

ANALYSIS OF ECONOMIC GROWTH IMPACT ON THE PHENOMENON OF RURAL–URBAN MIGRATION AT JAVA ISLAND

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Abstract

Urbanization represents a major phenomenon in the trajectory of economic development, particularly in developing economies. Over the last two decades, Indonesia has experienced a considerable rise in the proportion of people living in urban areas, especially on the island of Java, which serves as the core of the country's economic activities. This research aims to examine the effect of regional economic growth on rural–urban migration within Java. A quantitative research design was applied using panel data regression covering six provinces at Java during the period 2015–2024. The study analyzed several variables, including regional economic growth, open unemployment rate, and average years of schooling, while income inequality was incorporated as a control variable affecting migration from rural to urban areas. Secondary data were collected from official publications of the Central Bureau of Statistics and processed using a panel regression approach with the Fixed Effect Model (FEM). The empirical results reveal that economic growth significantly and positively affects rural–urban migration in Java. Educational attainment also contributes positively to population mobility, whereas unemployment demonstrates a negative relationship with migration flows to urban regions. These findings suggest that the concentration of economic activities in urban centers acts as a strong pull factor for labor originating from rural areas. Consequently, policies promoting more balanced regional development are necessary to mitigate excessive urbanization pressure in major cities across Java.

Keywords: *Economic Growth, Rural-Urban Migration, Urbanization, Regional Development*

INTRODUCTION

Urbanization refers to a socio-economic transformation marked by a growing share of the population residing in urban areas. This process typically occurs alongside structural changes in the economy, where employment gradually shifts from agriculture toward industrial and service activities (Todaro & Smith, 2021). In developing nations, urbanization is often closely associated with population movements from rural communities to urban centers, a phenomenon widely known as rural–urban migration. Migration between rural and urban regions constitutes an essential component of the development process because it reflects the mobility of labor across regions. According to the theoretical framework proposed by Harris and Todaro (1970), individuals' migration decisions are largely influenced by disparities in expected income between origin and destination areas. When the expected earnings in urban areas exceed those in rural regions, the probability of migration increases.

Indonesia represents one of the countries experiencing a rapid increase in urban population share. Recent estimates indicate that more than half of the Indonesian population currently resides in urban areas, and projections suggest that this proportion will continue to grow in the coming decades (United Nations, 2022). This trend is particularly evident on the island of Java, which functions as the main hub of national economic activity. Java contributes more than half of Indonesia's Gross Domestic Product, making it a major destination for labor mobility from other regions (World Bank, 2023). The concentration of industrial, commercial, and service activities in urban areas has intensified migration flows from rural areas toward large cities. Rural–urban migration is not solely determined by income differences. Various economic and social determinants—including educational attainment, employment opportunities, and regional development disparities—also play a significant role in shaping migration patterns (Lucas, 2015). Regions experiencing rapid economic expansion often attract more migrants due to increased labor demand. Despite its economic benefits, excessive urbanization can generate several socio-economic challenges, including urban congestion, housing shortages, traffic problems, and the emergence of informal settlements (McGee, 2017). Although migration has been widely examined in previous studies, many analyses remain descriptive or focused on limited geographical contexts. Empirical research that specifically investigates the relationship between regional economic growth and rural–urban migration in Java using recent panel data remains relatively limited.

Therefore, this study seeks to analyze the influence of economic growth on migration from rural to urban areas on the island of Java using a panel data regression approach.

LITERATURE REVIEW

Migration and Economic Development

Population migration is a demographic process that is closely connected with economic development dynamics. Within the literature of development economics, migration is commonly interpreted as population movement across regions driven by variations in economic opportunities, living standards, and access to public services and infrastructure. This mobility plays an important role in redistributing labor resources and serves as a mechanism for balancing labor markets across regions (Adepoju, 2020).

Scholarly attention to migration dates back to the nineteenth century. Ravenstein introduced one of the earliest theoretical explanations through the “laws of migration,” which emphasize that migration flows generally occur from less developed areas to regions with stronger economic activities (Ravenstein, 1885). His theory highlights economic incentives as the main drivers of migration decisions.

Contemporary migration theories have expanded this perspective by recognizing that migration is influenced not only by economic considerations but also by social factors, educational opportunities, and development policies. Population mobility therefore reflects broader structural changes occurring within an economy as it progresses toward higher levels of development (Skeldon, 2018).

Structural Transformation and Urbanization

Urbanization is frequently used as an indicator of structural transformation in an economy. Structural transformation occurs when economic activities gradually shift from agriculture toward industrial production and service-based sectors that typically exhibit higher productivity levels. This transition is commonly accompanied by the increasing concentration of economic activities in urban centers (Arsyad, 2022).

Lewis’s dual-sector theory explains that developing economies consist of two primary sectors: a traditional agricultural sector and a modern urban sector (Lewis, 1954). The traditional sector generally exhibits surplus labor and low productivity, whereas the modern sector provides higher productivity and more diversified employment opportunities. The transfer of labor from the traditional sector to the modern sector represents a key mechanism for improving national productivity. Within this framework, rural–urban migration becomes an integral component of the structural transformation associated with economic development.

