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Research.

The Effect of Electronic-Based Government Systems (SPBE) on Regional Tax Growth

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Abstract. *Indonesian local governments are mandated to enhance public service quality and strengthen regional fiscal capacity through digital government transformation. This study examines the impact of the Electronic-Based Government System (SPBE) implementation on regional tax growth among Indonesian provincial governments. A quantitative, explanatory research design was utilized, drawing on secondary data from the Ministry of Administrative and Bureaucratic Reform, the Directorate General of Fiscal Balance, Statistics Indonesia, and provincial government financial reports for the 2021–2024 period. Data analysis involved descriptive statistics, correlation analysis, and multiple linear regression using a pooled Ordinary Least Squares (pooled OLS) approach. The findings reveal that SPBE implementation does not significantly influence regional tax growth, as indicated by a negative coefficient of -0.0430 and a p-value of 0.1441. Conversely, regional fiscal independence, measured by the PAD Ratio, demonstrates a positive and significant effect on regional tax growth. These results suggest that digital government transformation has not directly improved regional fiscal capacity. The study suggests that digital government transformation alone may not be sufficient to strengthen regional fiscal performance without stronger institutional readiness and effective fiscal administration.*

Keywords: SPBE; regional tax growth; fiscal capacity; digital governance; local government

INTRODUCTION

Background

Regional taxes constitute a primary source of Regional Original Revenue (Pendapatan Asli Daerah/PAD) within Indonesia's fiscal decentralization framework. The capacity of local governments to increase tax revenue is linked not only to financing regional development but also to the degree of regional fiscal independence. Regions with higher tax revenues typically possess greater flexibility to fund public services, infrastructure projects, and social programs. (Oates, 2008) argues that fiscal decentralization grants local governments the authority to manage revenue sources in line with local characteristics and regional needs.

Regional tax revenue growth among Indonesian provincial governments varies considerably, reflecting differences in governance quality, tax administration effectiveness, and institutional capacity. (North, 1991) highlights the critical role of institutional quality in determining the effectiveness of economic activity and public administration.

Advances in information technology have gradually changed how local governments manage public administration and deliver public services. Many public services that were previously handled manually are now being moved to digital systems. At the same time, public expectations regarding transparency, accessibility, and service speed continue to increase. In response, the Indonesian government has promoted the implementation of the Electronic-Based Government System (Sistem Pemerintahan Berbasis Elektronik/SPBE) as a component of bureaucratic reform and digital government transformation.

Many Indonesian local governments have digitalized licensing, financial administration, and tax services through integrated electronic platforms. (Dias, 2020) argues that the effectiveness of e-government implementation depends not only on technology but also on organizational and institutional capacity. Consequently, the quality of digital government implementation varies across local governments.

Digitalization can improve administrative effectiveness. Digital systems simplify payment processes, support taxpayer data integration, and strengthen administrative monitoring. (Okunogbe & Santoro, 2022) argue that digital tax administration can help governments improve tax base identification, strengthen compliance monitoring, and enhance tax administration efficiency. Similarly, (Zhang & She, 2024) state that digital transformation can improve organizational information quality and strengthen internal control effectiveness in tax management.

Despite the growing implementation of SPBE across Indonesian local governments, empirical evidence regarding its contribution to regional fiscal performance remains limited. Existing studies have largely focused on e-government adoption, public service quality, transparency, accountability, and public value creation, while relatively little attention has been given to the relationship between digital government implementation and regional tax growth. Furthermore, research examining this relationship within the context of Indonesian provincial governments remains scarce. This gap is important because regional tax revenue constitutes a major source of local fiscal capacity and plays a critical role in supporting regional development.

This research gap provides an opportunity to further examine whether digital government reforms contribute to regional fiscal outcomes. Unlike previous studies that primarily examine e-government in relation to public service quality, transparency, accountability, and public value creation, this study specifically investigates the relationship between SPBE implementation and regional tax growth at the provincial government level in Indonesia.

Research Questions

1. How does the Electronic-Based Government System (SPBE) affect regional tax growth among provincial governments in Indonesia?
2. How do regional fiscal independence and regional economic characteristics influence regional tax growth?
3. To what extent does SPBE implementation contribute to regional tax performance within the context of fiscal decentralization in Indonesia?
4. Based on these research questions, this study aims to examine the effect of SPBE implementation on regional tax growth among provincial governments in Indonesia while controlling for regional fiscal independence and regional economic characteristics. The study contributes to the growing literature on digital government and fiscal decentralization by providing empirical evidence on whether improvements in SPBE implementation are associated with stronger regional tax performance and local fiscal capacity among Indonesian provincial governments.

