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Digital Tax Governance in Optimizing Local Own-Source Revenue: Evidence from Kampar Regency, Indonesia

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Abstract: Fiscal decentralization has become a central policy in many developing countries aimed at improving local government autonomy and enhancing public service delivery. One key indicator of fiscal autonomy is the capacity of local governments to generate Local Own-Source Revenue (Pendapatan Asli Daerah/PAD). However, many local governments in Indonesia still depend heavily on fiscal transfers from the central government. This study examines the role of digital governance in optimizing local tax administration and increasing PAD in Kampar Regency, Riau Province. The research employs a qualitative descriptive approach supported by secondary fiscal data analysis. The findings indicate that digital tax administration contributes to improving transparency, administrative efficiency, and taxpayer compliance. Digital systems allow local governments to monitor tax transactions more effectively while reducing revenue leakage. However, challenges remain in terms of technological infrastructure, human resource capacity, and digital literacy among taxpayers. Strengthening digital governance in local taxation is therefore essential for improving fiscal sustainability and enhancing regional financial independence.

Keywords: digital governance, fiscal decentralization, local taxation, PAD, public finance.

INTRODUCTION

Fiscal decentralization has become one of the most important institutional reforms in public sector governance across many developing countries. The primary objective of fiscal decentralization is to provide greater authority to local governments in managing financial resources and delivering public services that reflect local preferences and local economic conditions (Oates, 1999; Martinez-Vazquez & McNab, 2003). In theory, decentralization allows local governments to allocate resources more efficiently because they possess better information about local conditions compared with central governments.

In Indonesia, fiscal decentralization has been implemented through regional autonomy policies since the early 2000s. These reforms provide local governments with greater authority in fiscal management, including the responsibility to mobilize local revenue sources. One important indicator of local fiscal capacity is Local Own-Source Revenue (Pendapatan Asli Daerah/PAD), which reflects the ability of local governments to generate income from local

taxes, retributions, regional enterprises, and other legitimate sources (Lewis, 2015; Boadway & Shah, 2009).

Despite the implementation of fiscal decentralization, many local governments in developing countries still face difficulties in optimizing local revenue. Previous studies suggest that weak tax administration systems, limited institutional capacity, and low taxpayer compliance often constrain local revenue mobilization (Bird & Zolt, 2008; Smoke, 2015). These challenges indicate that fiscal decentralization alone is not sufficient to ensure strong local fiscal capacity without effective governance mechanisms.

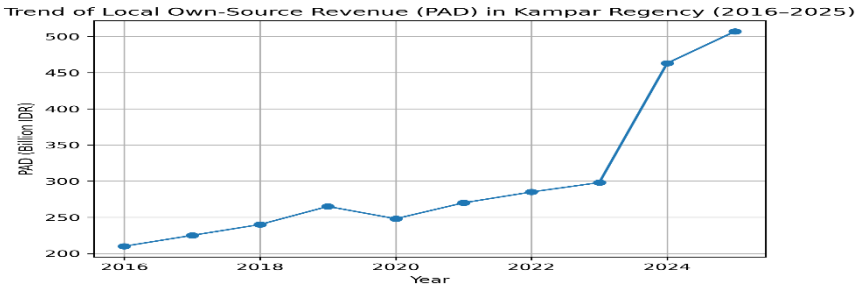
Kampar Regency in Riau Province represents an interesting case for examining the dynamics of local revenue mobilization. The region has significant economic potential derived from agriculture, plantations, trade, and service sectors. Palm oil plantations, agricultural production, and commercial activities constitute important economic drivers that create potential tax bases for local governments. However, despite this economic potential, the contribution of PAD to the overall regional revenue remains relatively limited.

Recent financial data show that the Kampar Regency government targeted PAD of approximately IDR 507.52 billion in 2025. Although this figure represents a significant increase compared with previous years, the share of PAD relative to total regional revenue remains relatively small. A large proportion of regional revenue still originates from intergovernmental fiscal transfers such as the General Allocation Fund (DAU) and Special Allocation Fund (DAK). This situation indicates that the fiscal independence of the region remains limited.

