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How is the Spatial Linkage of Inclusive Economic Development in Java Island?

I Wayan Suparta[a*], Della Kurnia Sari[b], Ahmad Dhea Pratama[b]
[a, b] *University of Lampung, Indonesia*
wayan.suparta@feb.unila.ac.id

Abstract

The objective of this study is to examine the spatial correlation of inclusive economic development among provinces in Java, as well as the impact of the open unemployment rate, inflation, and the average length of schooling on the inclusive economic development index. The analysis was conducted by incorporating spatial concepts, specifically by utilizing the inclusive economic development index as the dependent variable and the open unemployment rate, inflation, and average length of schooling as independent variables. The present study employs analytical methods and tools to examine the spatial relationship of inclusive economic development across provinces. Specifically, the Moran index analysis is utilized to assess this spatial relationship. Additionally, panel data regression analysis is employed to investigate the impact of various factors, such as the open unemployment rate, inflation, and average length of schooling, on the inclusive economic development index. The study findings indicate a lack of spatial correlation in inclusive economic development among provinces in Java. The impact of the open unemployment rate, inflation, and the average length of schooling on the inclusive economic development index is substantial.

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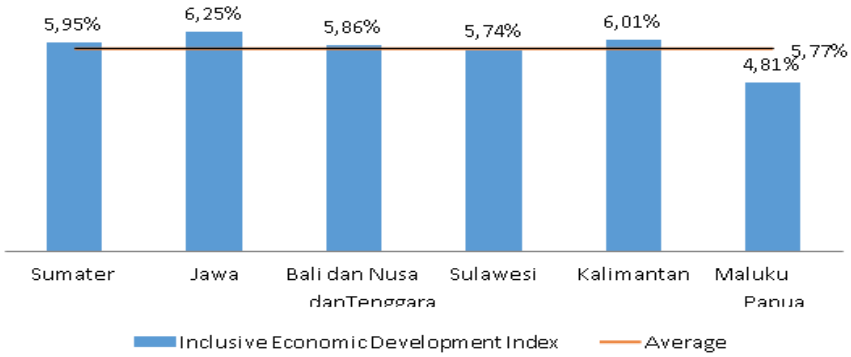
1. Introduction

Development is a continuous process towards improving the welfare of society. One indicator of successful implementation of development is economic growth as reflected in an increase in the value of the Gross Domestic Product (GDP) or Gross Regional Domestic Product (GDP) of a region. The higher the economic growth of a region, the better the economic activities achieved by the region (BAPPEDA DI Yogyakarta & BPS DI Yogyakarta, 2016). Economic growth is the main goal of national and regional development policies. Indonesia's production capacity and revenue are predicted to rise with this high economic development aim. According to the trickle-down effect theory, high growth automatically equalizes people's welfare. According to the hypothesis, job creation and other economic opportunities created by the upper middle class will benefit the lower middle class. However, the flow of wealth from the upper middle class which is expected to flow to the lower middle class does not occur optimally, because it is more concentrated in the rich class of society.