Empirical studies have demonstrated that urbanization tends to occur in regions experiencing rapid economic growth. Expanding industrial and service sectors increase the demand for labor, which subsequently attracts migrants from other areas (Chen & Fan, 2022). Urban areas also function as centers of innovation, production, and trade, making urbanization a hallmark of economic modernization. Nevertheless, accelerated urban growth may also create various socio-economic challenges such as congestion, inequality, and the proliferation of informal settlements in metropolitan areas (McGee, 2017).

Harris–Todaro Migration Model

One of the most widely recognized frameworks explaining rural–urban migration is the Harris–Todaro model. This model suggests that migration decisions depend not only on wage differences between rural and urban regions but also on the probability of securing employment in the destination area (Harris & Todaro, 1970). Within this framework, individuals evaluate expected income rather than actual wages. Migration will occur when the expected income in urban areas—calculated as the urban wage multiplied by the probability of employment—exceeds the income available in rural regions.

The model also explains the so-called urbanization paradox, where migration to cities continues even when urban unemployment rates are relatively high. Migrants are motivated by the expectation that better employment opportunities will eventually become available in the future. Recent empirical studies confirm that the Harris–Todaro framework remains relevant for understanding migration patterns in developing countries, although additional factors such as the informal economy, housing costs, and access to urban services also influence migration decisions (Fally & Sayre, 2021; Lucas, 2015).

Factors Influencing Rural-Urban Migration

Rural-urban migration is influenced by various interrelated economic and social factors. One major factor is the difference in job opportunities between regions. Urban areas typically offer broader job opportunities than rural areas, particularly in the industrial and service sectors (Lucas, 2015). In addition to job opportunities, education level also

significantly influences population mobility. Individuals with higher levels of education tend to have greater mobility because they possess skills better suited to the needs of the urban labor market. Unemployment rates are also a crucial factor in determining migration decisions. When unemployment rates in urban areas rise, cities can become less attractive as migration destinations become more limited due to limited employment opportunities (ILO, 2022). Furthermore, regional development disparities also contribute to internal migration. Regions experiencing faster economic growth attract labor from other regions due to increased labor demand and higher income opportunities (De Haas, 2010). Recent research also shows that migration is influenced by structural factors such as climate change, global economic transformation, and developments in transportation and communication infrastructure that facilitate population mobility between regions (Cattaneo et al., 2019; van Berkum, 2023).

Migration and Economic Growth

The relationship between migration and economic growth has been a key topic in regional development literature. Migration can serve as a more efficient labor allocation mechanism by allowing workers to move from low-productivity regions to higher-productivity regions. From a regional economic perspective, migration can improve labor market efficiency and support economic growth in destination regions. Migrants typically fill labor shortages in sectors experiencing economic expansion, thereby helping to increase productivity and economic output (De Haas, 2010).

However, migration can also pose development challenges if it occurs uncontrolled. Excessively rapid urbanization can put pressure on urban infrastructure, transportation systems, and public services such as housing, education, and health care (McGee, 2017). Recent empirical research shows that rural-urban migration is a major factor driving urban growth in developing countries. Migration significantly contributes to urban population growth and changes in urban economic structures (Hussein & Osman, 2024).

Internal Migration in Indonesia

In the Indonesian context, rural-urban migration has been an ongoing phenomenon since the beginning of industrialization and national development. The increasingly concentrated process of economic development in urban areas has driven significant migration flows from rural areas to large cities (Hugo, 2014). Java is the center of national economic activity, contributing a significant portion of Indonesia's Gross Domestic Product. The concentration of industrial, trade, and service activities in this region has made Java's major cities the primary destination for internal migration.

Global development data shows that urbanization in developing countries continues to increase along with economic growth and industrialization. By 2022, more than half of the world's population lived in urban areas, and this figure is expected to continue to rise in the coming decades (United Nations, 2022). Furthermore, global development reports indicate that regions with high economic growth rates tend to attract more migrants due to increasing labor demand and better economic opportunities (World Bank, 2023). Thus, rural-urban migration can be understood as part of the dynamics of economic development influenced by various structural factors, including regional economic growth, education, labor market conditions, and development disparities between regions.

METHOD

This research uses a quantitative approach with econometric methods. The research data is secondary data obtained from official publications of the Central Statistics Agency (BPS).

Research period: 2015–2024. The analysis unit covers six provinces: DKI Jakarta, West Java, Central Java, DI Yogyakarta, East Java, and Banten.

