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Revisiting the Democracy– Economic Growth Nexus: A Spatial Perspective

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Abstract

Regional economy is influenced not only by local factors but also by neighboring factors. This study examines the effect of the Indonesia Democracy Index (IDI) on Provincial Gross Regional Domestic Products (GRDP) in Indonesia from 2016 to 2023. Using both Ordinary Least Square (OLS) and the Spatial Error Model (SEM), this study is one step forward to understanding in ordinary and spatial approach. This study has Average Years of School, Life Expectancy, Domestic Investment, Foreign Investment, Length of Road, and Population Density as control variables, the analysis finds that democracy has a statistically significant negative effect on the provincial economy. But most of the previous studies found the opposite, democracy has a positive effect on the economy. Additionally, the increasing Moran's I values for IDI indicate a growing level of spatial dependence over time analysis. These findings highlight the importance of incorporating spatial dynamics into economic analysis, as unobserved factors associated with democratic conditions appear to be spatially correlated.

Keywords

regional economy; spatial econometrics; spatial error model; Indonesia Democracy Index

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1. INTRODUCTION

Democracy is a utopia. The authors clearly include democracy in their visions of a good society because they think it is a normatively compelling, and in that sense utopian, ideal, the four ideals or principles are: inclusion; political freedom; equality; and deliberation (Sabia, 2006). Perhaps democracy could be said to be utopian insofar as it demonstrates the capacity to think against the conditions of the present and utopia could be said to be democratic insofar as it demonstrates a desire for a more participatory, more egalitarian society (Nelson, 2024). A notable distinction exists among democratic institutional systems—parliamentary, mixed (semi-presidential), and presidential. Presidential democracies, in particular, display evident institutional weaknesses (Przeworski, 2019).

No accumulated evidence of democracy being detrimental to the economy, although it has zero direct effect but the indirect effect has significant effects on the economy through various channels (Doucouliagos & Ulubaşoğlu, 2008). The effect of democracy on the economy is subtle, indirect, and

contingent on levels of development (Baum & Lake, 2003). The positive effect of democracy on economic growth suggests 3 channels through which democracy could affect economic growth: property rights, democracy offers better protection of property rights and thereby encourages growth; political stability, greater stability of government with beneficial effects on growth; technological innovation, democracy promotes innovation and technical progress and thus improves results in economic terms (Ghardallou & Sridi, 2020). Various studies in the literature on democracy and economics have shown mixed findings regarding the effect of democracy on economic growth, including no effect, a negative effect, and a positive effect (Knutsen, 2012).

This paper examines the effect of democracy on Indonesia's regional economy, addressing a critical gap in the literature on democracy and the economy. Using panel data from all 34 provinces (2016–2023), we employ both Ordinary Least Squares (OLS) and the Spatial Error Model (SEM) to account for potential spatial dependence in economic outcomes. Our study makes two key contributions: First, unlike prior studies that rely on national-level democracy measures, we utilize the regional democracy level as an independent variable, offering a novel subnational perspective on how democratic quality influences regional economy. Second, recognizing that economic spillovers between neighboring regions may bias traditional regression results, we implement a Spatial Error Model with distance-based weights, ensuring more precise and robust estimates.

Democracy has always meant the power of the people (Nelson, 2024). All members are to be treated as if they were equally qualified to participate in making decisions about the policies, or we can say, politically equal (Dahl, 2020). Democracies generally approximate a situation of political equality that, in turn, represents the preferences of a much smaller subset of society and thus correspond more to a situation of political inequality (Acemoglu et al., 2019). Democratic political institutions provide a crucial level of mediation and aggregation between structural factors, not only individuals but also the diverse groupings under which society organizes its multiple interests and identities (Dix, 1994).

While democracy is often associated with positive ideals, it is not without its drawbacks. As Beerbohm (2015) notes, no theoretical framework can fully safeguard leadership within a democratic system. Two major critiques of democracy emerge in political thought: first, from anarchist perspectives, which oppose the state due to its coercive nature; and second, from the concept of guardianship, which serves as a foundational argument for hierarchical rule and stands as one of democracy's strongest ideological challengers (Dahl, 2020). Thoreau, in his influential essay, offers two central criticisms: the government's failure to obtain genuine consent from the governed and its inability to adequately represent them (Jenco, 2003). Additionally, Santas (2007) highlights structural issues in governance, such as the separation between political authority and economic power, as well as the challenges of

maintaining economic equality—concerns that have historically troubled both ancient and modern democratic societies.

