



Cross-Sector Collaboration and Technology: Key to Optimizing Regional Finance for Equitable Development in Indonesia

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Abstract. Local financial management in Indonesia still faces significant challenges, such as budget inefficiencies, high dependence on central funds, and lack of locally generated revenue (PAD), which exacerbates development inequality, especially in underdeveloped regions such as Papua. This research highlights the importance of cross-sector collaboration and technology utilization for the optimization of local finance to achieve sustainable development equity. Collaboration between central and local governments, the private sector, and the community can improve transparency and accountability of budget management, while technologies such as e-budgeting, blockchain, and the Local Government Information System (SIPD) can accelerate the budget planning and monitoring process. This study uses a descriptive qualitative approach with thematic analysis of primary and secondary data to evaluate the effectiveness of technology integration and cross-sector collaboration. The results show that a strong synergy between collaboration and technology can improve budget efficiency, reduce dependency on central funds, and accelerate infrastructure development and public services in disadvantaged areas. Policy recommendations include strengthening local government capacity, implementing a blockchain-based monitoring system, and involving communities in development planning. This research contributes to the local financial management literature by offering evidence-based solutions that support inclusive and equitable development in Indonesia.

Keywords: Local Financial Management, Cross-Sector Collaboration, Technology, Transparency, Budget Efficiency, Equitable Development, Sustainable Development

Abstract. Pengelolaan keuangan daerah di Indonesia masih menghadapi tantangan signifikan, seperti inefisiensi anggaran, ketergantungan tinggi pada dana pusat, dan minimnya Pendapatan Asli Daerah (PAD), yang memperburuk ketimpangan pembangunan, terutama di wilayah tertinggal seperti Papua. Penelitian ini menyoroti pentingnya kolaborasi lintas sektor dan pemanfaatan teknologi untuk optimalisasi keuangan daerah guna mencapai pemerataan pembangunan yang berkelanjutan. Kolaborasi antara pemerintah pusat, daerah, sektor swasta, dan masyarakat dapat meningkatkan transparansi dan akuntabilitas pengelolaan anggaran, sedangkan teknologi seperti e-budgeting, blockchain, dan Sistem Informasi Pemerintahan Daerah (SIPD) dapat mempercepat proses perencanaan dan pengawasan anggaran. Studi ini menggunakan pendekatan deskriptif kualitatif dengan analisis tematik dari data primer dan sekunder untuk mengevaluasi efektivitas integrasi teknologi dan kolaborasi lintas sektor. Hasil penelitian menunjukkan bahwa sinergi yang kuat antara kolaborasi dan teknologi dapat meningkatkan efisiensi anggaran, mengurangi ketergantungan dana pusat, serta mempercepat pembangunan infrastruktur dan layanan publik di daerah tertinggal. Rekomendasi kebijakan yang diajukan mencakup penguatan kapasitas pemerintah daerah, penerapan sistem pengawasan berbasis blockchain, dan pelibatan masyarakat dalam perencanaan pembangunan. Penelitian ini memberikan kontribusi terhadap literatur pengelolaan keuangan daerah dengan menawarkan solusi berbasis bukti yang mendukung pembangunan inklusif dan merata di Indonesia.

Keywords: Pengelolaan Keuangan Daerah, Kolaborasi Lintas Sektor, Teknologi, Transparansi, Efisiensi Anggaran, Pemerataan Pembangunan, Pembangunan Berkelanjutan.

1. INTRODUCTION

Local financial management in Indonesia still faces serious challenges, despite advances in the application of technology. One of the main problems is the inequality of budget allocations and the effectiveness of their use in promoting equitable development. The Central Bureau of Statistics (BPS) report for 2024 shows that although the national Human Development Index (HDI) has increased to 75.02, the disparity between provinces remains significant. DKI Jakarta recorded the highest HDI of 76.00, while Papua and Aceh are still around 74.03. These disparities indicate significant differences in the quality of education, health and infrastructure services, reflecting suboptimal budget management in many regions (BPS, 2024) .