LITERATURE REVIEW

1. Fiscal Federalism and Regional Fiscal Capacity

Within a fiscal decentralization system, local governments are expected to strengthen their revenue-generating capacity to support public service financing, with regional taxes serving as a key source of Regional Original Revenue (PAD) and fiscal independence. However, the ability to increase tax revenue depends not only on regional economic potential but also on the quality of tax administration. Many local governments in Indonesia continue to face challenges such as fragmented taxpayer databases, limited transaction monitoring, and weak oversight of tax payments. From an institutional perspective, efficient and transparent administrative systems contribute to stronger fiscal management capacity, making improvements in tax administration essential for sustaining regional tax revenue growth (North, 1991).

2. Digital Governance and SPBE

Digital transformation has emerged as a response to demands for more effective and transparent governance. In this context, the Electronic-Based Government System (SPBE) is not limited to the use of electronic applications but also involves changes to governmental administrative processes enabled by data integration and digital systems.

(Dias, 2020) explains that e-government implementation is influenced by organizational readiness, institutional capacity, and technological infrastructure support. In regional tax administration, digitalization is particularly important because manual systems often lead to low data accuracy, reporting delays, and weak monitoring of regional economic transactions.

Through SPBE, local governments can strengthen tax administration using e-payment systems, online tax services, and integrated databases. Digital technology is considered capable of improving tax base identification, compliance monitoring, and the quality of tax administration services (Okunogbe & Santoro, 2022). In addition to improving supervision, faster and more transparent tax services may also encourage greater voluntary compliance among local taxpayers.

3. Institutional Theory and SPBE Implementation

The implementation of SPBE in local governments can also be understood through institutional theory. Public organizations often experience change not only due to efficiency needs but also under regulatory pressure and demands from the organizational environment.

(Dimaggio & Powell, 1983) explain that organizations tend to experience institutional isomorphism under coercive, normative, and mimetic pressures. In the context of Indonesian local governments, these pressures are reflected in national SPBE policies, demands for greater bureaucratic transparency, and the tendency of regions to imitate digital practices from other regions considered successful.

SPBE implementation is also closely related to local governments' efforts to strengthen public service legitimacy. More transparent and accessible tax services may improve public trust in local governments.

4. SPBE and Regional Tax Growth

The relationship between SPBE and regional tax growth can be explained through improvements in local tax administrative capacity. Digital systems allow local governments to strengthen tax data integration, accelerate transaction validation, and improve real-time monitoring of regional tax payments.

One of the main problems in regional tax administration in Indonesia is weak data synchronization and limited supervision of regional economic transactions. These conditions may lead to tax leakage and reduced effectiveness in revenue collection. Through SPBE implementation, local governments are expected to strengthen monitoring mechanisms through integrated databases and digital payment systems.

Digital transformation may also improve the quality of regional tax services. Tax payment and reporting processes become easier, faster, and more transparent, which may encourage greater taxpayer compliance. Previous studies indicate that digital transformation can improve the transparency of information and strengthen tax administration monitoring (Zhang & She, 2024). The stronger the digital administrative capacity of local governments, the greater the opportunity to improve the effectiveness of regional tax collection.

6. Hypothesis Development

The effectiveness of regional tax administration in the digital era is influenced not only by regional economic potential but also by local governments' ability to manage technology-based administrative systems. SPBE implementation enables local governments to strengthen tax data integration, improve transaction monitoring, and enhance the quality of regional tax administration services.

Nevertheless, evidence regarding the fiscal impact of digital government remains inconclusive, particularly in developing countries where administrative integration and institutional readiness often vary substantially across regions. Although previous studies generally argue that digital transformation can improve the effectiveness of tax administration, empirical findings remain mixed. Therefore, SPBE implementation is expected to positively affect regional tax growth among provincial governments in Indonesia.

H1: The Electronic-Based Government System (SPBE) has a positive effect on regional tax growth among provincial governments in Indonesia.

RESEARCH METHODS

This study employed a quantitative, explanatory research design to examine the relationship between the implementation of the Electronic-Based Government System (SPBE) and regional tax growth among provincial governments in Indonesia. A quantitative approach was selected because the study focuses on testing relationships among variables using numerical data and statistical analysis.

