson Index. The independent variables used to identify the factors influencing interregional inequality are: agglomeration (AG), measured in index units; the regional autonomy ratio gap (RKD), measured as a percentage (%); the general allocation fund gap (DAU), measured in Indonesian Rupiah (Rp); the human development index gap (IPM), measured in index units; and the labor force gap (AK), measured in number of people.

RESULTS AND DISCUSSION

Table 1. Results of Multiple Linear Regression Analysis

Variable	Coefficient	t-Statistic	Prob.
C	0,597446	30,24799	0,0000
AG	-0,000361	-0,035569	0,9722
RKD	-0,000690	-0,229597	0,8220
DAU	-7,16E-11	-1,047983	0,3137
IPM	0,001106	0,266113	0,7943
AK	3,04E-07	3,578608	0,0034
R-squared	0,538295	Durbin-Watson stat	1,839895
Adjusted R-squared	0,360716		
F-statistic	3,031296		
Prob(F-statistic)	0,049714		

Source: Eviews 12 estimation results (processed)

Based on Table 1. the regression equation is as follows:

$$KW_t = 0,597446 - 0,000361AG_t - 0,000690RKD_t - 0,0000000000716DAU_t + 0,001106IPM_t + 0,000000304AK_t \quad (2)$$

From the above equation, the following interpretations can be made:

- The constant value is 0,597446, meaning that if the variables Agglomeration, Regional Independence Ratio Gap, General Allocation Fund Gap, Human Development Index Gap, and Labor Force Gap remain constant (*ceteris paribus*), then inter-regional inequality will have a value of 0,597446 in index units.

- b. The regression coefficient for Agglomeration is -0,000361. This negative value indicates that an increase in agglomeration is associated with a decrease in inter-regional inequality.
- c. The regression coefficient for the Regional Independence Ratio Gap is -0,000690, indicating that an increase in this gap leads to a decrease in inter-regional inequality.
- d. The regression coefficient for the General Allocation Fund Gap is -0,0000000000716. This suggests that as the gap in general allocation funds increases, the level of inter-regional inequality tends to decrease, although the effect is very small.
- e. The regression coefficient for the Human Development Index (HDI) Gap is 0.001106. This positive value indicates that greater disparities in HDI between regions are associated with higher inter-regional inequality.
- f. The regression coefficient for the Labor Force Gap is 0,000000304, meaning that an increase in the labor force gap is associated with an increase in inter-regional inequality.

Based on the results of normality detection performed on this model, it can be seen that the probability value shows a figure of $0,718708 > 0,05$ ($\alpha=5\%$), which means that the data in this study shows normality detection results that are statistically normally distributed. Furthermore, several classical assumption tests were conducted in this study, such as multicollinearity detection, which resulted in VIF (Variance Inflation Factors) values for the variables of agglomeration, regional independence ratio gap, general allocation fund gap, human development index gap, and labor force gap are < 10 , so it can be concluded that the regression model is free from multicollinearity issues statistically. The heteroskedasticity detection conducted in this study revealed that the probability values of the variables for agglomeration, regional independence ratio gap, general allocation fund gap, human development index gap, and labor force gap $> 0,05$ ($\alpha=5\%$), indicating that the regression model in this study is free from the problem of heteroscedasticity statistically. The detection of autocorrelation in this study resulted in a Durbin Watson value of 1,839895, meaning that ($dL < DW < dU$), so the model in this study falls into the no decision category. This cannot be conclusively determined regarding the issue of autocorrelation in the regression model of this study, so further testing is required using SPSS software through a run test (Ghozali, 2018). The results of the run test show an Asymp. Sig. (2-tailed) value of $1,000 > 0,05$, indicating that the regression model in this study is free from autocorrelation issues statistically.

The results of the regression analysis on the model used in this study show an R-squared value of 0,538295, which means that the variables of agglomeration, regional independence ratio gap, general allocation fund gap, human development index gap, and labor force gap can explain 53,8% of the interregional inequality in Central Java Province. The F-test conducted can be seen from the Prob. (F-statistic) value in Table 1, which shows a value of $0,049714 < 0,05$ ($\alpha=5\%$), so H_1 is not rejected, and it can be stated that together, the variables of agglomeration, regional independence ratio gap, General Allocation Fund Gap, Human Development Index Gap, and Labor Force Gap have a significant influence on the Inter-regional Inequality variable. These findings reinforce the research hypothesis and are consistent with the studies conducted by Rahmawati and Yuniarti (2020), Suryantini et al. (2022), Sidik et al. (2020), and Yusniar (2019), which found that the variables of agglomeration, regional independence ratio, general allocation funds, human development index, and labor force have a positive and significant effect on interregional inequality.