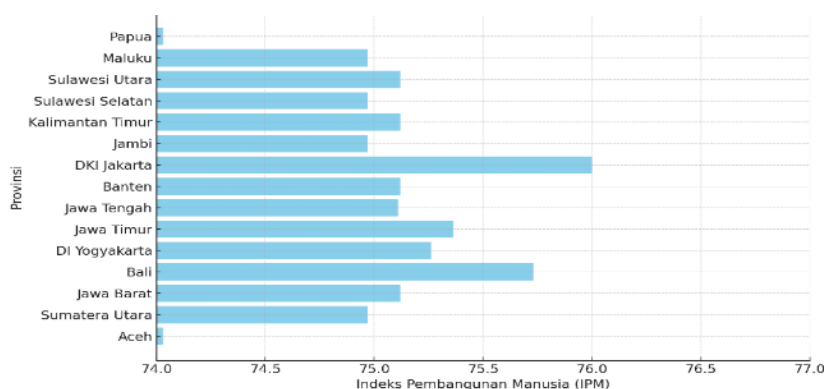


Figure 1 Human Development Index (HDI) by Province (2024)

Source: Badan Pusat Statistik, 2024

Based on research conducted by the Ministry of Finance in 2023, around 30% of infrastructure projects in Indonesia were delayed or not completed on time due to constraints in local budget management. This indicates inefficiencies in budget planning and allocation that can affect the achievement of development targets. In addition, around 60% of local governments still depend on transfers from the central government to finance development activities, while their capacity to maximize their own-source revenue (PAD) is low (Ministry of Finance, 2023) . This high dependence on central funds makes it difficult for local governments to independently finance basic needs such as education and health, which in turn exacerbates development inequality between regions in Indonesia.

The allocation of capital expenditure for infrastructure in Papua Province in 2024 was recorded at 23% of the total Regional Budget (APBD). This figure is much lower than that of DKI Jakarta Province, which reaches 40% of its APBD. This significant difference has a direct impact on people's access to basic infrastructure. In Papua, only around 66.49% of households have access to decent drinking water sources, far below the national average of 92.64% in 2024 (BPS, 2024) .

The limited budget allocation for infrastructure in Papua leads to low quality public services, including access to clean water. This contributes to the region's inability to meet the basic needs of the community independently, which in turn exacerbates economic inequality between regions in Indonesia.

Inequality of development, budget inefficiencies, low quality of public services, and economic disparities between regions are major problems in regional financial management in Indonesia. These inequalities are particularly evident in Eastern Indonesian regions such as Papua and Maluku, which are lagging behind developed regions such as Java and Bali. People in regions with low Human Development Index (HDI), including vulnerable groups such as the poor, students, and patients who depend on public health services, are the most affected.

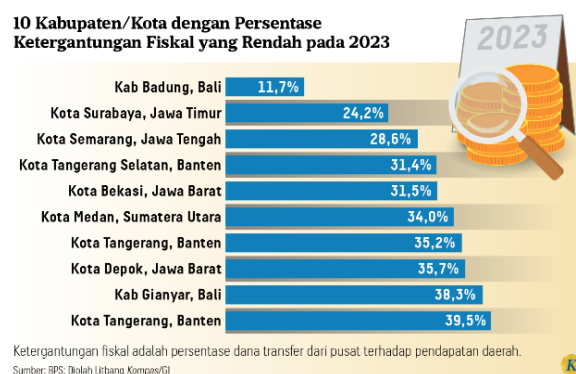


Figure 2 10 Districts/Cities with Percentage of Fiscal Dependency Low by 2023

Source: Badan Pusat Statistik, 2024

This problem is caused by various factors, including the lack of transparency and accountability in budget management, the lack of human resource capacity at the local level to operate financial management technology, and the high dependence on central funds that makes it difficult for regions to develop local initiatives independently. In addition, the lack of utilization of innovative technologies such as blockchain to support budget transparency further exacerbates the condition.

As a result, basic infrastructure development is limited, education and health services are inadequate, creating a cycle of poverty that is difficult to break. This deterioration also impacts on public and private sector confidence in local governments, which in turn discourages local investment and slows regional economic growth.

Inadequate regional financial management not only exacerbates inter-regional inequality but also threatens the achievement of sustainable development goals (SDGs). Without serious efforts to improve budget efficiency and transparency, Indonesia will find it difficult to achieve

equitable development (Zasriati, 2022). The long-term effect is widespread social and economic disparities, which can trigger social instability.

This research aims to identify innovative solutions for local governments, including the application of modern technology and cross-sector collaboration, to optimize local financial management. The results of this research are expected to provide strategic recommendations to create inclusive, equitable and sustainable development.