The study used secondary data obtained from official government institutions in Indonesia. SPBE data were obtained from official evaluation reports issued by the Ministry of Administrative and Bureaucratic Reform (2021–2024) (Decree of the Minister of Administrative and Bureaucratic Reform of the Republic of Indonesia Number 1503 of 2021 Concerning the Results of the Evaluation of the Electronic-Based Government System in Ministries, Agencies, and Regional Governments in 2021, 2021), (Decree of the Minister of Administrative and Bureaucratic Reform of the Republic of Indonesia Number 108 of 2023 Concerning the Results of the Monitoring & Evaluation of the Electronic-Based Government System in Central and Regional Government Institution, 2023), (Decree of the Minister of Administrative and Bureaucratic Reform of the Republic of Indonesia Number 13 of 2024 Concerning the Results of the Evaluation of the Electronic-Based Government System in

Central Government Institutions and Regional Governments, 2024), (Decree of the Minister of Administrative and Bureaucratic Reform of the Republic of Indonesia Number 663 of 2024 Concerning the Results of the Evaluation of the Electronic-Based Government System in Central and Regional Government Institutions in 2024, 2024)). Since 2021, the SPBE evaluation has adopted a new assessment instrument based on Minister of Administrative and Bureaucratic Reform Regulation No. 59 of 2020 concerning the Monitoring and Evaluation of the Electronic-Based Government System (Minister of Administrative and Bureaucratic Reform Regulation No. 59 of 2020, 2020).

Regional tax revenue and Regional Original Revenue (PAD) data were obtained from annual regional fiscal statistics and regional government financial publications issued by the Directorate General of Fiscal Balance (DJPK) and Statistics Indonesia (BPS) for the 2021–2024 period (Directorate General of Fiscal Balance, 2024); (Statistics Indonesia, 2024). The study employed panel data consisting of provincial governments in Indonesia during the 2020–2024 period.

Regional tax growth data covered the 2022–2024 period using 2020 as the base year. The use of 2020 as the baseline was intended to observe developments in regional tax revenue following the implementation of the new SPBE evaluation framework while also reflecting regional revenue recovery in the post-COVID-19 period.

The study employed a saturated sampling approach covering 34 Indonesian provincial governments with complete fiscal and SPBE data during the observation period, excluding four newly established provinces due to data unavailability.Regional tax growth was the dependent variable, measured as the percentage change in regional tax revenue from the previous year. The SPBE index served as the main independent variable. In addition, several control variables were included to account for regional characteristics that may influence regional tax growth, namely, regional economic size proxied by the natural logarithm of Gross Regional Domestic Product (ln GRDP), regional fiscal independence measured using the ratio of Regional Original Revenue (PAD) to total regional revenue, and the natural logarithm of population size (ln Population).

Research data were collected from official government reports, national SPBE evaluation reports, regional fiscal statistical publications, and provincial government financial statements. All data were processed using Microsoft Excel and statistical software.

Data analysis was conducted using descriptive statistics, correlation analysis, and multiple linear regression with a pooled Ordinary Least Squares (pooled OLS) approach. Descriptive statistics were used to provide an overview of the characteristics and development of the research variables across Indonesian provinces.

Given the limited time dimension of the dataset and the exploratory objective of the study, pooled Ordinary Least Squares (pooled OLS) was employed as the baseline estimation approach. This method allows the analysis of the overall relationship between SPBE implementation and regional tax growth across provinces while maintaining model simplicity and interpretability.

Correlation analysis was applied to examine the direction and strength of relationships among variables. Furthermore, pooled OLS regression was employed to test the effect of SPBE implementation on regional tax growth among provincial governments in Indonesia.

The regression model is formulated as follows:

$$TAXGROWTH_{it} = \alpha + \beta_1 SPBE_{it} + \beta_2 \ln(PDRB)_{it} + \beta_3 PADRATIO_{it} + \beta_4 \ln(POP)_{it} + \varepsilon_{it}$$

Where:

- $TAXGROWTH_{it}$ = regional tax growth of province (i) in year (t)
- $SPBE_{it}$ = SPBE index of province (i) in year (t)
- $\ln(PDRB)_{it}$ = natural logarithm of Gross Regional Domestic Product
- $PADRATIO_{it}$ = ratio of Regional Original Revenue to total regional revenue
- $\ln(POP)_{it}$ = natural logarithm of population size
- α = constant
- β = regression coefficient
- ε_{it} = error term

Multicollinearity testing was conducted using the Variance Inflation Factor (VIF). The results indicate that all independent variables have VIF values below 10, suggesting that the regression model is not affected by serious multicollinearity.

