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Enhancing Public Financial Transparency Through the Integration of Taxation, Accounting, and Social Welfare Systems

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Abstract

This study explores the impact of taxation, accounting, and social welfare system integration on public financial transparency in Indonesia. The study collected data from government reports and interviews with financial policy experts, auditors, and government officials using mixed methods, including quantitative and qualitative analysis. The analysis results show that system integration significantly improves transparency through more accurate fiscal reporting and better access to public financial information. Challenges such as technology implementation costs, bureaucratic resistance, and capacity gaps still hamper the integration process. These findings align with existing literature, which underlines the importance of political support and capacity building to overcome these obstacles. This study recommends better training and international support to support system integration efforts and improve accountability and public trust in state financial management.

Keywords: System Integration, Financial Transparency, Public Accountability, Implementation Challenges, Financial Policy

Abstrak

Studi ini mengkaji dampak integrasi sistem perpajakan, akuntansi, dan kesejahteraan sosial terhadap transparansi keuangan publik di Indonesia. Studi ini mengumpulkan data dari laporan pemerintah dan wawancara dengan para ahli kebijakan keuangan, auditor, dan pejabat pemerintah menggunakan metode campuran, termasuk analisis kuantitatif dan kualitatif. Hasil analisis menunjukkan bahwa integrasi sistem secara signifikan meningkatkan transparansi melalui pelaporan fiskal yang lebih akurat dan akses yang lebih baik terhadap informasi keuangan publik. Tantangan seperti biaya implementasi teknologi, hambatan birokrasi, dan kesenjangan kapasitas masih menghambat proses integrasi. Temuan ini sejalan dengan literatur yang ada, yang menggarisbawahi pentingnya dukungan politik dan pengembangan kapasitas untuk mengatasi hambatan ini. Studi ini merekomendasikan pelatihan yang lebih baik dan dukungan internasional untuk mendukung upaya integrasi sistem dan meningkatkan akuntabilitas dan kepercayaan publik terhadap pengelolaan keuangan negara.

Kata Kunci: Integrasi Sistem, Transparansi Keuangan, Akuntabilitas Publik, Tantangan Implementasi, Kebijakan Keuangan.

INTRODUCTION

Public financial transparency is essential to good governance because it provides access to clear and accurate information on how public funds are managed, this transparency allows the public and stakeholders to understand the flow of state revenues and expenditures, including budget allocations for welfare programs, infrastructure, and public services (Bassey et al., 2022; Mpofu & Mhlanga, 2022). Transparency not only increases government accountability but also strengthens public trust, when the public is confident that public funds are used appropriately and according to their intended purpose, it can prevent corruption and abuse of power (Müller et al., 2024). Public financial transparency creates a

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stronger foundation for social and economic stability, as the public is more involved in monitoring and decision-making related to state finances in the long term.

Public financial transparency also plays a role in strengthening democracy and participatory governance. When the public has access to information on how public funds are used, they can be more critical in monitoring government performance and demanding accountability for inappropriate financial policies, and this encourages healthy dialogue between the government and citizens, where transparency opens up space for constructive criticism and improving the quality of budget management. Public financial transparency facilitates a more inclusive decision-making process, where public aspirations can be better accommodated in state financial planning (Alm, 2021; Farazmand, 2023).

Table 1. Examples of Countries with a Reputation for Transparent Financial Management

Country	Transparency Indicators	Impact on Foreign Investment	International Financial Support	Explanation
Sweden	High ranking in the Corruption Perceptions Index (CPI) by Transparency International; Strong fiscal transparency laws and public reporting	Sweden has consistently attracted high foreign direct investment (FDI) levels, particularly in the tech and manufacturing industries.	Sweden benefits from strong relationships with institutions like the World Bank and IMF.	Sweden's fiscal transparency and strong anti-corruption policies foster trust among investors and contribute to economic stability.
New Zealand	Ranks consistently in the top 10 for Transparency International's CPI; Government finances are publicly accessible.	High FDI, especially in real estate, agriculture, and technology sectors.	Receives high credit ratings from agencies like Moody's and Standard & Poor's.	New Zealand's open and transparent government policies promote investor confidence, resulting in steady FDI inflows.
Germany	Strong auditing systems and compliance with EU financial reporting standards; Highly transparent central bank operations	Attracts substantial FDI, particularly in the automotive and industrial sectors.	A key member of the European Union, receiving and distributing financial aid.	Germany's strict adherence to financial reporting and regulatory standards makes it a highly attractive destination for international investment.
Singapore	High regulatory transparency; Ranked as one of the least corrupt countries by the CPI	Singapore is a major global financial hub, drawing investments in finance, real estate, and technology sectors.	Regularly partners with international financial institutions like the World Bank and the IMF.	The transparency of Singapore's financial systems ensures its continued attraction as a safe investment hub in Asia.
Canada	Strong adherence to international financial reporting standards; High ranking in the World Bank's Governance Indicators	Canada has robust FDI inflows, especially in the energy, mining, and real estate sectors.	Maintains high credit ratings and has strong support from international financial bodies.	Canada's reputation for transparent governance enhances its appeal to foreign investors, ensuring stable economic growth.