The debate on the relationship between democracy and the economy is like a never-ending story. Democracy is not a one-way ladder that countries climb as their economy and social structures develop (Arat, 1988). Democracy may have a positive effect on the economy (Acemoglu et al., 2019; Baum & Lake, 2003; Burkhart & Lewis-Beck, 1994; Doucouliagos & Ulubaşoğlu, 2008; KRIECKHAUS, 2006; LEBLANG, 1997; Narayan et al., 2011; Rodrik, 1999). Or democracy may have a negative effect on the economy (Erich Weede, 1983; Tavares & Wacziarg, 2001). Even democracy and the economy have a causality effect, economic growth causes democracy, as democracy causes economic growth (Heo & Tan, 2001).

Some previous studies present mixed or inconclusive findings. Przeworski (2004) argues that democracy has no predictable pattern, its survival depends on a few, easily identifiable, factors. Similarly, De Haan & Siermann (1996) find that the link between democracy and economic performance is not robust. Knutsen (2012) notes that the literature includes evidence of positive, negative, and neutral effects of democracy on the economy. According to Krieckhaus (2006), these varied outcomes suggest that democracy's effect may depend heavily on specific political contexts. Bhagwati (1995) observes that it is difficult to establish a clear connection between the presence or absence of democracy and a country's economic growth rate. Echoing this, Helliwell (1994) concludes that it remains difficult to identify any systematic net effect of democracy on economic outcomes

Democracy may affect the economy, not in the short-run, but in the long-run (Abdellatif, 2003; Erich Weede, 1983). If democracy is maintained over time, it will influence economic performance through four main channels: physical; human; social; political (Gerring et al., 2005). The effect of democracy on economic growth suggests 3 channels through which democracy could affect economic growth: (1) property rights; (2) political stability; (3) technological innovation (Ghardallou & Sridi, 2020).

Education is systematically related to cognitive skills and strongly affects the economy (E. A. Hanushek & Woessmann, 2020; E. Hanushek & Woessmann, 2007). It might affect through the diffusion of new technology (Barro, 2002; Bils & Klenow, 2000), more investment in physical capital requires more educated workers to learn new technology (Lin, 2003). Previous studies found that education positively affects the economy(Barro, 2001, 2002; E. A. Hanushek & Woessmann, 2020; E. Hanushek & Woessmann, 2007; Krueger & Lindahl, 2001; Reza & Widodo, 2013; Sianesi & Reenen, 2003; Tsamadias & Prontzas, 2012). Previous studies found health has a positive effect on the economy (Biyase & Malesa, 2019; D. Bloom et al., 2001; de la Croix & Licandro, 1999; Ecevit, 2013; Ngangue & Manfred, 2015; Weil, 2014). Students' health affects their education, healthier students can learn more in school, and have

long-lasting implications for the labor force and productivity in the future, healthier people can work harder (D. E. Bloom et al., 2018; Weil, 2014).

Investment effect on the economy can be seen from Investment as one of the components of GDP as shown in equation 1 where: Y stands for GDP; C stands for consumption; I stands for investment; G stands for government purchases; NX stands for net export (export minus import) (Mankiw, 2015). From this equation, we know that investment (I) has a positive correlation with GDP (Y), as investment increases, so does the GDP and vice versa. Previous studies confirm that investment has a positive effect on the economy (Adams, 2009; Bakari, 2017, 2018; Barro, 2003; Ghazali, 2010; Ilegbinosa et al., 2003; Tang et al., 2008). Although there is also an ambiguous finding, that is, foreign investment has a positive effect while domestic investment has a negative effect on the economy (Lean & Tan, 2011).

$$Y=C+I+G+NX \quad (1)$$

Infrastructure is defined to include the sectors of transportation, water and sanitation, power, telecommunications, and irrigation (Kessides, 1993). It plays a crucial role in the economy by providing the basic foundation on which the superstructure of development and growth (Familoni, 2006). Some previous study agree road as infrastructure positively affect the economy (Kessides, 1993; Ng et al., 2019; Peter et al., 2015; Queiroz & Gautam, 1992; Wang et al., 2020). Population density plays an important role in a country. If it is too high, it can make the country poor due to low resource endowment per capita, and if it is too low, it will lead to higher costs of building and maintaining infrastructure (Yegorov, 2015). Some previous studies agree that population density positively affects the economy (Chen et al., 2023; Deole & Gallaa, 2015).