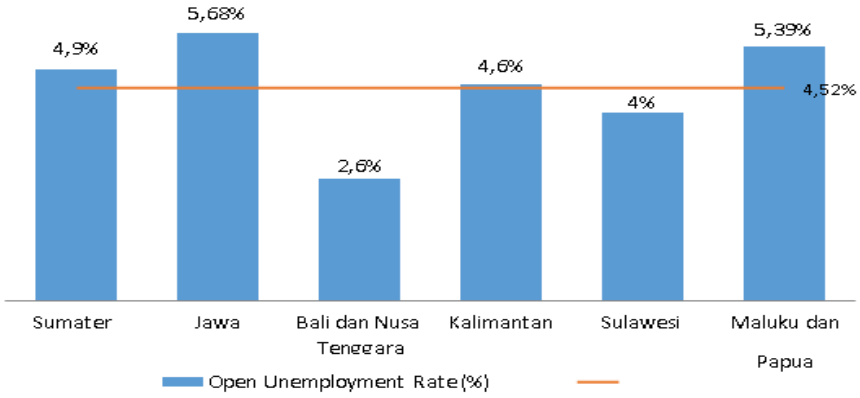


Source: Bappenas, 2020, data processed

Figure 1. Indonesia's Inclusive Economic Development Index by Island in 2019

Inclusive economic development promotes equity by providing access, opportunities, and welfare. Creating access requires government support and ease for economic actors to start and grow enterprises in new business domains. The intended equality of opportunity is that there are broad opportunities in education, health services, expressing aspirations and others. Equity in improving people's welfare means that by realizing stability in product prices, the poor will be able to meet their basic needs in life. Development can be said to be inclusive if it is able to reduce poverty, unemployment, income gaps between communities and increase children's opportunities to obtain formal education. The achievement of inclusive economic development can be measured through the Inclusive Economic Development Index (IEDI), which has three main pillars, namely: economic growth and development, equal distribution of income and poverty reduction, and expansion of access and opportunity (Shaleh, 2021). Indonesia is an archipelagic country consisting of several large islands, namely Sumatra, Java, Bali and Nusa Tenggara, Sulawesi, Kalimantan, and Maluku and Papua. The following is a Graph of the IEDI for each Island in Indonesia in 2019.

Figure 1 shows the IEDI for each Indonesian island, averaging 5.77%. Java Island scored the highest, 6.25%. Kalimantan Island has 6.01%. Maluku and Papua had the nation's lowest IEDI score of 4.81%.



Source: Bappenas, 2020, data processed

Figure 2. Open Unemployment Rate for Each Island in 2019

Figure 2 shows that Java Island had the highest open unemployment rate in 2019 at 5.68%, above the average of 4.52%. Bali has the lowest open unemployment at 2.6%. Java Island was chosen for research because it has the highest IEDI in Indonesia (6.25%) and the highest open unemployment rate. Thus, this contradicts inclusive development, which prioritizes growth, employment, and inequality and poverty reduction.

Table 1. Inclusive Economic Development Index by Province in Java Island in 2015-2019

Province	Average IEDI (%)
DKI Jakarta	7.41
Jawa Barat	5.90
Jawa Tengah	6.18
DI Yogyakarta	6.40
Jawa Timur	6.01

Source: Bappenas, 2020

Table 1 shows the Java Island IEDI rising every year. DKI Jakarta Province had the greatest IEDI in 2015 (7.00%) and 7.82% in 2019. DKI Jakarta has a high rate of inclusive economic growth since it is the capital of Indonesia. The facilities and access to them make it better than the surrounding districts. In 2019, Banten Province had the lowest IEDI, 5.87%. The Java Island IEDI data will be used to determine if inclusive economic development is spatially distributed between provinces. High economic growth does not guarantee prosperity because it does not decrease poverty and inequality. Economic growth typically focuses primarily on GDP growth and ignores employment, poverty, and income distribution. High economic growth also indicates national development success (Renie, 2020).

There exist notable variations in the attainment of the IEDI across the provinces of Java Island. The progress of several provinces is due to the different factors of the resources owned by each province. Availability of infrastructure, level of education of the population, and different local government policies are also a factor. In previous research conducted by (Long & Pasaribu, 2019) there is a spatial link to inclusive growth. So it is suspected that in this study there are also spatial linkages to inclusive economic development between provinces on the island of Java. The theory of endogenous growth suggests that the allocation of resources toward the development of physical and human capital is a significant determinant of sustained economic growth over extended periods. The impact of the government on economic growth can be elucidated by its ability to adjust public investment spending and tax revenue, thereby altering consumption patterns. The present set of theories acknowledges the significance of infrastructure, legal and regulatory frameworks, political stability, governmental policies, bureaucracy, and the foundation of global trade as crucial determinants that impact economic advancement (Apurv & Uzma, 2020; Bryan, 2013).

Java Island comprises multiple provinces within its territory. Regional economic growth can be influenced by varying resources available in different regions. Spatial factors are among the determinants that influence the expansion of the IEDI across different regions. The aspiration is that the advancement of inclusive economic development can be extended beyond the boundaries of each province situated on the island of Java, and instead, can engender favorable outcomes for the neighboring provinces. This can be achieved through an examination of the spatial interactions of inclusive economic development across Java, thereby ensuring that the objectives of inclusive economic development are equitably realized and that all members of society can experience the benefits of this approach.