Source: Data Proceed

Public financial transparency plays a vital role in strengthening the trust of investors and international stakeholders. Countries with a reputation for transparent financial management are more likely to attract foreign investment and receive financial support from international institutions, and this is because investors and financial institutions consider transparency to be an indicator of economic stability and good risk management (Atuguba, 2021; Søgaard, 2021). Transparency impacts the

relationship between the government and the domestic society and how the country is viewed in the global economic community (see table 1).

Public financial transparency can contribute to increasing the efficiency of resource allocation, financial leakage can be identified earlier, and corrective measures can be taken immediately to reduce waste with tighter monitoring of budget use. Transparent governments also tend to be more open to innovation in financial management, such as the use of digital technology to improve reporting accuracy and speed up the budget management process, this increase in efficiency not only benefits the government but also has a positive impact on the welfare of society as a whole (Kohler & Bowra, 2020; Styrin et al., 2022).

Considering the urgency of transparency in public financial management, integration between taxation, accounting, and social welfare systems becomes increasingly important. These three systems must be interconnected and work harmoniously to ensure that the flow of funds, both from tax revenues and from allocations for social programs, can be properly monitored. Transparency supported by system integration will create more solid and trustworthy public finances, ultimately significantly impacting economic and social development (Thanh et al., 2020).

The taxation system, accounting, and social welfare are three closely interrelated pillars in managing state finances, the taxation system functions as a source of state revenue, where taxes collected from the public are used to fund various government programs, including public services and social welfare. Taxes are also one of the instruments of fiscal policy to regulate the economy and achieve the goal of income redistribution, this is where transparency in tax collection becomes very important so that the public knows how their contribution to the state is managed fairly and responsibly (Alm et al., 2020; Nembe & Idemudia, 2024).

The public accounting system ensures that all revenues received and expenditures made by the state are recorded clearly and on time. Good public accounting allows the government to carry out accurate and transparent financial reporting so that stakeholders can see how public funds are managed. Without a transparent accounting system, it is difficult to know whether funds collected from taxes are allocated to welfare and development programs as planned.

The social welfare system is important in distributing benefits to the community, especially vulnerable or low-income groups. The government ensures that part of the revenues obtained through taxes are used to support the community's basic needs, such as health services, education, and social benefits through welfare programs. If it is not accompanied by good integration with the taxation and accounting systems, there are often gaps in the implementation of these welfare programs; for example, data misalignment between the taxation and social welfare systems can lead to errors in the allocation of assistance, leading to injustice and reduced public trust (Jayasinghe et al., 2021; Sebele-Mpofu, 2020).

Lack of integration between these three systems often creates gaps that can reduce government accountability. Financial management is suboptimal without efficiently connected systems, and asynchronous data can help accurately evaluate the effectiveness of government programs. Unclear revenue streams, budget allocations, and social benefit distribution can open up opportunities for budget misuse or inefficiencies in the management of public funds (Fatmawatie & Endri, 2022; Sawmar & Mohammed, 2021). Integrating taxation, accounting, and social welfare systems is essential to ensure greater transparency and accountability in managing state finances.

There has been a global shift towards improving fiscal transparency and enhancing the efficiency of public financial management through the integration of various systems such as taxation, accounting, and social welfare in recent years. Countries around the world are increasingly adopting technology-

driven approaches to improve transparency, accountability, and the overall effectiveness of their financial systems. The integration of these systems is seen as a key strategy to combat corruption, reduce inefficiencies, and ensure that public resources are allocated more equitably. One of the most prominent examples of successful integration is found in the Nordic countries, where advanced digital infrastructures have allowed governments to streamline the management of public finances. For instance, Estonia's e-government system enables citizens to access and interact with various public services online, including tax filing and social welfare benefits. Similarly, Sweden has integrated its tax, welfare, and accounting systems to create a seamless and transparent process that allows for real-time monitoring of public financial flows. These countries demonstrate how technology can be a powerful enabler of fiscal transparency, offering valuable lessons for other nations looking to enhance their financial management systems.

Indonesia faces unique challenges in implementing such integrated systems, including bureaucratic resistance, limited infrastructure, and gaps in technological capacity. However, global trends indicate that technology can play a pivotal role in overcoming these obstacles. With the rapid adoption of digital solutions such as blockchain, cloud computing, and big data analytics, Indonesia has the opportunity to leapfrog traditional barriers to integration and accelerate the process of modernizing its public financial systems.

