



OUT-MIGRATION IN INDONESIA AND ITS DETERMINING FACTORS

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Abstract

This study aims to analyze the influence of economic factors on out-migration in Indonesia, with a focus on poverty, wage levels, labor force participation, and unemployment rates. The research utilizes panel data from 34 provinces across three observation periods—2010, 2015, and 2020—employing a quantitative approach through panel data regression. The Fixed Effects Model (FEM) is determined as the most appropriate model based on the Chow and Hausman tests. The estimation results indicate that poverty and labor force size have a positive effect on out-migration. Meanwhile, wage levels and unemployment rates do not show a significant impact. These findings suggest that regional economic disparities and labor market pressures drive population mobility to other areas. Therefore, policies focusing on reducing regional inequality, expanding employment opportunities, and strengthening local economic bases are needed. This study contributes to migration research through the use of nationally scaled panel data, which enables a more structured explanation of the spatial and temporal dynamics of out-migration in Indonesia.

Keywords: Out-Migration, Poverty, Labor Force, Regional Economy, Panel Data

INTRODUCTION

Interregional population mobility is a phenomenon inherent in the dynamics of economic development, particularly in developing countries such as Indonesia (Batubara et al., 2025). This mobility reflects society's adaptation process to regional development disparities, changes in economic structure, and labor market dynamics. One form of such mobility is out-migration, defined as the movement of people from their place of origin to other areas in pursuit of better economic and social opportunities (Awasthi & Mehta, 2020; Tumwesigye et al., 2021). From a regional economic perspective, out-migration is understood as a rational response of individuals to welfare differences across regions, including disparities in wage levels, employment opportunities, and quality of life (Hansen et al., 2021).

Migration decisions are influenced not only by individual preferences but also by structural economic pressures. High levels of poverty, limited employment opportunities, low wages, and an increasing working-age population often serve as key drivers of out-migration (Bollyky et al., 2022; Juliana et al., 2023). In Indonesia, these conditions are closely related to significant interregional development disparities. Regions with more advanced economic activities tend to become migration destinations, while areas with limited job availability and economic opportunities become sources of migrants (Pardede et al., 2020). This indicates that out-migration functions as an adaptive mechanism for the productive-age population in response to differences in economic opportunities and welfare levels.

Out-migration is also associated with various socioeconomic issues in Indonesia, such as poverty, low human capital quality, and high unemployment. Inequality in employment opportunities and limited access to education and skills drive part of the productive-age population to seek opportunities outside their regions of origin. Several studies show that poverty, education level, and unemployment significantly influence migration decisions, reinforcing the view that migration is an adaptive strategy in response to welfare limitations and labor market imbalances (Lova & Aisyah, 2024; Sari & Tisnawati, 2024).

The study of out-migration in Indonesia becomes increasingly relevant when analyzed across several points in time, particularly in 2010, 2015, and 2020. These three periods reflect differing economic conditions within the process of national development. The year 2020 was marked by the COVID-19 pandemic, which had a significant impact on economic activity, the labor market, and population mobility (Malahayati et al., 2021; Khoirunurrofik et al., 2022). These changes influenced migration patterns, both in terms of intensity and the underlying determinants.

According to Statistics Indonesia (BPS, 2020), out-migration in Indonesia exhibits an uneven distribution across provinces. Provinces on the island of Java tend to dominate out-migration figures, with DKI Jakarta recording the highest rate. This condition reflects the presence of push factors such as high living costs, population density, and pressure on the urban labor market. In addition to DKI Jakarta, other provinces such as West Java, Central Java, and East Java also report relatively high levels of out-migration, indicating significant population mobility within these regions.

On the other hand, provinces in eastern Indonesia generally have lower levels of out-migration. This condition highlights disparities in economic structure, job availability, and

levels of development across regions. Therefore, out-migration patterns in Indonesia not only reflect population mobility but also represent regional development inequalities that remain a challenge in national development.