The objective of this investigation is to examine the potential spatial correlation between the provinces located in Java Island and their inclusive economic development. Additionally, the study aims to scrutinize the impact of the open unemployment rate, inflation, and the average length of schooling on the index of inclusive economic development.

2. Literature Review

According to Jhingan (1997) the theory of endogenous growth is a novel framework that elucidates the sustained growth rate of an economy through endogenous factors, in contrast to the exogenous factors of the neoclassical growth theory. The novel growth theory not only critiques the theory of neoclassical growth, but also broadens it by incorporating endogenous technical advancements into the growth model. Prominent economists, Arrow, Romer, and Lucas formulated the endogenous growth model. The endogenous growth model places emphasis on the technical advancements that arise from the magnitude of investment, the extent of the capital stock, and the stock of human capital. This theoretical framework serves as the foundation for the advancement of inclusive economic development views. The primary goal of economic policy formulation is to mitigate inflationary pressures and unemployment rates. Nevertheless, this frequently poses a challenge. The utilization of monetary and fiscal policy facilitates the progression of the

economy along the aggregate supply curve in the short run to a point where the price level is elevated, resulting in reduced unemployment. This is because firms require more workers when they generate greater profits and conversely. The Phillips curve is a depiction of the inverse relationship between inflation and unemployment. Phillips' empirical research demonstrates a negative correlation between rates of wages and levels of unemployment. This observation is supported by the evidence that fluctuations in wages can be accounted for by variations in unemployment levels and fluctuations. One supporting argument for the Phillips curve pertains to its expansion in establishing a correlation between unemployment and prices. The premise underlying this statement is that there exists a positive correlation between wages and prices. The Phillips curve's robustness lies in its correlation between the rates of inflation and unemployment, as noted by Simanungkalit (2020).

Okun tried to relate the unemployment rate and real output, which became known as Okun's Law. According to Okun, economic growth and unemployment have a close relationship. This is because the working population contributes in producing goods and services, while the unemployed do not contribute. Okun revealed that there were indications of a negative relationship between economic growth, the real output gap with potential output and unemployment. This implies that as unemployment rates increase, the rate of economic growth decreases (Sukanto, 2015). One of the determinants of inclusive economic development is the unemployment rate. If economic development is accompanied by a decrease in the unemployment rate, then this development can be said to be inclusive. Which means that economic development can expand access to equitable development. Unemployment can be caused by the number of labor force that is not proportional to the number of jobs available (Hartati, 2020). Sustainable economic growth can be facilitated by low and stable inflation, thereby leading to enhanced welfare benefits for individuals. Elevated and volatile inflation rates can lead to economic instability and poverty, thereby affecting the IEDI (Salim et al., 2021). The duration of schooling has a significant impact on economic progress. Education can contribute to the development of human resources. Economic development requires not only physical capital but also human capital. More and more people successfully complete high school and university education, this shows an increase in the quality of the population, and this has an effect on the IEDI (Asih, 2015).

3. Research Methods

This study analyzes the factual facts that occurred in the provinces on the island of Java as part of Indonesia in 2015-2019. The present study is characterized as a quantitative descriptive research design, which seeks to elucidate a phenomenon using numerical data that describe the object of investigation. The present study employs secondary data obtained from the Central Bureau of Statistics (BPS) and the National Development Planning Agency (BAPPENAS). The analyzed data comprises the inflation, open unemployment rate, IEDI data, and the average length of schooling. The data provided at hand will be subjected to panel data analysis. Panel data refers to a type of data that merges cross-sectional data with time series data. Spatial linkage analysis in this study aims to determine the adjacency of the 6

provinces in Java and the effect of adjacency on the IEDI of a province. To determine spatial linkages, several stages are carried out, namely:

Global Moran Index

The global Moran Index is a statistic used to determine regional connectivity in general (Anselin, 1995). Calculation of the global Moran Index with a standardized spatial weighting matrix W is formulated by the following formula:

$$I = \frac{\sum_{i=1}^{n}\sum_{j=1}^{n} w_{ij}(x_i-\bar{x})(x_j-\bar{x})}{\sum_{i=1}^{n}(x_i-\bar{x})^2}$$

I represents the global Moran Index between provinces in Java Island. The number of observation locations between the provinces in Java Island is n and the average IEDI for those provinces is x. x_i is IEDI value for each province in Java Island and x_j is total value of the Java Island Provinces' IEDI. w_{ij} is spatial weighting matrix between provinces in Java

The hypotheses for the test using the Moran index are:

Ho: Absence of spatial autocorrelation between regions.