2. METHODS

2.1 Variable Description

Table 1 shows the description of all variables used. This paper used 34 provinces data in Indonesia from 2016-2023 collected from Indonesia's Central Bureau of Statistics. Gross Regional Domestic Product (GRDP) at 2010 constant prices is employed as the dependent variable to measure the annual economic output of each province. The Indonesia Democracy Index (IDI) serves as the independent variable, capturing the quality of democratic conditions across provinces. The analysis is conducted at the provincial level due to data availability constraints. Specifically, the Indonesia Democracy Index is only available for provinces, preventing a more disaggregated analysis at the regency/city level.

Table 1: Variables Definition

Variable	Symbol	Meaning	Unit
Dependent variable	GRDP	Gross Regional Domestic Product at a constant price of 2010	Billion Rupiah
Independent Variable	IDI	Indonesia democracy index	Index
Control variables	AYOS	Average year of school	Year
	LE	Life expectancy	Year
	DI	Domestic investment	Rupiah
	FI	Foreign investment	Rupiah
	RD	Road length	Kilometer
	PD	Population density	People/Km^2

Figure 1 illustrates the distribution of GRDP across Indonesian provinces. With the exception of those located in Java, most provinces display darker shades, indicating lower GRDP levels. This pattern suggests that economic activity in Indonesia remains heavily concentrated on the island of Java. On average, the provinces with the highest GRDP include DKI Jakarta, East Java, West Java, Central Java, and North Sumatra. Furthermore, a closer examination reveals that the GRDP levels across most provinces remained relatively consistent from 2016 to 2023.

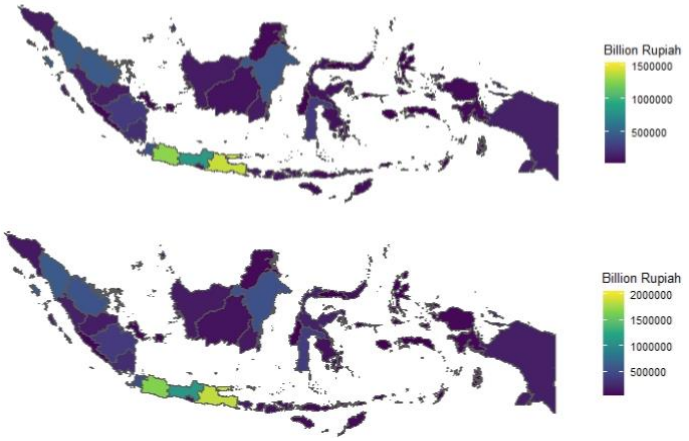

Figure 1: Provincial Gross Regional Domestic Product (GRDP) 2016 and 2023

Figure 2 reveals more noticeable color variations across the years of analysis. However, a consistent pattern is observed in Papua and West Papua Provinces, where the IDI remains in the darkest shades, indicating persistently low levels of IDI.