Several studies have examined the factors influencing migration. Pardede et al. (2020) and Alvarez et al. (2021) show that internal migration is influenced by development disparities and demographic dynamics across regions. Dorn and Zweimüller (2021) and Poledna et al. (2024) emphasize that changes in economic conditions and labor markets play a significant role in driving population mobility. Das et al. (2020) also find that out-migration tends to increase when economic opportunities in the region of origin stagnate. These findings confirm that migration is a response to changes in economic and social conditions within a region.

More specifically, several studies identify economic factors as the primary determinants of out-migration. Juliana et al. (2023) show that high poverty levels encourage households to seek alternative livelihoods outside their home regions. Trisetiyo and Haviz (2020) and Santoso and Artaningtyas (2024) find that wage differentials across regions are a major attraction for labor mobility. Mangara et al. (2024) and Telaumbanua et al. (2025) highlight that labor market pressures, reflected in an increasing labor force without corresponding job creation, can drive out-migration. Kaluarachchi and Jayathilaka (2024) and Ochoa-Moreno et al. (2025) also find that high unemployment increases the mobility of the productive-age population toward regions with better job opportunities.

Despite the rapid development of migration studies in development economics, empirical findings still vary across studies. Most previous research is limited in terms of regional scope and analytical approach. Earlier studies generally focus on one or a few determinants separately, such as poverty or wages, without considering the interrelationships among economic variables simultaneously. Studies integrating poverty, wage levels, labor force, and unemployment rates within a single national analytical framework remain limited. Furthermore, approaches that capture interperiod migration changes as reflections of structural economic transformations are still scarce in Indonesia. Therefore, a research gap remains in comprehensively understanding the determinants of out-migration from both spatial and temporal dimensions.

Based on this gap, this study offers novelty by integrating four key economic variables—poverty, wage levels, labor force, and unemployment rates—into a single empirical model to explain out-migration in Indonesia. The study uses panel data covering 34 provinces in 2010, 2015, and 2020, allowing for analysis of both interregional variation and changes over time. This approach not only enriches cross-sectional analysis but also provides a longitudinal dimension to capture structural economic changes and migration patterns in Indonesia.

This study aims to analyze the effects of poverty, wage levels, labor force, and unemployment rates on out-migration across 34 provinces in Indonesia during the periods 2010, 2015, and 2020. The findings are expected to provide empirical evidence that enriches migration literature, particularly in developing countries, and serve as a basis for formulating effective, inclusive, and sustainable regional development and employment policies in Indonesia.

REVIEW OF LITERATURE

The Effect of Poverty on Out-Migration

From a development economics perspective, individual migration decisions can be explained by the Harris–Todaro Migration Theory, which states that migration is a rational response to differences in economic opportunities between origin and destination areas (Oyvatt & wa Gĩthĩnji, 2020). Individuals tend to move when the expected income in the destination area is higher than in their place of origin. Therefore, high poverty levels in a region can act as a driving force for out-migration as an effort to improve economic welfare.

Poverty reflects limited access to economic resources, employment opportunities, and adequate income levels (Nugroho & Arif, 2024; Saputro & Arif, 2024). When households face such constraints, migration is often used as an adaptive strategy to obtain better economic opportunities elsewhere (Juliana et al., 2023). In this context, migration serves as a mechanism to reduce economic pressure and improve welfare. Based on this explanation, the proposed hypothesis is:

H₁: Poverty has a positive effect on out-migration.

The Effect of Wage Levels on Out-Migration

According to Neoclassical Migration Theory, wage differentials across regions are the main driver of labor mobility (Hunter & Simon, 2023). Individuals tend to move from low-wage regions to areas offering higher wages to maximize income and economic welfare.

In origin regions, relatively low wage levels can act as a push factor for out-migration (Santoso & Artaningtyas, 2024). This condition reflects low returns to labor and limited regional economic productivity. Conversely, regions with higher wage levels become migration destinations as they offer better income prospects. Based on this explanation, the research hypothesis is formulated as follows:

H₂: Wage levels have a negative effect on out-migration.