2. METHOD

This research uses a descriptive qualitative method with a case study approach to explore cross-sector collaboration and the application of technology in optimizing local financial management in Indonesia (Creswell & Poth, 2016). The focus of the research was to identify innovative solutions that combine synergies between the central government, local governments, the private sector, and communities with modern technology to improve transparency, efficiency, and equitable development. Data were analyzed thematically by identifying key themes related to efficiency, transparency and equity in budget management (Angrosino, 2007). A comparative analysis approach was used to compare regions that have successfully implemented cross-sector collaboration and technology with those that still face significant challenges. The evaluation framework includes indicators of budget efficiency, level of transparency in budget management, and equitable development measured through access to basic services and infrastructure (Silverman & Patterson, 2021). With this approach, the research is expected to provide evidence-based policy recommendations to create inclusive, equitable, and sustainable local financial management.

3. RESULTS AND ANALYSIS

a. Cross-Sector Collaboration is Key to Optimizing Regional Financial Management

Regional financial management in Indonesia faces various challenges that affect development effectiveness, such as inequality between regions, lack of transparency, and high dependence on central funds. One approach that can be a solution to overcome these problems is cross-sector collaboration. This collaboration not only involves local and central government, but also involves various other stakeholders such as the private sector, civil society, and non-governmental organizations (Ministry of Finance of the Republic of Indonesia, 2023). By building strong cooperation between these sectors, regional financial management can be more optimal and able to encourage the creation of more equitable and sustainable development (Syam & Zulfikar, 2022).

One important aspect of cross-sector collaboration is strengthening the synergy between the central government and local governments (IKRAM, 2020). In the context of local financial management, many regions are still dependent on transfers from the central government to fund their development projects. This dependency often leads to delays in the implementation of development programs as well as the inability of regions to maximize their own-source revenue (PAD) potential (Directorate General of Fiscal Balance (DJPK), 2023). Therefore, it is important for the central government to provide support in the form of policies and incentives that encourage regions to be more independent in managing their budgets. Pro-decentralized fiscal policies, as well as strengthening the capacity of local governments in financial planning and management, can accelerate the process of more efficient budget management.

In addition, cross-sector collaboration also includes the role of the private sector in supporting regional development (IKRAM, 2020). The private sector can be an important partner in infrastructure investment and local economic development. One obvious example is in the sector of basic infrastructure development such as roads, bridges, and health facilities. With partnerships between local governments and the private sector, large projects that require substantial financing can be realized more quickly and efficiently. This form of cooperation can be done through a Public Private Partnership (PPP) scheme, which allows the private sector to participate in infrastructure development, while the local government retains control over the management and implementation of policies that suit the needs of the community.

In addition to government and the private sector, the role of civil society and non-governmental organizations in local financial management is also very important. Communities have knowledge and understanding of local needs that can provide valuable input for local budget planning. Therefore, public participation in the process of planning and monitoring local budgets needs to be strengthened. Through forums such as development planning meetings (*musrenbang*), communities can provide more in-depth input on development priorities that should be prioritized. By involving the community in the budget management process, a sense of ownership and responsibility for development will be created, which in turn increases the effectiveness and accountability of budget use (Sulaeman & Andriyanto, 2021).

Cross-sector collaboration can also improve transparency and accountability in local financial management. The growing use of information technology allows for more open and publicly accessible budget management (Nababan & Shahrullah, 2021). A digital-based regional financial information system can provide more transparent information about the allocation and use of the budget, and facilitate the monitoring process. Local governments can

work with independent institutions, such as financial watchdogs or civil society organizations, to ensure that budgets are spent as planned and that there is no abuse. With greater transparency, the public can monitor and provide feedback on budget use, which in turn increases accountability and trust in local government (Ministry of Home Affairs of the Republic of Indonesia, 2023).

In addition, cross-sector collaboration can also accelerate some of the implementation processes of strategic development programs. One example is human resource development programs that require cooperation between local governments, educational institutions, and the private sector. Training and education programs that match the needs of the labor market can reduce unemployment and improve the skills of the local workforce. By involving the private sector in HR development, whether in the form of internships, training, or research and development cooperation, local governments can strengthen local capacity to face economic challenges.

However, to ensure effective cross-sector collaboration, good coordination between all parties is required. Local governments must have the ability to strategically facilitate and organize this collaboration. Efficient local financial management requires careful planning, appropriate budget allocation, and continuous monitoring. Therefore, strengthening local government capacity in budget management and fiscal policy is necessary to optimize this collaboration. In addition, there needs to be a system that enables effective communication between the government, the private sector, and the community, so that all parties can contribute to each other and benefit from the results of the collaboration (Sulaeman & Andriyanto, 2021).