Ha: The existence of spatial autocorrelation between regions.

The Moran's I statistic is a measure of spatial autocorrelation that ranges from -1 to 1, indicating a correlation coefficient. A high numerical value indicates a strong correlation, whereas a value of 0 denotes the lack of autocorrelation. It is essential to compare the statistical value I with the value of expectations to determine the presence or absence of autocorrelation. The anticipated value of the variable I is:

$$E\ (\mathrm{I}) = \frac{-I}{(n-1)}$$

The Moran Index is a commonly employed metric for evaluating overall spatial autocorrelation, while the LISA Index can be utilized for testing local spatial autocorrelation by discerning the interdependence between a given observation location and other observation locations (Lee & Wong, 2001). The test statistics utilized are obtained from the standard normal distribution, specifically:

$$Z\ (\mathrm{I}) = \frac{I-E(I)}{\sqrt{Var\ (I)}} \sim N(0,1)$$

$$Var\ (I) = \frac{N^2S_1 - NS_2 + 3S_0^2}{S_0^2(N^2-1)}$$

$$S_0 = \sum_i^N \sum_j^N W_{ij}$$

$$S_1 = \frac{1}{2}\sum_i^N \sum_j^N \left(W_{ij} + W_{ji}\right)^2$$

$$S_1 = \sum_k^N \left(\sum_j^N W_{kj} + \sum_i^N W_{ik}\right)^2$$

I is the Moran index. Z(I) is the Moran index test statistical value. The expected value of the Moran index is denoted as E(I). The rejection of H0 (null hypothesis) occurs when Z(I) exceeds $Z_{1-\alpha}$ ($Z(I) > Z_{1-\alpha}$), indicating the presence of positive spatial autocorrelation. Table 2 presented in Lee and Wong (2001) displays the range of the numerical scale utilized for the Moran Index, which serves to detect the existence of spatial autocorrelation.

The Spatial Autocorrelation (Moran Index) analysis tool from Geoda software was utilized to conduct the autocorrelation test in this study. The spatial autocorrelation of each sub-district is computed by the tool, considering both its attribute values and location. The tool will generate output consisting of the Moran Index value and the resulting pattern, which may be classified as clustered, random, or dispersed based on the given attribute values and locations.

Table 2. Moran Index Scale

No	Description	Moran I
1	Cluster/group patterns with adjacent dots show the same characteristics (positive spatial autocorrelation)	I > E(I)
2	Random pattern or no specific pattern indicated by dots based on characteristics	I = E(I)
3	Negative spatial autocorrelation, with adjacent dots showing different characteristics	I < E(I)

Source: Lee & Wong, 2001

Anselin Local Moran Analysis

The preceding section elucidates the formulas and tables utilized in computing the Global Moran Index. An additional instrument is required for the identification of local indicators of spatial association (LISA). The analytical technique employed in this study is the Local Moran Index. There exist two requirements for Lisa analysis, which are as follows: Firstly, LISA must demonstrate a significant spatial clustering around the observation area for each observation. Secondly, the inclusion of LISA for all observations should be proportionate to the indicator of global spatial linkage. The primary objective of the Local Indicators of Spatial Association (LISA) is to detect and delineate spatial clusters and anomalies within a given dataset. The Local Moran Index can be formulated as follows:

$$I_i = \frac{(X_i - \bar{X}) \sum_{j=1}^{N} w_{ij}(X_j - \bar{X})}{\sum_{i=1}^{N} (X_i - \bar{X})^2 / n}$$

The Moran Index region I is denoted as I_i. The term "W_{ij}" denotes he spatial weighting factor that pertains to the geographical proximity of a given region i to its adjacent regions j. The symbol $\bar{X}$ denotes the arithmetic mean, while Xi and Xj represent the values of regional observation variable I and the area observation variable value j, respectively.

If the variable I_i exhibits a statistically significant positive value, it can be inferred that the cluster of regions surrounding region i shares similar characteristics with region j. If the value of I_i is negative and significant, it can be inferred that the grouping of regions surrounding region i differs in characteristics from the grouping of regions surrounding region j (Anselin, 1995).