The Effect of Labor Force on Out-Migration

The size of the labor force reflects the number of productive-age individuals actively participating in the labor market. From the perspective of Labour Market Pressure Theory, an increase in the labor force not accompanied by adequate job availability creates pressure in the labor market (Szymczak & Wolszczak-Derlacz, 2022). This condition intensifies competition for jobs and encourages some workers to seek opportunities elsewhere through migration.

If labor force growth outpaces job creation in a region, the likelihood of out-migration increases (Mangara et al., 2024). Migration functions as a labor market adjustment mechanism to reduce pressure caused by labor surplus in the origin region. Based on this explanation, the proposed hypothesis is:

H₃: The labor force has a positive effect on out-migration.

The Effect of Unemployment Rate on Out-Migration

The unemployment rate is an indicator of imbalance between the available labor force and existing job opportunities. Within the Harris–Todaro Migration Theory framework, high unemployment in the origin region can encourage individuals to migrate to areas with better employment prospects (Tomoiağă & Silaghi, 2023).

High unemployment creates economic pressure for individuals and households due to limited access to income sources (Fagereng et al., 2024). This condition drives workers to

seek alternative employment opportunities in other regions through out-migration. Thus, the higher the unemployment rate in a region, the greater the likelihood of population mobility to other areas. Based on this explanation, the hypothesis is formulated as follows:

H₄: The unemployment rate has a positive effect on out-migration.

RESEARCH METHOD

This study employs a quantitative approach to analyze the influence of economic factors on out-migration in Indonesia. The quantitative approach is selected because the study examines causal relationships between independent and dependent variables using numerical data and inferential statistical analysis (Lim, 2025). The analysis focuses on the effects of poverty, wage levels, labor force, and unemployment rates on interregional out-migration in Indonesia.

The unit of analysis in this study is all provinces in Indonesia. The study covers 34 provinces with observation periods in 2010, 2015, and 2020. The data used are secondary data obtained from official publications of Statistics Indonesia (BPS), particularly publications on population migration and regional socio-economic indicators. The combination of cross-sectional (regional) and time series (temporal) dimensions results in panel data consisting of 102 observations. This panel data structure enables the analysis of migration changes across periods while accommodating differences in characteristics across provinces (Ditzen et al., 2025).

Data collection is conducted through documentation, by compiling and recording statistical data officially published by BPS. The collected data include out-migration, poverty, wage levels, labor force, and unemployment rates for each province during the observation period. Secondary data are selected because they are compiled by an official government institution and have undergone statistical verification processes, ensuring sufficient reliability and consistency for empirical analysis (Sulung & Muspawi, 2024).

The dependent variable in this study is out-migration. The independent variables include poverty, wage levels, labor force, and unemployment rates. The operational definitions and measurements of each variable are presented in Table 1.

Table 1. Operational Definitions of Variables

Variable	Operational Definition	Unit	Source
Out-Migration	Number of people moving out of a province within a certain period.	Thousand persons	BPS
Poverty	Number of people living below the poverty line in a province.	Thousand persons	BPS
Wage Level	Average wage or income of workers in a province.	Rupiah	BPS
Labor Force	Number of working-age individuals who are employed or actively seeking work.	Million persons	BPS
Unemployment Rate	Percentage of the labor force that is unemployed and seeking work.	Percent (%)	BPS

Data analysis is conducted using panel data regression, which allows for a more comprehensive examination of the relationship between economic variables and out-

migration compared to separate cross-sectional or time series analyses (Baltagi, 2021). Model estimation is carried out using three approaches: the Common Effects Model (CEM) or Pooled Least Squares, the Fixed Effects Model (FEM), and the Random Effects Model (REM).