RESULTS AND DISCUSSION

4.1 Descriptive Statistics and Trends in SPBE and Regional Tax Growth

Table 1. Descriptive Statistics of Research Variables

Variable	Mean	Median	Max	Min	Std Dev
Regional Tax (IDR Billion)	4,724.31	1,899.04	44,448.07	272.22	7,746.65
PAD (IDR Billion)	5,546.02	2,493.70	50,742.02	405.01	8,862.22
Tax Growth (%)	9.59	11.06	59.66	-59.96	17.84
PAD Growth (%)	8.74	11.17	47.21	-66.91	15.03
SPBE	2.98	3.01	4.73	1.00	0.77
ln(GRDP)	12.08	11.93	14.58	10.28	1.13
PAD Ratio	0.42	0.42	0.73	0.07	0.16
ln(Population)	15.32	15.26	17.73	13.27	1.02

Source: Processed research data, 2026.

The descriptive statistics in Table 1 show substantial variation in fiscal capacity across Indonesian provinces during the observation period. Average regional tax revenue reached IDR 4,724.31 billion, ranging from IDR 272.22 billion to IDR 44,448.07 billion, while average Regional Original Revenue (PAD) amounted to IDR 5,546.02 billion, with a maximum of IDR 50,742.02 billion. These differences reflect variations in regional economic structures and fiscal administrative capacity. Although provinces with larger economic bases generally possess greater revenue-generating capacity, stronger economic potential does not necessarily translate into higher or more stable tax revenue growth.

Average regional tax growth was 9.59%, with a standard deviation of 17.84%, a maximum of 59.66%, and a minimum of −59.96%, indicating considerable fluctuations across provinces. These variations may be associated with differences in post-COVID-19 economic recovery, economic structure, and tax administrative effectiveness. While some provinces experienced substantial increases in tax revenue, others recorded more limited growth due to weaker economic activity and less effective tax administration.

The average SPBE index was 2.98, ranging from 1.00 to 4.73, indicating uneven implementation of digital government across provinces. This variation suggests that digital transformation remains influenced by institutional capacity, infrastructure readiness, fiscal resources, and human resource quality. Consistent with. (Scott, 2014) differences in organizational and institutional capacity appear to shape the effectiveness of SPBE implementation among local governments.

The average PAD ratio was 0.42, with values ranging from 0.07 to 0.73, indicating substantial differences in fiscal independence among provinces. Some provinces rely more heavily on locally generated revenue, while others remain dependent on central government transfers. From an institutional perspective, these findings suggest that regional revenue performance is influenced not only by economic potential but also by administrative quality and institutional capacity (North, 1991).

Overall, the descriptive statistics indicate that fiscal capacity, fiscal independence, and digital governance remain uneven across Indonesian provinces. Therefore, the relationship between SPBE implementation and regional tax growth should be understood in the broader context of institutional readiness, fiscal capacity, and administrative quality.

4.2 Correlation Analysis Among Variables

Table 2. Correlation Matrix Among Variables

Variable	TAXGROWTH	SPBE	ln(GRDP)	PADRATIO	ln(POP)
TAXGROWTH	1				
SPBE	-0.0716539	1			
ln(GRDP)	-0.0153909	0.420633	1		
PADRATIO	0.13176381	0.522969	0.829295	1	
ln(POP)	-0.0514287	0.497314	0.8761	0.791405	1

Source: Processed research data, 2026.

The correlation analysis in Table 2 shows a weak negative relationship between SPBE implementation and regional tax growth, with a correlation coefficient of −0.072. This finding suggests that improvements in the SPBE index were not directly followed by increases in regional tax growth during the observation period. The result may indicate that digital government transformation has not yet been fully integrated into regional tax administration systems. In many provinces, SPBE implementation appears to remain focused on administrative reform and compliance with bureaucratic reform indicators rather than on strengthening regional revenue management. As a result, the fiscal benefits of digitalization may require greater institutional readiness, integrated databases, and stronger administrative capacity before becoming observable.

The findings also suggest that SPBE implementation among Indonesian local governments remains at a transitional stage. Although some provinces have developed relatively integrated digital governance systems, their utilization for regional tax administration remains limited. This result differs from studies suggesting that digitalization improves tax administration effectiveness through stronger data integration and monitoring mechanisms (Okunogbe & Santoro, 2022). Within the Indonesian context, however, SPBE implementation does not yet appear to be fully directed toward strengthening integrated regional tax administration.