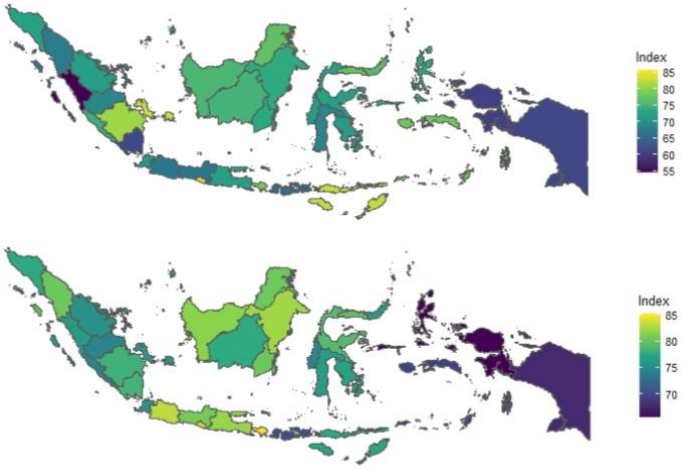

Figure 2: Provincial Indonesia Democracy Index (IDI) 2016 and 2023

2.2 Research Design

2.2.1 Autocorrelation

To capture the spatial autocorrelation, this paper used Global Moran's I. The equation for Global Moran's I is below.

$$I = \frac{N}{S_0} \frac{\sum_{i=1}^{N} \sum_{j=1}^{N} w_{ij}(x_i - \overline{x})(x_j - \overline{x})}{\sum_{i=1}^{N} (x_i - \overline{x})^2} \quad (2)$$

In Equation 2, N represents the number of provinces; w_{ij} denotes the spatial weight between provinces i and j, this study using distance-based weight matrix; x_i and x_j are the values of the variable of interest at locations i and j, respectively; and , $\overline{x}$ is the mean of those values. The value of Moran's I ranges from -1 to 1, where I < 0 indicates negative spatial autocorrelation, and I > 0 indicates positive spatial autocorrelation.

2.2.2 Multicollinearity

To test the correlation between variables, this paper uses the Variance Inflation Factor (VIF). The equation for VIF is below.

$$VIF(X_j) = \frac{1}{1 - R_j^2} \quad (3)$$

In Equation 3, R_j^2 represents the coefficient of determination obtained by regressing the predictor X_j on all other predictor variables. A Variance Inflation Factor (VIF) value of 1 indicates no correlation between the predictor and the other variables. A VIF between 1 and 5 suggests moderate multicollinearity, while a VIF of 5 or greater indicates a high degree of multicollinearity.

2.2.3 Ordinary Least Square

Besides of Spatial Error Model, this paper also uses Ordinary Least Square (OLS) so it shows the difference between using 'ordinary' econometrics and spatial econometrics. The equation for OLS is below.

$$lnGRDP = \beta_0 + \beta_1 IDI + \beta_2 lnAYOS + \beta_3 lnLE + \beta_4 lnDI + \beta_5 lnFI + \beta_6 GRC + \beta_7 lnPD + \epsilon \quad (4)$$

In equation 4 β shows the effect of independent and control variables on GRDP; lnIDI is the independent variable; lnAYOS, lnLE, lnDI, lnFI, lnGRC, and lnPD are the control variables.

2.2.4 Spatial Error Model

The Spatial Error Model (SEM) was chosen for this study based on the results of the Lagrange Multiplier (LM) test, which confirmed that the data exhibited characteristics suitable for this modeling approach. SEM is particularly appropriate when spatial dependence is present in the error term rather than in the dependent variable itself. This choice aligns with Tobler's First Law of Geography, which states, "everything is related to everything else, but near things are more related than distant things" (Tobler, 1970). In the context of regional economic analysis, this implies that the characteristics or performance of one region are likely to be influenced by neighboring regions through unobserved factors. Recognizing that each region interacts with others, this study adopts the SEM framework to effectively capture and control for spatial autocorrelation in the error terms. The mathematical representation of the SEM is presented in the following equation.

$$lnGRDP_{it} = \beta_0 + \beta_1 lnIDI_{it} + \beta_2 lnAYOS_{it} + \beta_3 lnLE_{it} + \beta_4 lnDI_{it} + \beta_5 lnFI_{it} + \beta_6 lnRD_{it} + \beta_7 lnPD_{it} + u_{it} \quad (5)$$

$$u_{it} = \lambda W u_{it} + \epsilon_{it} \quad (6)$$

In equation 5 and 6, i denotes the province, t denotes year; β is the coefficient vector; u is the spatially correlated error term; λ is the spatial error coefficient; W is n × n order geographical distance-based spatial weights matrix with neighbor threshold of 700km; ϵ is the uncorrelated error term. With GRDP as the dependent variable; IDI as the independent variable; lnAYOS, lnLE, lnDI, lnFI, lnRD, and lnPD as control variables.