The selection of the best model is conducted through several statistical tests. The Chow test is used to determine the more appropriate model between CEM and FEM. The Hausman test is used to select the most consistent model between FEM and REM. After determining the best model, the overall model significance is tested simultaneously using the F-test, while the effect of each independent variable on out-migration is tested partially using the t-test. All data processing and estimation are performed using EViews version 13 software. The empirical model of the study is formulated as follows:

$$OUT_{(it)} = \beta_0 + \beta_1 POV_{(it)} + \beta_2 WL_{(it)} + \beta_3 LF_{(it)} + \beta_4 UR_{(it)} + \varepsilon_{(it)} \quad (1)$$

Where:

- $OUT_{(it)}$: Out-migration in province i at time t
- $POV_{(it)}$: Poverty in province i at time t
- $WL_{(it)}$: Wage level in province i at time t
- $LF_{(it)}$: Labor force in province i at time t
- $UR_{(it)}$: Unemployment rate in province i at time t
- β_0 : Constant
- $\beta_1-\beta_4$: Regression coefficients of independent variables
- $\varepsilon_{(it)}$: Error term
- i : i-th province
- t : t-th time period

RESULTS AND DISCUSSION

The results of the panel data regression using the Common Effects Model (CEM), Fixed Effects Model (FEM), and Random Effects Model (REM), along with the model selection tests, are presented in Table 2.

Table 2. Results of Panel Data Regression Estimation (CEM, FEM, and REM) and Model Selection Tests

Variable	OUT: Out-migration		
	Regression Coefficient		
	CEM	FEM	REM
C	-123.676	-185.661	-35.239
POV	36.925	292.031	180.598
WL	0.014	-0.001	0.004
LF	0.018	0.015	-0.014
UR	22.989	3.295	9.538
R ²	0.581	0.979	0.533
Adjusted R ²	0.563	0.968	0.513
F-Statistic	32.611	83.547	26.828
Prob. F-Statistic	0.000	0.000	0.000

Model Selection Tests:

Chow Test: Cross-section F (32, 62) = 38.239; Prob. F (32, 62) = 0.000

Hausman Test: Cross-section random χ^2 (4) = 47.655; Prob. χ^2 = 0.000

Source: BPS, processed using EViews version 13 (2026).

After estimating the panel data regression using the three approaches, the next step is to conduct tests to determine the most appropriate model. These include the Chow Test to choose between CEM and FEM, and the Hausman Test to determine the choice between FEM and REM.

The Chow Test results in Table 2 show a Cross-section F value of 38.239 with a probability of 0.000 (< 0.05). This indicates that the FEM model is more appropriate than the CEM. Next, the Hausman Test is conducted to determine the best model between FEM and REM. The test results show a chi-square (χ^2) statistic value of 47.655 with a probability of 0.000 (< 0.05). This result indicates that the assumptions of the REM model are not satisfied; therefore, FEM is again confirmed as the most appropriate model.

Based on this series of tests, FEM is selected as the model used in this study. Compared to CEM and REM, FEM is considered more capable of capturing interregional heterogeneity because it accounts for province-specific effects (Dettori et al., 2022). The regression results using FEM are presented in Table 3.

Table 3. Panel Data Regression Estimation Results Using the Fixed Effects Model (FEM)

$OUT_{(it)} = -185.661 + 292.031POV_{(it)} - 0.001WL_{(it)} + 0.015LF_{(it)} + 3.295UR_{(it)}$
(0.000)* (0.899) (0.093)*** (0.439)
$R^2 = 0.979$; F-Statistic = 83.547; Prob. F = 0.000

Source: BPS, processed using EViews version 13 (2026).

Notes: * significant at $\alpha = 0.01$; *** significant at $\alpha = 0.10$.

Based on the FEM estimation in Table 3, the coefficient of determination (R^2) is 0.979, the F-statistic is 83.547, and the Prob. F-statistic is 0.000. The probability value of the F-statistic, which is smaller than the significance level of 0.05, indicates that poverty, wage levels, labor force, and unemployment rates simultaneously have a significant effect on out-migration in Indonesia.