Local Indicator of Spasial association (LISA)

The Local Indicator of Spatial Association (LISA) is a statistical measure utilized to ascertain the precise spatial relationship of a given region. Anselin (1995) proposed that the Local Indicators of Spatial Association should adhere to two specific criteria. The LISA demonstrate a statistically significant spatial clustering

around each observation, with the total LISA value for each local area being directly proportional to the overall size of the global area. The Local Indicator of Spatial Autocorrelation aims to detect anomalous spatial clusters. The Local Moran Index can be formulated as follows:

$$I_i = \frac{(Y_i - \bar{Y})\sum_{j=1}^{N} w_{ij}(Y_j - \bar{Y})}{\sum_{i=1}^{N}(Y_j - \bar{Y})^2/N}$$

Assuming a positive and statistically significant value of I_i, the regions surrounding region I can be grouped together based on their shared characteristics with region i. In contrast, if the value is both negative and significant, the regions surrounding region I are grouped together based on dissimilar characteristics when compared to region i.

Moran Scatterplot

The Moran scatterplot is a statistical instrument employed to examine the correlation between standardized observation values and the mean values of standardized neighbors. The utilization of Moran scatterplot in cartography enables the depiction of four distinct quadrants that delineate the various types of relationships that a given region shares with its neighboring areas (Anselin, 1995).

The quadrants within the Moran Scatterplot can be delineated in the following manner (Zhukov, 2010):

a. In the first quadrant, the presence of HH (High-High) signifies that regions with elevated levels of observed phenomena are encompassed by regions that also exhibit high levels of observed phenomena.
b. In the second quadrant, it can be observed that the LH (Low-High) pattern is present, which suggests that regions with lower observation values are encompassed by regions with higher observation values.
c. In the third quadrant, the LL (Low-low) configuration denotes that regions characterized by low levels of observed values are encompassed by regions with similarly low levels of observed values.
d. In the fourth quadrant, the HL (High-Low) pattern denotes that regions with high observation values are encompassed by regions with low observation values.

Quadrant I *High-High*	Quadrant IV *High-Low*
Quadrant II *Low-High*	Quadrant III *Low-Low*

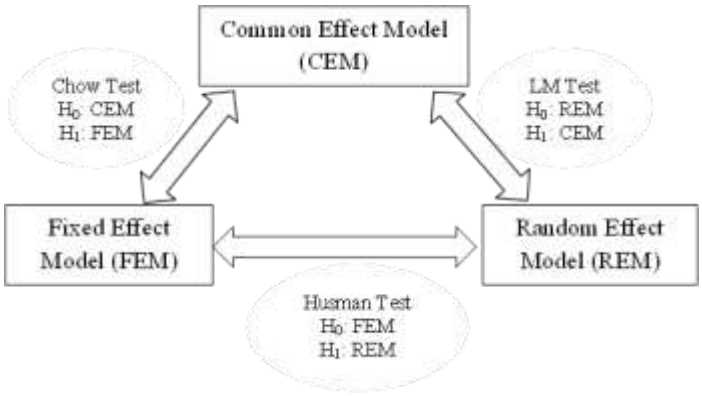
Source: Geoda, 2020.

Moran's Scatter Plot Index enables the observation of quadrant divisions within a given region, as well as the assessment of the values I and I_0. The Moran's Index is a graphical tool utilized to examine the correlation between the standardized observed value of a particular location and the mean of the observed value of the related locations (Lee & Wong, 2001). The hypothesis was tested using Moran's Index in the following manner:

H0 :I = 0 (no autocorrelation between locations)
Ha :I ≠ 0 (there is autocorrelation between locations)

Panel Data Model Selection

Panel data analysis employs four models, namely pooled least squares, pooling independent cross sections over times, least square dummy variables (fixed effects), and random effects. The triad of models can be elucidated in the accompanying diagram presented in Figure 3.