3. FINDINGS AND DISCUSSION

3.1 Spatial Dependency

It is important to run a spatial dependency test first to see the spatial autocorrelation. Using Global Moran's I, Table 2 shows the spatial dependency of GRDP and IDI from 2016 to 2023.

Table 2: GRDP and IDI Autocorrelation with Global Moran's I

Year	GRDP		IDI	
	Moran's I	p-value	Moran's I	p-value
2016	0.214**	0.007	0.000**	0.008
2017	0.214**	0.007	0.227**	0.008
2018	0.215**	0.007	0.156**	0.008
2019	0.216**	0.007	0.356**	0.008
2020	0.214**	0.007	0.200**	0.008
2021	0.213**	0.007	0.425**	0.008
2022	0.212**	0.007	0.544**	0.008
2023	0.211**	0.007	0.554**	0.008

The results reveal a statistically significant positive spatial autocorrelation in both GRDP and IDI, indicating that regions with similar values tend to be geographically clustered. For economic performance, Moran's I values for GRDP demonstrate remarkable stability throughout the study period (0.211-0.214, $p < 0.01$), indicating persistent and statistically significant spatial dependence in regional development patterns. This suggests that neighboring provinces consistently share comparable economic outcomes, potentially due to spillover effects or shared regional advantages.

In contrast, the spatial patterns of Indonesia Democracy Index (IDI) show greater temporal variability, with Moran's I values evolving from negligible (0.000) to strongly positive (0.554), while maintaining $p < 0.01$. This dynamic trajectory reveals an intensification of spatial dependence in democratic performance over time–beginning with minimal clustering and culminating in pronounced geographic concentration. The strengthening spatial autocorrelation in IDI suggests that democratic conditions have become increasingly influenced by neighborhood effects, possibly through mechanisms of policy diffusion, cultural transmission, or inter-regional political learning.

3.2 Multicollinearity

Multicollinearity among the independent and control variables in this study was assessed using the Variance Inflation Factor (VIF) test. This diagnostic tool is essential for evaluating the degree of linear correlation among predictor variables, which is a critical step to ensure the robustness and interpretability of the regression coefficients within the spatial econometric models applied. High levels of multicollinearity can significantly inflate the standard errors of the estimated coefficients, reduce statistical power, and potentially distort the true relationships between variables. By identifying and addressing multicollinearity, the study aims to enhance the reliability and validity of its empirical findings.

Table 3 shows that all of the independent and control variables have VIF scores between 1 and 5, indicating a moderate level of multicollinearity. It means all of the independent and control variables

used are moderately correlated with each other. According to common thresholds, VIF values below 5 suggest that multicollinearity is not severe enough to bias the regression estimates significantly.

Table 3: Multicollinearity Test with VIF

Variables	VIF
lnIDI	1.510
lnAYOS	1.470
lnLE	2.086
lnDI	2.389
lnFI	1.507
lnRD	1.496
lnPD	1.518

3.3 OLS and Spatial Error Model

This research uses OLS first before the Spatial Error Model (SEM) to see how the result is without spatial effects. Table 4 shows that IDI is the only variable that has a negative and statistically significant effect on GRDP, while the rest are statistically significant positive on GRDP except AYOS. AYOS is the only variable with statistically non-significant OLS results, it was positive but not statistically significant on GRDP.

Table 4: OLS and Spatial Error Model Results

Variable	OLS		Spatial Error Model	
	Coefficient	p-value	Coefficient	p-value
lnIDI	-1.210**	0.003	-0.716*	0.033
lnAYOS	0.023	0.935	0.167	0.609
lnLE	6.840***	0.000	7.778***	0.000
lnDI	0.158***	0.000	0.134***	0.000
lnFI	0.187***	0.000	0.162***	0.000
lnRD	0.619***	0.000	0.642***	0.000
lnPD	0.247***	0.000	0.372***	0.000
R^2	0.8577	0.000		
LM Error	447.94	0.000		
LM lag	14.377	0.000		
Robust LM error	435.05	0.000		
Robusr LM lag	1.4485	0.222		
Lambda			0.969	0.000
LR test value			104.99	0.000