In contrast, the PAD Ratio shows a positive relationship with regional tax growth (r = 0.132), indicating that provinces with greater fiscal independence tend to have stronger revenue-generating capacity. This suggests that fiscal capacity remains more influential than formal administrative digitalization in supporting regional tax growth. Meanwhile, ln(GRDP) exhibits only a weak negative relationship with regional tax growth (r = −0.015), implying that larger regional economies do not necessarily experience higher tax revenue growth.

The correlation matrix also shows a relatively strong association between ln(GRDP) and ln(Population) (r = 0.876), reflecting the tendency of larger economies to have larger populations. However, all VIF values remain below 10, indicating no serious multicollinearity concerns. Overall, the results suggest that regional tax growth is more closely associated with fiscal capacity and administrative quality than with SPBE implementation alone.

4.3 The Effect of SPBE on Regional Tax Growth

Table 3. Results of Pooled OLS Regression Analysis

Dependent Variable: Regional Tax Growth (TAXGROWTH)

Constant	1.0222	0.3624	2.82	0.0058
SPBE	-0.0430	0.0292	-1.47	0.1441
ln(GRDP)	-0.0375	0.0357	-1.05	0.2970
PAD Ratio	0.6754***	0.2057	3.28	0.0014
ln(Population)	-0.0415	0.0367	-1.13	0.2608

Model Statistics

Multiple R	0.3289
R-squared	0.1082
Adjusted R-squared	0.0714
Standard Error	0.1720
F-statistic	2.9411
Prob(F-statistic)	0.0242
Observations	102

Multicollinearity Test (VIF)

SPBE	1.49
ln(GRDP)	5.70
PAD Ratio	4.13
ln(Population)	4.89

Source: Processed research data, 2026.

The pooled OLS regression results in Table 3 indicate that the model is statistically significant overall (Prob(F-statistic) = 0.0242), suggesting that the independent variables jointly explain variations in regional tax growth among Indonesian provincial governments. However, the SPBE variable does not have a significant effect on regional tax growth (β = -0.0430; p = 0.1441), indicating that the proposed hypothesis is not supported. Although the coefficient is negative, the relationship is statistically insignificant and should not be interpreted as evidence that SPBE reduces regional tax growth. Rather, the findings indicate that no statistically reliable relationship between SPBE implementation and regional tax growth was observed during the study period.

These results suggest that digital transformation in local governments may still be concentrated at the administrative level and has not yet been fully integrated into regional tax administration systems. In many provinces, SPBE implementation appears to focus on bureaucratic reform and the digitalization of general administrative services rather than on strengthening regional revenue management. Consequently, the fiscal benefits of digitalization may require greater integration of tax administration systems, institutional readiness, and organizational capacity before becoming observable. This finding differs from studies suggesting that digitalization improves tax administration effectiveness through stronger monitoring and data integration (Okunogbe & Santoro, 2022). Within the Indonesian context, SPBE implementation may still be constrained by infrastructure, data quality, interoperability, and administrative capacity.

From an institutional perspective, the findings imply that SPBE implementation remains strongly influenced by regulatory pressure and bureaucratic reform agendas. As argued by (Dimaggio & Powell, 1983), public organizations often adopt administrative innovations to gain legitimacy and comply with external expectations. Therefore, the effectiveness of SPBE in supporting regional tax growth appears to depend not only on technology adoption but also on the extent to which digital systems are integrated into fiscal administration, organizational processes, and institutional capacity. The effects of the control variables are discussed in the following section.

4.4 Discussion of Control Variables

In addition to SPBE, this study included regional economic size (ln GRDP), fiscal independence (PAD Ratio), and population size (ln Population) as control variables. The regression results in Table 3 show that PAD Ratio has a positive and significant effect on regional tax growth ($\beta = 0.6754$; $p = 0.0014$). This finding indicates that provinces with greater fiscal independence tend to have stronger capacity to increase regional tax revenue. Compared with administrative digitalization, fiscal capacity appears to play a more direct role in supporting regional tax growth, as regions with higher PAD generally possess stronger financial resources and administrative capability to manage regional revenue systems.

These findings are consistent with the fiscal capacity perspective, which emphasizes the importance of institutional and administrative capability in revenue generation. According to (North, 1991), institutional quality influences the effectiveness of economic activity and public administration. In the context of Indonesian local governments, the ability to increase tax revenue appears to depend not only on economic potential but also on the capacity to manage regional revenue sources effectively.