Source: Widarjono, 2013

Figure 3. Panel Data Model Selection

Panel Data Econometric Modeling

The IEDI of Province I on the island of Java in year t is considered the dependent variable in this particular study. The model employed in this study incorporates the open unemployment rate, inflation, and average length of schooling in province i during year t on the island of Java as independent variables.

$$Y_{it} = \beta_0 + \beta_1 TPT_{it} + \beta_2 INF_{it} + \beta_3 EDU_{it} + \varepsilon_t$$

Y_{it} corresponds provincial IEDI i in year t. the cross-sectional data unit is i and the time series data unit is t. TPT_{it} is open unemployment rate of province i in year t. INF_{it} is the inflation in provinve i in year t and EDU_{it} is the average length of education in province i in year t. β_0 is the constant and β_1, β_2, and β_3 are the coefficient of TPT_{it}, INF_{it}, and EDU_{it}, respectively. The error term is denoted as ε_t.

Classical Assumption Testing

Multicollinearity Detection

The identification of multicollinearity may be accomplished through an examination of the Variance-Inflating Factor (VIF) value derived from the outcomes of a regression analysis. In the event that the Variance Inflation Factor (VIF) exceeds a value of 10 (VIF>10), indications of significant multicollinearity may be present. The rate at which variance or covariance increases can be observed through the Variance Inflation Factor (VIF), which is formally defined as:

$$VIF = \frac{1}{(1-R^2)}$$

As the value of R^2 tends towards 1, the Variance Inflation Factor (VIF) tends towards infinity. This demonstrates that when the collinearity range expands, the estimator's variance also expands and can potentially reach an infinite value at a certain limit.

1) H_0: VIF > 10, there exists multicollinearity among the independent variables.
2) H_a: VIF < 10, no multicollinearity between independent variables

Heterokedasticity Test

One of the fundamental assumptions in the OLS technique concerning confounding variables is the lack of correlation between two or more interference variables. Meanwhile, autocorrelation refers to the correlation that exists between individual observations and other observations that are temporally distinct. Autocorrelation refers to the correlation between two interference variables in the context of the OLS method. Autocorrelation in OLS estimation results in the production of Linear Unbiased Estimators (LUE) rather than Best Linear Unbiased Estimators (BLUE). Various techniques are employed to identify autocorrelation issues, including the Durbin-Watson approach and the Breusch-Godfrey approach.

4. Results

Spatial Linkage Analysis (Moran and LISA Index)

The present investigation employed a spatial analysis tool to examine the spatial association of the IEDI across Java Island. The employed technique entails the computation of the Moran Index through the utilization of Queen Contiguity. The results that follow were acquired.

Table 2. Moran Index Value Linkage of Inclusive Economic Development Index between Java Island Provinces in 2015–2019

Years	I	E(I)	Z(I)	p-value
2015	-0.4341	-0.2000	-0.8876	-0.157000
2016	-0.4339	-0.2000	-0.9419	-0.154000
2017	-0.4649	-0.2000	-1.000	-0.139000
2018	-0.4529	-0.2000	-1.0201	-0.152000
2019	-0.4393	-0.2000	-1.0103	-0.120000
Average	**-0.4469**	**-0.2000**	**-0.9828**	**-0.139000**

Source: Results of processed data

Table 2 depicts the acquisition of Moran's Index values in relation to spatial linkages to the IEDI between provinces on Java Island between 2015 and 2019. The Z (I) test can be used to determine whether there is a spatial link between provinces on Java Island and the IEDI. In this study using α of 5% or 1.960Based on the table findings each year, the value of Z (I) is less than Zα/2, therefore Ha is rejected, indicating that there is no geographical association between provinces in Java and the IEDI. On Java Island, there is no spatial relationship to inclusive economic development amongst provinces. This is due to the fact that inclusive economic development has been demonstrated to have unequal conditions. In DKI Jakarta Province, economic development is more focused, and infrastructure development is likewise more advanced than in other provinces.

Figure 4 depicts the LISA Cluster Map results. According to this graph, DKI Jakarta Province has a high average index of inclusive economic development. Still, it is near to or surrounded by provinces with a low average index of inclusive economic

development (high-low). DKI Jakarta Province is bordered by Banten and West Java. The IEDI has an average value of 7.41% in DKI Jakarta Province, 5.59% in Banten Province, and 5.9% in West Java Province. The progress of numerous provinces is attributable to the fact that each province's resources are diverse. Infrastructure availability, population education level, and other local government policies are all deciding variables. Based on the Moran index test results, which reveal that there is no spatial association between regions, this research is being continued using tests without spatial ideas or by doing panel data regression tests.