On the other hand, cross-sector collaboration must also prioritize the principles of sustainability in every policy and program implemented. Equitable and inclusive development will not be achieved without attention to environmental and social aspects in every project implemented. Therefore, inter-sectoral collaboration must be implemented by taking into account social and environmental impacts, so that the development carried out not only provides short-term benefits, but is also sustainable for future generations. For example, in infrastructure development, it is important to ensure that projects do not damage the environment, as well as provide maximum economic benefits to local communities.

Overall, cross-sector collaboration is key to optimizing local financial management, which in turn will support the creation of more equitable and sustainable development. By building strong synergies between central and local governments, the private sector, as well as communities, it is hoped to overcome the budget management challenges faced by many

regions in Indonesia. Through this approach, development inequality can be reduced, and a better quality of public services can be provided to the people, especially in areas that are still lagging behind.

b. Technology Utilization for Financial Management Efficiency

The utilization of technology in local financial management has become an important key in improving the efficiency, transparency, and accountability of local budgets. Digital technology enables local governments to manage financial resources in a more structured, transparent, and accountable manner. The application of this technology provides various benefits that can reduce budget waste and improve the quality of public services, which in turn contributes to more equitable development throughout the region (Ministry of Communication and Information of the Republic of Indonesia, 2023).

1. Technology-based Financial Management System

One form of technology application in regional financial management is through an information technology-based financial management system. This system allows regional budget management to be more efficient and integrated. For example, the *e-budgeting* system is used to plan, allocate, and monitor regional budget expenditures in real-time. This system also provides convenience in the process of recording and financial reporting, so that local governments can easily monitor the use of budgets in various sectors (Ministry of Home Affairs, 2023).

With this technology-based system, every budget allocation can be monitored clearly and quickly, reducing the potential for waste or misuse of funds. In addition, this system also facilitates the audit and evaluation process, thereby increasing the accountability and transparency of regional financial management. The use of this technology reduces reliance on manual processes that are prone to human error and fraud.

2. Real-Time Budget Monitoring

Technology provides real-time budget monitoring, which provides an advantage in monitoring the effectiveness and efficiency of local budget management. Local governments can access updated financial data at any time, providing the opportunity to make budget adjustments if necessary. This real-time monitoring also allows for early identification of potential inefficiencies, so that corrective actions can be taken immediately. This is particularly beneficial in preventing imbalances in budget utilization that often occur due to uncoordinated spending among various departments and agencies. With better monitoring, budgets can be allocated more appropriately in line with regional development priorities.

3. Electronic Payment System for Regional Original Revenue (PAD)

Technology can also improve efficiency in the collection of local revenue through electronic payment systems. Local governments can utilize digital platforms to facilitate the payment of local taxes and levies, such as hotel, restaurant, or parking taxes. The use of electronic payment systems allows the public to make transactions quickly and easily, and increases taxpayer compliance.

In addition, this system can reduce revenue leakage that often occurs due to corrupt practices or non-transparency in the tax collection process. By using technology, the payment process becomes more open, which in turn increases accountability and makes it easier to monitor the flow of local funds.

4. Transparency with Blockchain

Blockchain is another technology that has great potential to improve transparency in regional financial management. Using a blockchain-based system, every budget transaction can be permanently and transparently recorded in a digital ledger that can be accessed by relevant parties, including the public. This technology ensures that transactions cannot be altered or manipulated once recorded, which makes it highly effective in preventing budget abuse.

The application of blockchain in local financial management can increase public trust in local governments. The transparency resulting from the use of this technology also encourages public participation in overseeing the use of the budget and ensuring that public funds are used in accordance with the objectives that have been set (UNDP, 2023).

5. Data Optimization for Planning and Decision Making

The utilization of technology also enables better data collection and analysis in local financial planning. By using *big data*-based systems, local governments can obtain more accurate information about economic conditions, community needs, and local revenue potential. The data obtained can be used to formulate more targeted policies and ensure that budget allocations are more focused on sectors in need (Putra, 2014).

This data analysis technology also helps in making decisions based on evidence and facts, thereby reducing reliance on estimates or assumptions that are less valid. With more accurate planning, local governments can avoid waste and ensure that the budget spent has an optimal impact.

The utilization of technology in local financial management can provide many benefits, including increasing efficiency, transparency, and accountability in budget use. Technology allows for more structured and accountable financial management, and

facilitates real-time budget monitoring. In addition, electronic payment systems and blockchain implementation can improve tax compliance and prevent misuse of funds. With better data optimization, local governments can plan and make more informed decisions, resulting in more effective financial management and equitable development (UNDP, 2023).

c. Synergy of Collaboration and Technology in Realizing Development

To achieve equitable development, collaboration and technology must go hand in hand. Collaboration between sectors can strengthen the capacity of local governments to plan and allocate budgets more effectively, while technology provides the tools to ensure that budget management is transparent and efficient.