One strategy increasingly adopted by governments worldwide to improve public financial management is digital governance. Digital governance refers to the use of information and communication technologies to enhance efficiency, transparency, and accountability in government operations (Janssen & Estevez, 2013; Mergel et al., 2019). Digital transformation has significantly influenced many aspects of public administration, including tax administration and public financial management (Gupta et al., 2017).

In the context of taxation, digital technologies such as electronic tax reporting systems, online tax payment platforms, and integrated tax databases can significantly improve administrative efficiency and reduce opportunities for corruption or revenue leakage (OECD, 2019; World Bank, 2021). Digital tax systems also enhance taxpayer convenience, which may lead to increased voluntary tax compliance (Alm & McKee, 2006).

For local governments, the implementation of digital tax governance may offer several benefits. First, digital systems improve transparency in tax administration through automated transaction recording. Second, digitalization reduces administrative costs and processing time in tax collection. Third, online tax services improve accessibility for taxpayers, which may increase compliance levels. The Indonesian government has also promoted digital transformation in local financial management through the Electronic Regional Transaction (ETPD) program. This initiative encourages local governments to adopt digital financial systems in order to improve transparency and accountability in regional financial management.



However, despite the potential benefits of digital governance, its implementation at the local level often faces several challenges. These challenges include limited technological infrastructure, insufficient digital skills among government officials, and varying levels of digital literacy among taxpayers (Cordella & Tempini, 2015; Reddick, 2010).

Therefore, it is important to examine how digital governance contributes to improving local revenue performance. This study aims to analyze the role of digital tax governance in optimizing Local Own-Source Revenue (PAD) in Kampar Regency. By examining empirical data on PAD trends and institutional implementation of digital tax systems, this research provides insights into how digital governance can strengthen local fiscal capacity in the context of fiscal decentralization.

METHODS

This study uses a qualitative descriptive research design. The research focuses on analyzing the implementation of digital governance in local tax administration and its implications for PAD optimization.

Data Sources

Data used in this study include:

1. Regional Budget (APBD) documents of Kampar Regency
2. Reports from the Regional Revenue Agency (Bapenda)
3. Government statistical publications
4. Previous academic studies on fiscal decentralization and digital governance

Data Collection Techniques

Data were collected through:
Fiscal Data Analysis

Data Analysis Techniques

The data were analyzed using several analytical approaches:

1. Descriptive Statistical Analysis

   Descriptive statistical analysis was used to describe the development trends of Locally Generated Revenue (PAD) and local tax revenue in Kampar Regency during the study period. This analysis aimed to identify PAD growth patterns and the contribution of local taxes to total regional revenue. According to Creswell (2014), descriptive statistical analysis is a basic method used to explain data characteristics through statistical measures such as averages, percentages, and growth rates.

   In this study, several statistical indicators were used, including:

   a. Average (Mean)

      The average is used to determine the middle value of PAD during the study period.
      X¯=∑Xin{X} = \frac{\sum X_i}{n}x¯=n∑Xi
      Description: 1) X¯{X}X¯ = average PAD, 2) XiX_iXi = PAD value in year I, 3) nnn = number of observation years

   b. PAD Growth Rate

      PAD growth analysis is used to determine changes in PAD revenue from year to year.
      Growth Rate = PADt − PADt − 1 PADt − 1 × 100% Growth Rate = \frac{PAD_t - PAD_{t-1}}{PAD_{t-1}} \times 100\% Growth Rate = PADt − 1 PADt − PADt − 1 × 100%.
      Note: 1) PADt PAD_t PADt = Current year's PAD, 2) PADt − 1 PAD_{t-1} PADt − 1 = Previous year's PAD.

   c. Regional Tax Contribution to PAD

      To determine the contribution of regional taxes to PAD, use the following formula:

Contribution = Tax Revenue PAD × 100% Contribution = \frac{Tax Revenue} PAD \times 100\% Contribution = PADTax Revenue × 100%.
Description: 1) Tax Revenue = regional tax revenue 2) PAD = total regional original income.
This analysis is important because regional taxes are a major component of PAD in the regional revenue structure.

