

ABSTRACT

Persistent interprovincial disparities in economic growth remain an important development challenge in Indonesia, despite continued infrastructure expansion that has not yet generated evenly distributed outcomes. This condition raises the need to examine whether infrastructure development in one province affects not only its own economic growth but also creates spatial spillovers to neighboring provinces. Based on this urgency, this study aims to analyze the direct and indirect effects of transport and digital infrastructure development, investment, and labor on interprovincial economic growth in Indonesia.

This study employs panel data for 34 provinces in Indonesia over the period 2018–2022. The analysis applies a spatial econometric approach. The spatial weight matrix is constructed using the K-Nearest Neighbors (KNN) method with $K = 5$, selected based on the lowest Akaike Information Criterion (AIC). Spatial autocorrelation is examined using Global Moran's I , while the empirical specification is determined through panel model selection and spatial model comparison. The results indicate that the Spatial Durbin Model with fixed effects (SDM-FE) is the most appropriate specification for this study. Substantive interpretation is then based on direct, indirect, and total effects.

The findings show that interprovincial economic growth in Indonesia exhibits positive spatial dependence. Based on the impact effects, investment is the most consistent driver of economic growth, with a positive direct effect significant at the 1 percent level, a positive indirect effect significant at the 5 percent level, and a positive total effect significant at the 1 percent level. Among the infrastructure variables, BTS 4G shows a positive indirect effect significant at the 5 percent level and a positive total effect significant at the 1 percent level, while airports exhibit positive indirect and total effects that are significant at the 10 percent level. Labor only shows a positive direct effect that is significant at the 10 percent level, whereas national roads and shipping lanes do not exhibit statistically significant substantive impacts. Overall, the study concludes that, in the Indonesian context, interprovincial economic growth is more strongly driven by investment and network-based connectivity infrastructure than by physical infrastructure whose spillover benefits have not yet been evenly realized..

Keywords: economic growth, infrastructure, spillover, Spatial Durbin Model (SDM)

JEL Classification: C23, R11, R12, O18