Figure 3 National Awakening, Momentum for Improvement Indonesian Human Competence in the Age of Digitalization

Source: IndonesiaBaikID

For example, in budget management for the infrastructure sector, local governments can collaborate with the private sector to finance large projects, while technology can be used to monitor project progress and ensure that funds are used in accordance with planning. On the other hand, in the social sector, such as education and health, technology can assist local governments in distributing social assistance or welfare programs more quickly and on target, ensuring that the benefits are felt fairly by the people in need.

To ensure equitable development, cross-sector collaboration and the application of technology should be the two main pillars in local financial management. Cross-sector collaboration is not only limited to the relationship between the government and the private sector, but also involves the community sector and non-governmental organizations that have important roles in solving various development problems. The community sector, for example, can play a role in providing valuable input related to regional development priorities and the

specific needs of the community. Through this collaboration, local budgets can be better prioritized for sectors that really need it, while minimizing unproductive budget overlaps.

In addition, local governments also need to work with academic and research institutions to ensure that policies are based on accurate data and research. Higher education and research institutions can help analyze the potential and challenges faced by regions in achieving equitable development, and provide evidence-based recommendations that can strengthen regional budget planning.

On the other hand, the application of technology should be more than just an administrative tool. Technology can be used to create a more interactive and data-driven information system, allowing local governments to analyze in real-time the effectiveness of budget spending and detect potential problems or irregularities. For example, by using cloud-based systems or big data analytics, the government can transparently monitor the entire flow of funds to various sectors, ensuring that every dollar spent has the maximum impact on society.

Technology also plays an important role in increasing public participation in regional financial management. Through digital platforms, the public can be given access to oversee the use of local budgets more easily and transparently. These platforms can be used to submit reports or complaints regarding budget use, which will provide valuable feedback for local governments to make immediate improvements or policy adjustments.

Overall, cross-sector collaboration and technology utilization in local financial management are not only important to achieve budget efficiency, but also to create more inclusive and sustainable development. By optimizing these two elements, local governments can ensure that existing resources are managed optimally and the benefits of development can be felt by all levels of society equally.

4. CONCLUSION

Local financial management in Indonesia faces significant challenges, including inequality in budget allocations, high dependence on central funds, and inefficiencies in budget planning and use. Although technology has provided advances, disparities in the Human Development Index (HDI) between provinces and the quality of public services, such as education, health, and infrastructure, remain a major problem, especially in underdeveloped areas such as Papua. These inequalities exacerbate social and economic disparities affecting the poor and vulnerable groups.

To overcome this problem, more innovative and collaborative solutions are needed. Cross-sector collaboration involving the central government, local governments, the private sector, civil society and non-governmental organizations can improve local financial management. Strengthening the synergy between these sectors will help promote more equitable and sustainable development. In addition, transparent use of information technology can increase accountability and facilitate budget monitoring.

The application of modern technology and collaborative approaches will accelerate infrastructure development, improve public services, and strengthen the capacity of regions to be independent in managing budgets. With these measures, development inequality in Indonesia can be reduced, creating a more equitable distribution of development, and achieving sustainable development goals.

Policy recommendations to improve the efficiency of budget planning and realization at the local government level include the implementation of e-budgeting and real-time monitoring systems. This aims to ensure more efficient and transparent budget planning and utilization. The main focus needs to be on basic infrastructure development such as roads, health facilities and clean water in underdeveloped areas to support equitable development. In addition, to reduce dependence on central funds, local governments need to optimize their own-source revenue (PAD) by maximizing the potential of the local economy, one of which is through the digitalization of the tax and levy collection system. An increase in transparent and accountable PAD can support more equitable development financing across the region. Collaboration with the private sector through *Public-Private Partnership* (PPP) schemes also needs to be strengthened to build strategic infrastructure such as roads, bridges, and educational facilities. This partnership allows the acceleration of development in underdeveloped areas without burdening the APBD, so that equitable development can be achieved more quickly. Finally, the transparency of budget use must be strengthened by utilizing digital and blockchain technology, as well as involving the community in planning and monitoring development through the Musrenbang forum. This will ensure that the budget is used in accordance with local needs, so that development can be more inclusive and equitable.

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