2. Institutional Analysis

Institutional analysis is used to understand how institutional structures, regulations, and administrative mechanisms influence the implementation of digital governance in regional tax management. Institutional analysis is a widely used approach in public policy studies to analyze the relationships between actors, rules, and processes within a government system (North, 1990; Ostrom, 2005).
In this study, institutional analysis was conducted by examining the following aspects:

a. Organizational Structure of Regional Tax Management
This analysis aims to understand the role of the Regional Revenue Agency (Bapenda) in managing the digital tax system, including coordination with related agencies such as regional banks and the central government.
b. Tax Digitalization Regulations and Policies
The regulatory review includes: 1) Law on Central and Regional Government Financial Relations, 2) Regional Government Transaction Electronification (ETPD) policy, dan 3) Electronic tax payment system regulations.
c. Technological Infrastructure
This analysis includes:
1) e-tax system, 2) online tax payments, 3) tax database integration.
d. Institutional Capacity
Institutional capacity is measured through several indicators:
1) human resource capacity, 2) information technology readiness, 3) inter-agency coordination.

This approach refers to the Institutional Analysis and Development (IAD) framework developed by Ostrom (2005), which emphasizes the importance of institutional rules in determining the performance of public policy systems.

3. Comparative Analysis

A comparative analysis is used to compare regional tax revenue performance before and after the implementation of digital governance in regional tax administration. This approach aims to identify whether the digitalization of the regional tax system contributes to increased regional revenue (PAD). The method used is a comparative analysis of average tax revenue before and after digitalization.

a. Average PAD Before Digitalization
Meanbefore = ∑PAD beforen Mean_{before} = \frac{\sum PAD_{before}}{n}Meanbefore = n∑PADbefore
b. Average PAD After Digitalization
Mean after = ∑ PAD aftern Mean_{after} = \frac{\sum PAD_{after}}{n}Mean after = n∑PAD after
c. Percentage Change in PAD
Change = Meanafter − Mean before × 100%Change = \frac {Mean_{after} - Mean_{before}}{Mean_{before}} \times 100\% Change= Meanbefore Mean after – Mean before × 100%

If the change value is positive, it can be concluded that the implementation of digital governance contributed to an increase in PAD.

This comparative approach is often used in public policy evaluation to assess the effectiveness of a policy or program (Dunn, 2018).

RESULTS AND DISCUSSION

PAD Trend and Regional Fiscal Performance

Descriptive statistical analysis indicates that PAD in Kampar Regency has experienced a consistent upward trend during the observation period. Based on the available financial data, PAD increased from approximately IDR 225 billion in 2017 to around IDR 507 billion in 2025. This trend suggests that the fiscal capacity of the region has improved over time. The average PAD value calculated using the mean formula shows that local revenue performance has grown steadily during the past decade. However, the data also reveal fluctuations in PAD growth rates. The most significant decline occurred in 2020, when the COVID-19 pandemic disrupted economic activities in several sectors such as trade, hospitality, and services. These sectors constitute important components of the local tax base, and their slowdown contributed to reduced local revenue during that period.

Despite this temporary decline, PAD growth resumed in the following years. The recovery period after 2021 demonstrates that the local economy gradually regained momentum, which positively influenced regional revenue performance. In particular, the sharp increase in PAD observed in 2024 suggests improvements in both economic activities and revenue administration. These findings indicate that Kampar Regency still possesses considerable potential to expand its local revenue base. However, maximizing this potential requires effective governance systems and efficient tax administration mechanisms.

Contribution of Local Taxes to PAD

The empirical analysis shows that local taxes represent the dominant component of PAD in Kampar Regency. The contribution of local taxes accounts for more than half of total PAD, indicating that tax revenue plays a crucial role in determining the fiscal capacity of the regional government. Several types of local taxes constitute major revenue sources, including property tax (PBB-P2), restaurant tax, hotel tax, entertainment tax, and advertisement tax. These taxes are directly linked to economic activities occurring within the region. Therefore, improvements in tax monitoring and administration systems may significantly influence local revenue performance.

The dominance of local taxes in the PAD structure highlights the importance of strengthening tax administration systems. According to Bird and Zolt (2008), effective tax administration is a key determinant of revenue mobilization in developing countries. Without efficient administrative systems, local governments may face difficulties in collecting taxes effectively, even when the economic potential exists.