The coefficient of determination (R^2) of 0.979 indicates that approximately 97.9 percent of the variation in out-migration across provinces in Indonesia can be explained by the economic variables included in the model. The remaining 2.1 percent is influenced by other factors outside the scope of this study.

Table 4. Partial Test Results (t-test) of Independent Variables on Out-Migration

Variable	Coefficient	Probability (t)	Conclusion
POV	292.031	0.000	POV has a positive effect on OUT.
WL	-0.001	0.899	WL has no significant effect on OUT.
LF	0.015	0.093	LF has a positive effect on OUT.
UR	3.295	0.439	UR has no significant effect on OUT.

Source: BPS, processed using EViews version 13 (2026).

The results of the partial test (t-test) in Table 4 show that poverty and labor force variables have a positive effect on out-migration in Indonesia. Meanwhile, wage levels and unemployment rates do not have a significant effect.

The coefficient of the poverty variable is positive at 292.031 with a significance level of 0.000 (< 0.05). This indicates that an increase in poverty by 1 thousand people will increase out-migration by 292.031 thousand people. These results suggest that poverty is a major driving factor of population mobility, where economic limitations in the region of origin encourage people to seek better economic opportunities elsewhere.

The coefficient of the labor force variable is positive at 0.015 with a significance level of 0.093 (< 0.10). This indicates that an increase in the labor force by 1 million people will increase out-migration by approximately 0.015 million people, or about 15 thousand individuals. These findings suggest that the growth of the working-age population, when not accompanied by job creation, encourages workers to migrate to regions with better economic opportunities.

Discussion

The results show that poverty has a positive effect on out-migration in Indonesia; therefore, the first hypothesis (H_1) is accepted. This finding indicates that poverty is a primary driver of migration, as explained in classical migration theory and development economics. Limited access to economic resources, low productivity, and limited employment opportunities in the region of origin encourage households to migrate as a strategy to improve welfare. Persistent regional development disparities in Indonesia cause high-poverty areas to become major sources of out-migration. Migration thus functions as an adjustment mechanism to regional inequality. These findings are consistent with Juliana et al. (2023) and Oyvat & wa Gĩthĩnji (2020), which emphasize that economic pressure in the region of origin is a key determinant of population mobility.

Wage levels do not have a significant effect on out-migration in Indonesia; therefore, the second hypothesis (H_2) is rejected. Although wage differentials across regions are theoretically considered a pull factor for migration, the findings indicate that wage levels are not the primary determinant of migration decisions. Migration decisions are influenced by various other factors such as job availability, employment stability, regional economic structure, and long-term prospects. The dominance of the informal sector in some regions also reduces wage transparency, making wages less reliable as a decision-making basis. These findings are consistent with Kwilinski et al. (2022), who state that labor mobility is more influenced by job opportunities and labor market dynamics than by wage levels alone.

The labor force has a positive effect on out-migration in Indonesia; therefore, the third hypothesis (H_3) is accepted. An increase in the working-age population without corresponding job creation creates pressure on the labor market in the region of origin. This condition intensifies job competition and encourages part of the workforce to seek opportunities in other regions. From a regional economic perspective, this phenomenon reflects an adjustment to imbalances between labor supply and demand across regions. Regions with labor surpluses become sources of migration, while regions with greater economic opportunities become destinations. These findings are consistent with (Hansen et al. (2021), Mangara et al. (2024), and Telaumbanua et al. (2025) which show that increases in the labor force enhance labor mobility.

The unemployment rate does not have a significant effect on out-migration in Indonesia; therefore, the fourth hypothesis (H_4) is rejected. Theoretically, unemployment is a push factor for migration, as individuals without jobs seek opportunities elsewhere. However, the findings indicate that unemployment is not a primary determinant of migration in Indonesia. This condition may be explained by migration costs, limited access to information about job opportunities in destination regions, and the role of social networks in facilitating mobility. Not all unemployed individuals have the financial resources to migrate; thus, some choose to remain in their place of origin while waiting for local job opportunities. Migration tends to be selective, undertaken by individuals with certain resources. These findings are consistent with Ochoa-Moreno et al. (2025) and Paudel (2025), which emphasize that unemployment is not always a key determinant of migration, as migration decisions are influenced by various socioeconomic factors.