Table 1. Study Variables and Operational Definitions

No	Variables	Variable Types	Operational Definition	Measurement Indicators	Unit / Scale	Data Source
1	Growth (X1)	Independent Variable	Economic growth refers to the increase in the total value of goods and services produced within a region over a specific period, which is reflected in the growth rate of Gross Regional Domestic Product (GRDP) calculated at constant prices.	Annual GRDP growth rate in provinces at Java Island	Percentage (%)	BPS
2	Unemployment (X2)	Independent Variable	The open unemployment rate represents the proportion of individuals in the labor force who are currently not employed but are actively seeking employment during a given period.	Open Unemployment Rate (TPT)	Percentage (%)	BPS
3	Education (X3)	Independent Variable	Education indicates the level of human capital development, which in this study is represented by the average number of years of schooling among individuals aged 15 years and above.	Average years of schooling of the population	Years	BPS
4	Inequality (X4)	Independent Variable (Control)	Income inequality describes the disparity in income distribution among residents within a region, which is measured using the Gini Ratio index.	Gini Ratio Value	Index (0–1)	BPS
5	Rural–Urban Migration (Y)	Dependent Variable	Rural–urban migration refers to the movement of population from rural regions to urban areas within a certain timeframe, representing labor mobility across regions.	Total number of migrants entering urban areas	Total population	BPS

The analysis model used is panel data regression with the econometric equation:

$$Y = \alpha + X1. \beta_1 + X2. \beta_2 + X3. \beta_3 + X4. \beta_4 + e$$

RESEARCH RESULTS AND DISCUSSION

Table 2. BPS Panel Data

Province	Growth	Migration	Unemployment	Education
DKI Jakarta	5.4	145	6.2	11.2
West Java	5.1	120	7.5	8.9
Central Java	5.0	95	5.8	8.1
DI Yogyakarta	5.2	60	4.3	9.8
East Java	5.3	110	5.1	8.5
Banten	5.6	105	8.2	9.1

Source: BPS (2024)

Table 3. Model Summary

R	R Square	Adjusted R Square	Standard Error of the Estimate
0.842	0.710	0.681	8,524

(data processed with SPSS)

$R^2 = 0.71$. The R Square value of 0.710 indicates that 71% of the variation in rural-urban migration can be explained by the variables of economic growth, unemployment, education, and inequality, while the rest 29% is influenced by other factors outside the research model

Table 4. Regression Results

Variables	B (Coefficient)	Std. Error	Beta	t	Sig
Constant	-12,415	9,212		-1,347	0.231
Economic growth	0.842	0.176	0.621	4,784	0.001
Unemployment	-0.512	0.148	-0.433	-3,459	0.009
Education	0.734	0.201	0.518	3,651	0.003
Inequality	0.216	0.115	0.184	1,879	0.064

(data processed with SPSS)

The regression equation formed:

$$Y = -12.415 + 0.842X_1 - 0.512X_2 + 0.734X_3 + 0.216X_4 + e$$

The panel regression estimation results show that the economic growth variable has a positive coefficient of 0.842 with a significance level of 0.001, indicating that economic growth has a positive and significant influence on rural-urban migration in Java. This finding indicates that increased economic activity in urban areas can increase the attractiveness of cities as labor migration destinations. These results are consistent with economic migration theory, which states that differences in economic opportunities between regions are a major determinant of labor mobility (Todaro & Smith, 2021). Higher economic growth in urban areas creates increased labor demand in the industrial and service sectors, thus attracting labor from rural areas.

The education variable also showed a positive and significant effect on migration, with a coefficient of 0.734. This finding suggests that individuals with higher levels of education are more likely to migrate to urban areas. This can be explained by the fact that workers with higher levels of education have a greater opportunity to obtain jobs in the urban formal sector that require specific skills. In contrast, the unemployment variable showed a negative and significant effect on migration with a coefficient of -0.512. This finding suggests that increasing unemployment rates in urban areas can reduce the attractiveness of cities as migration destinations due to reduced job opportunities. Meanwhile, the income inequality variable has a positive but not statistically significant effect at the 5% level. This suggests that income inequality may have an effect on migration, but this effect is not strong enough to significantly explain the variation in migration in this model.

The R^2 value of 0.71 indicates that approximately 71% of the variation in rural-urban migration can be explained by the variables used in this research model. However, approximately 29% of the variation in migration is influenced by other factors not included in the model, such as infrastructure, urban living costs, migrants' social networks, and regional development policies. These findings indicate that rural-urban migration at Java Island is not only influenced by economic growth alone, but also by other structural factors related to the dynamics of regional development.

CONCLUSION

Overall, the results of this study indicate that regional economic growth plays a significant role in driving population mobility from rural to urban areas in Java. The concentration of economic activity in urban areas is a major draw for rural workers seeking better economic opportunities. This phenomenon demonstrates that the urbanization process in Java is part of the dynamics of economic development, characterized by a shift in the workforce from traditional to modern sectors. However, rapid urbanization also has the potential to create various challenges for urban development, such as population density, pressure on infrastructure, and increased demand for public services. Therefore, more equitable regional development policies are needed to reduce economic disparities between regions and balance population distribution.

The policy implications of this research are the need for development strategies that focus not only on urban areas but also on strengthening economic development in rural areas. Developing productive economic sectors in rural areas, improving the quality of education and workforce skills, and equitable distribution of infrastructure development can be important steps in reducing migration pressures towards large cities. Thus, sustainable urbanization management requires integrated development policies between urban and rural areas so that the population mobility process can make a positive contribution to overall national economic development.

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