The R^2 value of 0.8577 in the OLS suggests a goodness of fit, indicating that approximately 85.77% of the variation in GRDP is explained by the included variables. Diagnostic tests confirm significant spatial dependence in the error term: both the standard Lagrange Multiplier (LM) tests for spatial error

(447.94, $p < 0.001$) and spatial lag (14.377, $p < 0.001$) are statistically significant. The robust LM error test (435.05, $p < 0.001$) further validates the presence of spatial error autocorrelation, while the robust LM lag test (1.449, $p = 0.222$) fails to reject the null hypothesis, suggesting that a spatial error model (SEM) is more appropriate than a spatial lag model for these data. This is reinforced by the highly significant spatial autoregressive coefficient ($\lambda = 0.969$, $p < 0.001$), which indicates strong positive spatial spillover effects in unobserved factors. The likelihood ratio (LR) test (104.99, $p < 0.001$) confirms that the SEM specification significantly improves model fit compared to a non-spatial ordinary least squares (OLS) approach.

Among the control variables, AYOS is the only one that does not show a statistically significant relationship with GRDP. In contrast, all other control variables have a positive and statistically significant effect on GRDP. Regarding the independent variable, IDI, the results indicate a negative and statistically significant effect on GRDP, consistent with the findings from the OLS model. However, a difference lies in the level of significance: while IDI is significant at the 1% level in the OLS estimation, it is significant at the 5% level in the Spatial Error Model (SEM).

The findings of this study regarding the relationship between democracy and the economy diverge from those of several previous studies. While some researchers have found a positive relationship between democracy and economic performance (Acemoglu et al., 2019; Baum & Lake, 2003; Doucouliagos & Ulubaşoğlu, 2008; LEBLANG, 1997; Rodrik, 1999), others suggest that democracy may have a weak negative effect (Erich Weede, 1983). Additionally, a number of studies have produced ambiguous or inconclusive results. (Przeworski, 2004), for example, argues that democracy does not follow a consistent economic pattern and that its endurance depends on a few identifiable factors. Similarly, Knutsen (2012) notes that existing research reflects a range of outcomes—including no effect, negative effects, and positive effects—making it difficult to draw firm conclusions. Bhagwati (1995) further emphasizes the challenge of establishing a strong link between the presence or absence of democracy and a country's economic performance. (Helliwell, 1994) reinforces this view, concluding that identifying any systematic net effect of democracy on economic growth remains elusive.

The results indicate that the IDI has a negative and statistically significant effect on GRDP, with a coefficient of –0.716. Additionally, the rising Moran's I values—from 0.000 in 2016 to 0.554 in 2023—highlight a notable increase in spatial dependency over time. This trend suggests that democratic conditions in one region are becoming more interconnected with those in neighboring areas, implying that changes in IDI at the local level may exert a stronger influence across regional boundaries. These findings underscore the importance of incorporating spatial interdependencies into policy design, as regionally isolated interventions risk overlooking broader, interregional effects.

According to data from the Central Bureau of Statistics, GRDP across all provinces generally demonstrated positive growth, with few exceptions. In 2018 and 2019, only one out of 34 provinces recorded negative growth. However, the impact of the COVID-19 pandemic was severe in 2020, with 31 out of 34 provinces experiencing economic contraction. By 2021, this number dropped significantly to only two provinces. These results are consistent with prior studies that documented widespread economic decline during the pandemic, driven by various disruptions (Kolahchi et al., 2021; König & Winkler, 2021; Naseer et al., 2023). In contrast, during the remaining years analyzed—2017, 2022, and 2023—all provinces experienced an increase in the economy.

Unlike GRDP, the annual growth of IDI follows a more volatile pattern, with at least 10 provinces experiencing negative IDI growth each year. Between 2017 and 2023, the number of provinces with declining IDI values was 16, 14, 13, 17, 15, 10, and 21, respectively. In 2023, this number peaked, with 21 provinces reporting negative growth in IDI. These contrasting trends suggest that, despite widespread economic recovery and growth—particularly after the pandemic—many provinces continued to face setbacks in democratic development. The analysis confirms a negative association between IDI and GRDP at the provincial level. However, the underlying causes of this relationship remain unclear. Further research is necessary to investigate potential mechanisms, such as policy shifts, governance inefficiencies, or political instability, that may explain the observed negative effect of democracy on the economy.