CONCLUSION

This study aims to analyze the influence of economic factors on out-migration in Indonesia, particularly poverty, wage levels, labor force, and unemployment rates. The results show that poverty and the labor force have a positive effect on out-migration. In contrast, wage levels and unemployment rates do not have a significant effect on out-migration.

Based on these findings, the government needs to strengthen regional economic development policies oriented toward poverty reduction and the creation of productive employment opportunities in origin areas. These efforts can be implemented through strengthening local economic sectors, developing region-based industries, improving human resource quality, and expanding access to skills training for the labor force. In addition, the government should promote more equitable regional development to reduce disparities in economic opportunities across provinces, which have been a major driver of population mobility.

This study has several limitations. First, it only uses four economic variables as determinants of out-migration, thus not fully capturing the complexity of social, demographic, and institutional factors that may also influence migration decisions. Second, the observation period is limited to three points in time, which does not fully reflect long-term migration dynamics. Therefore, future research is recommended to include additional variables such as education level, infrastructure development, regional inequality, and human development quality, as well as to use longer time periods to provide a more comprehensive understanding of internal migration dynamics in Indonesia. Furthermore, the use of spatial analysis approaches, or more advanced econometric models, could offer deeper insights into interregional linkages in migration processes.

This study confirms that out-migration in Indonesia is closely related to structural economic conditions at the regional level. Therefore, inclusive, balanced, and equity-oriented development policies are essential in managing population mobility dynamics and promoting sustainable regional development.

REFERENCES

- Alvarez, M., Bernard, A., & Lieske, S. N. (2021). Understanding internal migration trends in OECD countries. *Population, Space and Place*, 27(7), e2451. <https://doi.org/10.1002/psp.2451>
- Awasthi, I., & Mehta, B. S. (2020). Forced out-migration from hill regions and return migration during the pandemic: Evidence from Uttarakhand. *The Indian Journal of Labour Economics*, 63(4), 1107–1124. <https://doi.org/10.1007/s41027-020-00291-w>
- Baltagi, B. H. (2021). *Econometric analysis of panel data (6th ed.)*. Springer. <https://doi.org/10.1007/978-3-030-53953-5>
- Batubara, K. F., Harahap, I., & Anggara, W. (2025, July). The phenomenon of population migration and urbanization on the formation of new cities in Indonesia. In *Proceedings of the Annual International Conference on Interdisciplinary Islamic Studies* (pp. 135–141). Redwhite Press. <https://doi.org/10.32698/aicoiis24604>
- Bollyky, T. J., Graetz, N., Dieleman, J., Miller-Petrie, M. K., Schoder, D., Joyce, S., ... Hay, S. I. (2022). Growing up and moving out: Migration and the demographic transition in low- and middle-income nations. *Population Studies*, 76(1), 63–80. <https://doi.org/10.1080/00324728.2022.2034919>
- Das, P., Saha, J., & Chouhan, P. (2020). Effects of labor out-migration on socio-economic set-up at the place of origin: Evidence from rural India. *Children and Youth Services Review*, 119, 105512. <https://doi.org/10.1016/j.childyouth.2020.105512>
- Dettori, J. R., Norvell, D. C., & Chapman, J. R. (2022). Fixed-effect vs random-effects models for meta-analysis: Three points to consider. *Global Spine Journal*, 12(7), 1624–1626. <https://doi.org/10.1177/21925682221110527>
- Ditzen, J., Karavias, Y., & Westerlund, J. (2025). Testing and estimating structural breaks in time series and panel data in Stata. *The Stata Journal*, 25(3), 526–560. <https://doi.org/10.1177/1536867X251365449>
- Dorn, D., & Zweimüller, J. (2021). Migration and labor market integration in Europe. *Journal of Economic Perspectives*, 35(2), 49–76. <https://doi.org/10.1257/jep.35.2.49>
- Fagereng, A., Onshuus, H., & Torstensen, K. N. (2024). The consumption expenditure response to unemployment: Evidence from Norwegian households. *Journal of Monetary Economics*, 146, 103578. <https://doi.org/10.1016/j.jmoneco.2024.103578>
- Hansen, H. K., Lyngemark, D. H., & Weatherall, C. D. (2021). Migration and employment after an economic shock: Regional characteristics and migration patterns. *Regional Studies*, 55(5), 907–920. <https://doi.org/10.1080/00343404.2020.1814230>
- Hunter, L. M., & Simon, D. H. (2023). Time to mainstream the environment into migration theory? *International Migration Review*, 57(1), 5–35. <https://doi.org/10.1177/01979183221074343>
- Juliana, A., Daeng, A., & Satarudin, S. (2023). Pengaruh pendidikan, kemiskinan, dan tingkat pengangguran terhadap jumlah pekerja migran Indonesia (PMI) ke luar negeri di Provinsi Nusa Tenggara Barat. *Jurnal Konstanta*, 2(1), 1–13. <https://doi.org/10.29303/konstanta.v2i1.489>
- Kaluarachchi, S., & Jayathilaka, R. (2024). Unveiling Sri Lanka's brain drain and labour market pressure: A study of macroeconomic factors on migration. *PLOS ONE*, 19(3), e0300343. <https://doi.org/10.1371/journal.pone.0300343>