Figure 4. LISA Cluster Map Results of the Average Inclusive Economic Development Index for Java Island in 2015-2019

Analysis of the Influence of Open Unemployment Rate, Average Years of Studying, and Inflation on the Inclusive Economic Development Index Without Spatial Concepts

Result Panel Data Model Selection

In order to assess the impact of the Open Unemployment Rate, Average Length of School, and Inflation on the IEDI, it is necessary to evaluate the optimal model among the Fixed Effect, Common Effect, and Random Effect. This can be achieved by performing the Chow test and Hausman test.

Table 3. Chow test and Hausman test results

Test	Cross Section Stat	Prob
Chow test	100.201456	0.0000
Hausman test	22.084110	0.0001

Source: Results of processed data

The Fixed Effect Model (FEM) is deemed to be the appropriate model for panel data regression, as per the outcomes of the Chow and Hausman tests.

Testing the Classical Assumptions on the Panel Data Model

Multicollinearity Testing

The multicollinearity test is a statistical procedure utilized to assess the presence of intercorrelation or collinearity among the independent variables in a regression model. The present study employs the correlation technique to examine the relationship among independent variables. The utilization of Eviews software yielded the subsequent outcomes:

Table 4. Multicollinearity Test Results

	TPT	INFLASI	EDUCATION
TPT	1.000000	0.387239	0.163189
INFLASI	0.387239	1.000000	0.139477
EDUCATION	0.163189	0.139477	1.000000

Source: Results of processed data

The results of the conducted multicollinearity test indicate that the variable value falls below the threshold of 0.8. The inference drawn is that the model exhibits a low level of multicollinearity or, alternatively, that not all variables are affected by multicollinearity.

Heteroscedasticity Testing

The purpose of conducting the heteroscedasticity test was to determine whether there exists a variance inequality among the residuals of different observations in a given regression model.

Table 5. Heteroscedasticity Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	019372	0.083286	-0.232602	0.8179
TPT	0.010110	0.005246	1.927270	0.0649
INFLASI	-0.018458	0.019456	-0.948706	0.3515
EDUCATION	0.008153	0.008093	1.007491	0.3230
C	-	-	0.8179	

Source: results of processed data

Results of Panel Data Regression Estimation with Fixed Effect Models

The present study has employed the Chow Test and Hausman Test to evaluate the optimal panel data model estimation. The findings indicate that the Fixed Effect model is the most suitable for this study. After conducting the classical assumption test in model evaluation, the subsequent stage involves estimating the outcomes of the panel data regression model utilizing the Fixed Effect model.

Table 6. Panel Data Regression Estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.909604	0.759062	-2.515742	0.0201
TPT	-0.058938	0.031868	-1.849454	0.0785
INFLASI	0.030937	0.018002	1.718503	0.1004
EDUCATION	0.981460	0.075379	13.02033	0.0000

Fixed Effect Model (FEM) equation model:

$$INKLUSIF = -1.909 - 0.058TPT_{it} + 0.030INF_{it} + 0.981EDU_{it}$$

The coefficient of the constant term, denoted as $\beta 0$, has a value of -1.909. This implies that in the absence of any changes in the independent variables, the IEDI is expected to decrease by 1.909 percent. The coefficient $\beta 1$, indicating the relationship between the Open Unemployment Rate and the IEDI, has a negative

value of -0.058. This implies that a 1 percent increase in the Open Unemployment Rate is associated with a 0.058 percent decrease in the value of the IEDI. The coefficient $\beta 2$, with a numerical value of 0.030, indicates that a 1% increase in inflation will result in a corresponding increase of 0.030% in the IEDI. The coefficient of $\beta 3$ has been estimated to be 0.981, indicating that a 1 percent increase in the average length of schooling is associated with a 0.981 percent increase in the IEDI.