The statistical t-test based on the regression analysis results in Table 1 shows that the Agglomeration variable has a t-value of $|-0,035569|$ and a t-table value of 1,77093, so that t-value $<$ t-table, therefore H_2 is rejected. Based on these results, it is concluded that Agglomeration does not have a significant effect on Interregional Inequality in Central Java Province. The hypothesis stating that Agglomeration has a positive and significant effect on Interregional Inequality is rejected. The results of this study are consistent with the findings of Kiton (2019) and Zahara et al. (2021), which state that agglomeration in a region does not always have a significant effect on interregional

inequality. Theoretically, this is supported by the neoclassical convergence theory, which explains that when a region already has a high accumulation of capital, additional investment will yield diminishing returns. Conversely, in regions that still lack capital, investment tends to generate much higher returns. Assuming that the same preferences and technologies apply across regions, less developed areas tend to grow faster than more advanced ones. This is also in line with the views of Myrdal and Pred (1957), who stated that if agglomeration in a region has reached its optimal scale, further expansion may negatively impact the agglomerated region.

Next is the variable Regional Independence Ratio Gap, which has a t-value of $|-0,229597|$ and a t-table value of 1,77093, resulting in t-value < t-table, so H_3 is rejected. Based on these results, it is stated that the Regional Independence Ratio Gap does not have a significant effect on Interregional Inequality. It is concluded that the hypothesis stating that the Regional Independence Ratio Gap has a positive and significant effect on Interregional Inequality is rejected. The results of this study are consistent with the research by Azani et al. (2025), which states that a region's independence ratio does not affect interregional inequality. These findings align with the theory of fiscal decentralization, which emphasizes the importance of fiscal transfers from the central government to regional governments as a balancing mechanism. Such transfers ensure that regions with low fiscal autonomy still possess sufficient capacity to provide basic public services. Therefore, disparities in regional autonomy ratios do not automatically lead to interregional inequality, as the fiscal transfer system serves to mitigate such imbalances.

The General Allocation Fund Gap variable has a t-value of $|-1,047983|$ and a t-table value of 1,77093, so that t-value < t-table, therefore H_4 is rejected. Based on these results, it is stated that the General Allocation Fund Gap does not have a significant effect on Interregional Inequality. It is concluded that the hypothesis stating that the General Allocation Fund Gap has a positive and significant effect on Interregional Inequality is rejected. The results of this study are consistent with the research by Oktaviani et al. (2017) and Adriana (2024), which state that the amount of general allocation funds does not affect interregional inequality. These findings can be explained by the theory of comparative advantage, which suggests that regions with comparative advantages can enhance their economic independence by developing their leading sectors. In other words, even if there are disparities in the amount of GAF, each region still possesses the fundamental capacity to leverage its comparative advantages.

The Human Development Index Gap variable has a t-value of 0,266113 and a t-table value of 1,77093, so t-value < t-table; therefore, H_5 is rejected. Based on these results, it is stated that the Human Development Index Gap does not have a significant effect on Interregional Inequality. It is concluded that the hypothesis stating that the Human Development Index Gap has a positive and significant effect on Interregional Inequality is rejected. The results of this study are consistent with the research by Juliana and Soelistyo (2019), which states that the Human Development Index (HDI) does not affect interregional inequality. Theoretically, this is supported by endogenous growth theory, which argues that a region's economic condition is not solely determined by initial factors such as the HDI but also by the region's ability to enhance internal factors such as education, health, and innovation. Therefore, initial HDI gaps can be addressed through the activation of each region's endogenous potential, leading to natural convergence.

The Labor Force Gap variable has a t-value of 3,578608 and a t-table value of 1,77093, so that t-value > t-table; therefore, H_6 is accepted. Based on these results, it is stated that the Labor Force Gap has a positive and significant effect on Interregional Inequality. It is concluded that the hypothesis stating that the Labor Force Gap has a positive and significant effect on Interregional Inequality is not rejected. The results of this study are in line with Yusniar (2019) and research by Christi and Sbm (2020), which state that the labor force has a positive influence on interregional inequality. The results of this study are consistent with the theory of labor supply and demand, whereby regions with high demand but low labor supply will offer higher wages, attracting productive labor and investment, thereby accelerating the economic growth of the region. Conversely, regions with a labor surplus tend to have low wages, limiting local economic growth.

CONCLUSION

The results of this study indicate that labor force disparities have a significant positive effect on interregional inequality in Central Java Province. In contrast, agglomeration, disparities in the regional self-reliance ratio, disparities in general allocation funds, and disparities in the Human Development Index do not have a significant effect on interregional inequality in the province. The implications of these findings can serve as input, particularly for the central government, provincial authorities, and district/city administrations, in efforts to reduce interregional inequality. Strategies may include improving workforce quality, promoting inclusive interregional economic growth, empowering local economies, creating structured fiscal transfers, and enhancing overall quality of life.

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