Meanwhile, ln(GRDP) has a negative but insignificant coefficient ($\beta = -0.0375$; $p = 0.2970$), indicating that larger regional economies do not necessarily experience higher tax revenue growth. This may reflect the fact that economically advanced provinces often have relatively stable tax revenues, resulting in more moderate annual growth. Moreover, economic expansion does not automatically improve tax administration, supervision, or revenue management.

Similarly, ln(Population) shows a negative and insignificant effect on regional tax growth ($\beta = -0.0415$; $p = 0.2608$). This suggests that a larger population does not necessarily expand the regional tax base or improve tax collection performance. In some regions, population growth may increase administrative burdens and public service expenditures without generating proportional gains in tax revenue.

Overall, the results indicate that regional tax growth is more strongly associated with fiscal capacity and institutional quality than with regional economic size or population. These findings also suggest that the effectiveness of digital transformation depends on the broader fiscal and administrative capacity of local governments, supporting the fiscal federalism perspective that successful decentralization requires not only revenue authority but also adequate institutional capability (Oates, 2008).

4.5 Research Implications

The findings indicate that SPBE implementation among Indonesian provincial governments has not significantly affected regional tax growth during the observation period, whereas the PAD Ratio has a positive and significant effect. These results suggest that regional fiscal capacity contributes more directly to regional tax growth than administrative digitalization alone.

Theoretical Implications

This study contributes to the literature on digital governance, fiscal capacity, and public sector tax administration in developing countries. The findings suggest that digital transformation alone is insufficient to improve regional revenue performance. The effectiveness of SPBE appears to depend on the extent to which digital systems are integrated into regional revenue management and supported by adequate institutional and administrative capacity.

The results support (Scott, 2014) argument that institutional change is shaped not only by formal regulations and technology but also by organizational capability and the broader institutional environment. They are also consistent with institutional theory (Dimaggio & Powell, 1983), which suggests that public organizations often adopt administrative reforms in response to external pressure and legitimacy demands. In this context, improvements in SPBE indicators do not necessarily translate into substantive improvements in regional tax administration. In contrast, the significant role of the PAD Ratio highlights the importance of institutional capacity and fiscal management effectiveness in supporting regional revenue performance, consistent with (North, 1991).

Practical Implications

From a practical perspective, SPBE development should not focus solely on achieving administrative digitalization targets but also on strengthening regional revenue management systems. Digital government initiatives are likely to have limited fiscal impact unless accompanied by improvements in tax administration, fiscal databases, information system integration, and human resource capacity.

The findings also suggest that local governments should strengthen interoperability among information systems, improve regional tax data integration, and develop more effective digital-based revenue monitoring mechanisms. These measures may enhance the contribution of SPBE to regional fiscal capacity and tax administration effectiveness. Overall, successful digital transformation requires not only technology adoption but also sufficient institutional capacity, governance quality, and administrative readiness to support regional revenue management.

CONCLUSIONS AND SUGGESTIONS

This study examined the effect of the Electronic-Based Government System (SPBE) on regional tax growth among Indonesian provincial governments. The results indicate that SPBE implementation does not significantly affect regional tax growth ($\beta = -0.0430$; $p = 0.1441$), suggesting that improvements in SPBE performance have not yet translated into higher regional tax revenues during the observation period. In contrast, the PAD Ratio has a positive and significant effect, indicating that regional fiscal capacity plays a more direct role in supporting regional tax growth.

Overall, the findings suggest that digital transformation alone is insufficient to improve regional fiscal performance. The effectiveness of SPBE appears to depend on the extent to which digital systems are integrated into regional tax administration and supported by adequate institutional and administrative capacity. These results are consistent with institutional theory (Dimaggio & Powell, 1983) and support (North, 1991) argument that institutional quality remains an important determinant of public sector effectiveness and fiscal capacity.

From a policy perspective, local governments should prioritize the integration of digital systems with regional revenue management, supported by stronger data interoperability, tax administration, monitoring mechanisms, and human resource capacity. Such efforts may enhance the contribution of SPBE to regional fiscal performance.

This study is limited by its relatively short observation period and the use of aggregated provincial-level data. Future research may employ longer panel data, expand the analysis to district and municipal governments, and incorporate variables related to digital governance quality, information system interoperability, and tax administration integration. The use of more advanced panel data methods or qualitative approaches may also provide deeper insights into the relationship between digital government implementation and regional tax administration.

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