Discussion

The Effect of Open Unemployment Rate on the Inclusive Economic Development Index in Java Island

The regression coefficients obtained from the analysis indicate that a unit change in the independent variables has a significant impact on the IEDI. Specifically, the coefficient $\beta 0$ has a negative value of -1.909, indicating that the index will experience a decrease of 1.909 percent if all independent variables remain constant. On the other hand, the coefficient $\beta 1$ has a negative value of -0.058, indicating that a 1 percent increase in the Open Unemployment Rate will lead to a decrease of 0.058 percent in the IEDI. Inclusive economic growth refers to a state of high economic growth that has the potential to broaden access, enhance opportunities, and enhance the overall welfare of the community. Enhancing the quality of human capital and augmenting job opportunities across all strata of the populace can facilitate the achievement of this objective. Inclusive growth can be defined as growth that effectively mitigates poverty, unemployment, and inter-community inequality. Presented below is a tabular representation of the outcomes of a descriptive statistical examination conducted on the IEDI of the Java Island province during the period of 2015 to 2019. Variations exist in achieving the IEDI across different provinces. The differential possession of natural resources among provinces has contributed to the disparate levels of progress observed among them. The presence of infrastructure, educational attainment of the populace, and varying policies implemented by the local government are also contributory elements.

This study aims to investigate the impact of open unemployment rate on the IEDI in Java Island. The regression analysis indicates that there exists a statistically significant and negative relationship between the Open Unemployment Rate and the IEDI. In the event of a 1% increase in the Open Unemployment Rate, a corresponding decrease of 0.141% can be expected in the IEDI. There exists a strong correlation between the rate of unemployment and the progress of the economy. The rationale behind this is that the employed demographic actively participates in the production of goods and services, whereas the unemployed demographic does not contribute to the production of goods and services. There exists evidence of an inverse correlation between economic expansion and joblessness. A negative correlation exists between the rate of economic growth and unemployment, whereby an increase in the latter leads to a decrease in the former. The findings of this investigation are consistent with the scholarly inquiry carried out by a previous study (Paramita & Purbadharmaja, 2015).

The Effect of Inflation on the Inclusive Economic Development Index in Java
A value of $\beta 2$ of 0.030 denotes that a 1 percent increase in inflation will result in a corresponding 0.030 percent increase in the IEDI. The use of inflation as a metric for assessing a nation's economic stability. The fluctuation of inflation rates, whether increasing or decreasing, is indicative of the economic instability of a nation. The elevated inflation rate poses a significant detriment to the nation. Notwithstanding, if inflation is low, it may not necessarily have an adverse effect on the economy. The phenomenon of low inflation has the potential to stimulate economic growth. The rationale behind this phenomenon is that inflation can serve as a driving force for entrepreneurs to augment their production levels. This is due to the fact that as prices rise, entrepreneurs are able to generate greater profits. Furthermore, augmented production yields an additional favorable outcome, specifically heightened employment. The implementation of inflation must be accompanied by appropriate government policies concerning the establishment of inflation rates (Simanungkalit, 2020).

The Influence of Average Length of School on the Inclusive Economic Development Index in Java Island.
The coefficient $\beta 3$ with a value of 0.981 indicates that a 1 percent increase in the average length of schooling is associated with a 0.981 percent increase in the IEDI. The regression analysis indicates that there exists a positive and statistically significant relationship between the average length of schooling and the IEDI. It can be inferred that a one-unit increase in the average length of schooling is associated with a 0.560% increase in the IEDI. The duration of schooling has a significant impact on the economic progress. The acquisition of knowledge and skills through education has the potential to enhance the growth and advancement of human resources. The process of economic development necessitates the acquisition of not only physical capital, but also human capital. A higher proportion of residents who attain high school and tertiary education levels is indicative of a higher quality population (Asih, 2015).

5. Conclusion and Suggestion
Based on the results of the analysis that has been carried out in this study, the conclusions are a). Based on statistical tests, inclusive economic development between provinces in Java Island does not have significant spatial linkages. This means that the achievement of the IEDI score on the island of Java is not affected by the IEDI value in the surrounding/neighboring areas. b). The open unemployment rate has a significant negative effect on the IEDI. Which means if the open unemployment rate increases, it will affect the decline in the IEDI. c). The inflation variable has a positive and significant effect on the IEDI. Which means that if inflation experiences a weak increase, it will affect the IEDI. d). The average length of school variable has a significant positive effect on the IEDI. Which means if the average length of schooling increases, it will affect the increase in the IEDI.

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