- Khoirunurrofik, K., Abdurrachman, F., & Rachmanto, U. N. (2022). Socioeconomic and policy determinants of mobility during COVID-19: Evidence from Indonesian cities. *Journal of Urban Management*, 11(4), 424–436. <https://doi.org/10.1016/j.jum.2022.07.003>
- Kwilinski, A., Lyulyov, O., Pimonenko, T., Dzwigol, H., Abazov, R., & Pudryk, D. (2022). International migration drivers: Economic, environmental, social, and political effects. *Sustainability*, 14(11), 6413. <https://doi.org/10.3390/su14116413>
- Lim, W. M. (2025). What is quantitative research? An overview and guidelines. *Australasian Marketing Journal*, 33(3), 325–348. <https://doi.org/10.1177/14413582241264622>
- Lova, Y. S., & Aisyah, S. (2024). International migration in Indonesia and its influencing factors. *Jurnal Ekonomi*, 13(1), 1309–1321. <https://www.ejournal.seaninstitute.or.id/index.php/Ekonomi/article/view/3935>
- Malahayati, M., Masui, T., & Anggraeni, L. (2021). An assessment of the short-term impact of COVID-19 on economics and the environment: A case study of Indonesia. *Economia*, 22(3), 291–313. <https://doi.org/10.1016/j.econ.2021.12.003>
- Mangara, T. H., Saputri, W., & Putri, R. A. (2024). Pengaruh kondisi sosial, ekonomi, dan ketenagakerjaan terhadap migrasi luar negeri di Indonesia (studi kasus: 33 provinsi di Indonesia tahun 2013–2022). *Benefits: Journal of Economics and Tourism*, 1(1), 16–32. <https://doi.org/10.69836/benefits-jeti.v1i1.9>
- Nugroho, A. R. I., & Arif, M. (2024). Determinants of the number of impoverished people in Central Java, Indonesia. *Journal of Enterprise and Development*, 6(1), 212–222. <https://doi.org/10.20414/jed.v6i1.9431>
- Ochoa-Moreno, W. S., Quito, B., del Río-Rama, M. D. L. C., & Torres-Díaz, V. (2025). Analysis of push and pull factors in net migration in Latin American countries and the Caribbean. *Quality & Quantity*, 59(3), 1999–2023. <https://doi.org/10.1007/s11135-024-02002-9>
- Oyvat, C., & wa Githĩnji, M. (2020). Migration in Kenya: Beyond Harris–Todaro. *International Review of Applied Economics*, 34(1), 4–35. <https://doi.org/10.1080/02692171.2019.1620702>
- Pardede, E. L., McCann, P., & Venhorst, V. A. (2020). Internal migration in Indonesia: New insights from longitudinal data. *Asian Population Studies*, 16(3), 287–309. <https://doi.org/10.1080/17441730.2020.1774139>
- Paudel, S. N. (2025). The influence of domestic socio-economic development on migration decisions in low- and middle-income countries: A migration capabilities perspective. *Journal of Asian Development Studies*, 14(1), 1–27. <https://doi.org/10.62345/jads.2025.14.1.1>
- Poledna, S., Strelkovskii, N., Conte, A., Goujon, A., Linnerooth-Bayer, J., Catalano, M., & Rovenskaya, E. (2024). Economic and labour market impacts of migration in Austria: An agent-based modelling approach. *Comparative Migration Studies*, 12(1), 18. <https://doi.org/10.1186/s40878-024-00374-3>
- Santoso, B. M., & Artaningtyas, W. D. (2024). Determinan migrasi internasional pekerja migran Indonesia (tahun 2017–2022). *JER (Jurnal Ekonomi Regional)*, 16(1), 29–39. <https://doi.org/10.31315/jer.v16i1.13062>

