

Connectivity Infrastructure Development and Its Impact on Regional Disparities: Evidence from Indonesia at the Beginning of the Digital Economy Era

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This study analyses the impact of the development of connectivity infrastructure on regional disparities in Indonesia with observation at the district level in Indonesia. Not only the district level observation in a large archipelagic country, but another contribution that this study tried to provide is also to expand the definition of connectivity infrastructure with the mentioned of the digital economy era in the last decade. The mechanism that hypothetically can occur from changes in the condition of connectivity infrastructure indicator and its transmission to disparities based on various arguments and theories. First, increasing physical connectivity through the transmission of lower consumption costs could reduce disparities among regions. Second, increasing digital connectivity through the transmission of increasing income opportunities could reduce disparities among regions.

Using variable road density to describes physical connectivity and internet access to defined digital connectivity, this study will estimate their impact on the regional economic outcome disparity within three periods of 2010, 2014, and 2018. The outcome using two approaches, which is through the income approach and expenditure approach using Fixed Effect Panel Model as the main strategy, and it is also discussed if using the disparity measure directly as the outcome. Furthermore, this study also preparing Instrumental Variable (IV) for the digital connectivity, which is the interaction between “distance between district to capital” and “electricity access” and estimate it using the 2SLS method.

The main result shows a consistent direction of the correlation. The road density which represents physical connectivity shows an effect following the expectations, which is reducing the distribution of expenditures and increasing the distribution of income. So, assuming the transmission described in the conceptual framework, physical connectivity provides evidence of having a significant impact in reducing disparities among regions.

Meanwhile, the direction of the correlation shown by digital connectivity has not been in line with expectations and significantly positively correlated with the distribution of expenditures. And also having a negative correlation with the distribution of income with and without the intervention of distance and access to electricity factors. But there is no reason to completely neglect the importance of digital connectivity because hypothetically, digital connectivity could work in reducing disparities between regions through other transmissions.

And to strengthen this conclusion, a simulation was carried out using the coefficient of the estimation results on the real growth of connectivity infrastructure in a district. The simulation results show that as the connectivity infrastructure improves, the disparities between districts also decrease. So, in a short sentence, this study could conclude that connectivity in general can reduce disparities between regions.

Keywords: Connectivity Infrastructure, Regional Disparities, Physical Connectivity, Digital Connectivity, Expenditure, Income.