Among the control variables, AYOS (average year of school) is the only one that is not statistically significant, although its coefficient is positive. This suggests that, while higher education levels may contribute to higher GRDP, the relationship is not strong enough in this study to reach statistical significance. Nonetheless, this finding is in line with numerous previous studies that have established a positive link between education and economic performance (Barro, 2001, 2002; E. A. Hanushek & Woessmann, 2020; E. Hanushek & Woessmann, 2007; Krueger & Lindahl, 2001; Reza & Widodo, 2013; Sianesi & Reenen, 2003; Tsamadias & Prontzas, 2012).

In contrast, LE (life expectancy) shows the highest coefficient among all independent and control variables, at 7.778, and is both positive and statistically significant. This result underscores the strong contribution of health to economic performance and aligns with prior research that highlights the critical role of health in promoting the economy (Biyase & Malesa, 2019; D. Bloom et al., 2001; de la Croix & Licandro, 1999; Ecevit, 2013; Ngangue & Manfred, 2015; Weil, 2014).

Additionally, both DI (domestic investment) and FI (foreign investment) exhibit positive and statistically significant effects on GRDP, with coefficients of 0.134 and 0.162, respectively. These findings indicate that increased levels of both domestic and foreign investment are associated with higher regional economic output. This result is consistent with Equation 1 and supported by previous studies

that emphasize the positive effect of investment—both domestic and foreign—on the economy(Adams, 2009; Bakari, 2017, 2018; Barro, 2003; Ghazali, 2010; Ilegbinosa et al., 2003; Tang et al., 2008)

The variable RD (road length) has a positive and statistically significant effect on GRDP, with a coefficient of 0.642. This indicates that an increase in road length is associated with higher regional economic output. This finding is consistent with previous studies that have demonstrated the positive impact of transportation infrastructure, particularly roads, on the economy (Adams, 2009; Bakari, 2017, 2018; Barro, 2003; Ilegbinosa et al., 2003; Tang et al., 2008).

4. CONCLUSION

Democracy is often associated with numerous positive outcomes, and several previous studies have found that it contributes positively to the economy (Acemoglu et al., 2019; Baum & Lake, 2003; Doucouliagos & Ulubaşoğlu, 2008; LEBLANG, 1997; Rodrik, 1999) However, other research has reported a weak negative relationship between democracy and economic performance (Erich Weede, 1983), while some studies remain inconclusive or show mixed results.

Using panel data from 34 Indonesian provinces over the period 2016–2023, sourced from the Central Bureau of Statistics, this study applied a Spatial Error Model (SEM) to account for strong spatial dependence in the error term. The spatial autoregressive coefficient (λ = 0.969) confirms a very high level of spatial autocorrelation, justifying the use of SEM over conventional models.

The findings reveal a surprising result: the Indonesia Democracy Index (IDI) has a negative and statistically significant effect on GRDP. This contrasts with much of the existing literature, which generally reports a positive or insignificant effect of democracy on economic performance. It implies that, in the Indonesian context during the study period, higher levels of democracy are associated with lower economic output and vice versa. This study contributes to the ongoing debate on the democracy–growth nexus by providing evidence that the impact of democracy can vary across countries and regions. It also calls for further investigation into the underlying mechanisms, such as institutional quality, governance practices, or regional disparities, that may explain this inverse relationship.

From a policy perspective, the findings indicate that efforts to strengthen democracy should be accompanied by improvements in governance quality, bureaucratic efficiency, and policy implementation. Enhancing democratic institutions alone may not be sufficient to promote economic growth if institutional weaknesses hinder the effective delivery of public services and development programs. Policymakers should therefore focus on ensuring that democratic governance is supported by strong institutions capable of fostering a conducive environment for economic development. Future research is encouraged to incorporate additional institutional and governance variables and to explore the democracy–growth relationship at a more disaggregated spatial scale when data become available.

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