Institutional Implementation of Digital Tax Governance

Institutional analysis reveals that the Regional Revenue Agency (Bapenda) plays a central role in implementing digital tax governance in Kampar Regency. The agency is responsible for tax collection, taxpayer registration, monitoring tax compliance, and managing tax databases. In recent years, Bapenda Kampar has introduced several digital initiatives aimed at improving tax administration. These initiatives include electronic tax payment systems, online tax reporting platforms, and the integration of tax databases. These digital systems allow tax administrators to record transactions electronically and improve monitoring mechanisms.

The implementation of digital tax governance is also supported by cooperation with various stakeholders, including regional banks, financial institutions, and national government agencies. Such collaboration is essential for ensuring the effectiveness of digital financial systems. The institutional analysis also indicates that regulatory frameworks play an important role in facilitating digital transformation in local tax administration. National policies such as the ETPD program provide the legal and institutional foundation for local governments to adopt digital technologies in revenue management.

Comparative Analysis of Revenue Performance

The comparative analysis conducted in this study aims to evaluate the differences in revenue performance before and after the implementation of digital tax initiatives. The analysis compares average PAD values during two different periods: the pre-digitalization period and the post-digitalization period.The results show that the average PAD after the implementation of digital tax systems is significantly higher compared with the earlier period. This finding suggests that digital governance contributes positively to improving revenue performance.

However, it is important to acknowledge that digital governance is not the only factor influencing revenue growth. Economic development, investment activities, and regional development policies also play important roles in shaping revenue outcomes.Nevertheless, the introduction of digital tax systems appears to enhance administrative efficiency and strengthen monitoring mechanisms. These improvements contribute to better revenue performance in the long term.

Implications of Digital Governance for Local Revenue Optimization

The results of this study highlight several important implications of digital governance for local revenue management. First, digital tax systems improve transparency in tax administration. Electronic transaction records reduce opportunities for corruption and revenue leakage. Second, digitalization increases administrative efficiency by automating many processes that were previously performed manually. Third, digital tax services improve convenience for taxpayers, which may lead to higher voluntary tax compliance.

These findings are consistent with previous studies suggesting that digital governance can enhance public sector performance by improving transparency and accountability (Mergel et al., 2019; OECD, 2019). However, the study also identifies several challenges that may limit the effectiveness of digital governance. These include limited technological infrastructure, insufficient digital skills among government staff, and varying levels of digital literacy among taxpayers. Addressing these challenges is essential for maximizing the benefits of digital tax governance. Strengthening institutional capacity, investing in technological infrastructure, and improving taxpayer education programs are necessary steps to ensure the successful implementation of digital governance in local revenue management.

CONCLUSION

This study examines the role of digital tax governance in optimizing Local Own-Source Revenue (PAD) in Kampar Regency within the context of fiscal decentralization. Based on descriptive statistical analysis, institutional analysis, and comparative analysis, several key conclusions can be summarized as follows.

1. The trend of PAD in Kampar Regency has generally increased over the past decade, despite a temporary decline during the COVID-19 pandemic in 2020. The recovery and subsequent growth of PAD indicate that the region still has considerable potential to enhance local revenue through improved tax administration systems.

2. Local taxes constitute the primary component of PAD. This finding highlights that optimizing local tax collection is a critical factor in strengthening regional fiscal capacity and improving local government financial independence.
3. Third, the implementation of digital governance in tax administration has improved administrative efficiency. Digital tax systems enable electronic payment processes, reduce reliance on manual procedures, and enhance transparency and accountability in local tax management.
4. Digitalization also strengthens monitoring and supervision mechanisms. Real-time digital monitoring systems allow local governments to track tax transactions more effectively and reduce the risk of revenue leakage.
5. Digital tax governance contributes to increased taxpayer compliance. Online tax payment services simplify the payment process and encourage taxpayers to fulfill their obligations more conveniently.
6. Despite these advantages, the implementation of digital tax systems still faces several challenges. These challenges include limited technological infrastructure, human resource capacity, and varying levels of digital literacy among taxpayers.
7. Digital tax governance represents a strategic approach for strengthening regional fiscal independence. By improving transparency, administrative efficiency, and taxpayer compliance, digitalization of local tax systems can significantly support the optimization of PAD and enhance regional economic development.

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