- Saputro, R. H., & Arif, M. (2024). What factors affecting poverty rates in Indonesia? Empirical evidence from West Sumatra. *Journal of Enterprise and Development*, 6(1), 248–258. <https://doi.org/10.20414/jed.v6i1.9430>
- Sari, N. L. W. C., & Tisnawati, N. M. (2024). Analysis of the determinants of international migration of Indonesian migrant workers from city districts in Bali Province. *International Journal of Management Research and Economics*, 2(3), 365–379. <https://doi.org/10.54066/ijmre-itb.v2i3.2079>
- Sulung, U., & Muspawati, M. (2024). Memahami sumber data penelitian: Primer, sekunder, dan tersier. *Edu Research*, 5(3), 110–116. <https://doi.org/10.47827/jer.v5i3.238>
- Szymczak, S., & Wolszczak-Derlacz, J. (2022). Global value chains and labour markets—simultaneous analysis of wages and employment. *Economic Systems Research*, 34(1), 69–96. <https://doi.org/10.1080/09535314.2021.1982678>
- Telaumbanua, W. K., Ndraha, A. B., Telaumbanua, E., & Zebua, S. (2025). Pengaruh tingkat upah dan lapangan kerja terhadap migrasi penduduk di wilayah Kecamatan Sawo Kabupaten Nias Utara. *Arus Jurnal Sosial dan Humaniora*, 5(3), 3985–4000. <https://doi.org/10.57250/ajsh.v5i3.1821>
- Tomoiağă, E., & Silaghi, M. I. P. (2023). Internal migration in Romania: Revisiting the Harris–Todaro model of migration. *European Journal of Interdisciplinary Studies*, 15(2), 176–185. <https://doi.org/10.24818/ejis.2023.23>
- Trisetiyo, W., & Haviz, M. (2020). The effect of wages, investment, number of industrial units, and number of job opportunities on the level of migration to DKI Jakarta in 2008–2019. *Dinamika Ekonomi*, 12(1), 123–132. <https://doi.org/10.29313/v12i1.6780>
- Tumwesigye, S., Hemerijckx, L. M., Opio, A., Poesen, J., Vanmaercke, M., Twongyirwe, R., & Van Rompaey, A. (2021). Who and why? Understanding rural out-migration in Uganda. *Geographies*, 1(2), 104–123. <https://doi.org/10.3390/geographies1020007>