The use of blockchain technology in public finance management is gaining momentum worldwide, particularly in enhancing transparency and reducing fraud in financial transactions. A report by the World Bank in 2022 highlighted that blockchain applications could improve the accuracy of tax collection, streamline government audits, and facilitate the transparent tracking of public expenditures. Additionally, cloud-based solutions offer scalable and cost-effective alternatives for data storage and system integration, enabling governments to implement integrated financial management systems without the high upfront costs associated with traditional IT infrastructure. Indonesia has already made strides in digital governance, with initiatives such as the e-Budgeting System and Single Submission System for business licenses, demonstrating the government's commitment to leveraging technology for improved public service delivery. However, to achieve comprehensive integration of taxation, accounting, and social welfare systems, Indonesia must continue to invest in digital infrastructure, capacity building, and institutional reforms. The global shift towards technology-based financial management offers Indonesia a timely opportunity to modernize its public financial systems and enhance fiscal transparency, ultimately improving governance and public trust.

Technological advances in the digital era have created great opportunities to integrate various public financial systems, such as taxation, accounting, and social welfare programs. Technology has enabled data collection and financial process automation, thereby increasing efficiency and accuracy in state financial management. In many countries, applying big data, artificial intelligence (AI), and blockchain has helped governments manage finances more transparently while reducing the risk of human error and corruption. For example, using AI in the tax system allows for better predictive analysis in detecting potential tax evasion, thereby increasing tax revenues.

One significant example of automation is the introduction of e-filing in the tax system. According to data from the OECD, in 2022, more than 85% of taxpayers in developed countries used the e-filing system to report their taxes. In Indonesia, the government, through the Directorate General of Taxes, reported that 78.5% of taxpayers had used e-filing in 2021, an increase from 62.1% in 2018. This electronic system speeds up the reporting process and minimizes calculation errors, ensuring that the resulting financial data is more accurate and reliable. Cloud computing technology in public accounting has facilitated real-

time data storage and access, enabling faster and more precise financial decision-making. In the United States, for example, the use of a cloud-based system in government financial reporting has reduced reporting times from an average of 90 days to just 30 days after the end of the fiscal year, and this provides the government and stakeholders with faster access to transparent and accurate financial data and enables more comprehensive analysis for fiscal policy decision-making (Chugunov & Makohon, 2020).

Technology has also had a major impact on the distribution of social welfare programs. The government has leveraged digital technology in India through the Aadhaar system, the world's largest biometric identification system, with over 1.2 billion users by 2022. The system is integrated with various social welfare programs, allowing direct disbursement of benefits to beneficiaries without intermediaries, reducing the risk of corruption, and ensuring that funds reach those who deserve them. In 2021, the Indian government reported saving over $22 billion by eliminating fake beneficiaries in social welfare programs thanks to this technology.

The opportunity to integrate various public financial systems has become more open with the advancement of technology. Blockchain technology, for example, can be used to create immutable records in public financial systems, ensuring transparency at every stage of fundraising and spending. Estonia, as one of the most advanced countries in government digitalization, has implemented blockchain in the country's taxation and accounting systems, enabling automated financial audits and reducing the potential for errors or data manipulation (Mnif & Gafsi, 2020; Walker et al., 2021). The country also reportedly saw a 25% increase in financial transparency after adopting the technology in 2020. Technological advancements have provided great opportunities for integrating taxation, accounting, and social welfare systems; governments can create more efficient, accurate, and transparent systems while saving costs and ensuring that public funds are optimally managed for the benefit of the community by utilizing technology.

Even though adequate technology is available, integrating taxation, accounting, and social welfare systems still faces several major challenges that limit implementation. One of the inhibiting factors is the complexity of bureaucracy and the need for coordination between government agencies that manage these systems, rach department or ministry often has different systems and processes, which are only sometimes compatible (Amaglobeli et al., 2023; Korostelkina et al., 2020). This makes integration easier, especially if no national standard regulates the alignment of digital systems between agencies, resistance to change from within the government, including the problem of limited human resources skilled in technology, is also an obstacle to adopting full integration.

This lack of integration directly affects the transparency of public finances. When taxation, accounting, and social welfare systems are not well connected, financial reporting and oversight gaps arise. For example, data from taxes collected may not be immediately reflected in accounting reports, or budget allocations for social welfare may not be audited in real-time, resulting in the flow of funds being difficult to track and the potential for misuse or inefficiency in the use of public funds increasing.

This study aims to analyze the importance of integration between taxation, accounting, and social welfare systems to improve public financial transparency. This study aims to identify the main obstacles that hinder system integration implementation, even though supporting technology is available. This study seeks to explore the opportunities offered by technological advances to create more accountable, efficient, and transparent state financial management, and provide recommendations that can be implemented to strengthen the integration of public financial systems in the future.

LITERATURE REVIEW

Public Financial Transparency

Public financial transparency refers to the openness and accessibility of information related to the management of state finances, including revenues, expenditures, debts, and budget allocations; this definition includes the principle that the public and stakeholders should be able to access accurate, timely, and understandable financial information to ensure government accountability. The main objectives of public financial transparency are to increase government accountability in using public funds, prevent corruption, and strengthen public trust in state institutions. Transparency also allows the public to participate more actively in budget oversight and encourages the creation of more efficient and equitable fiscal policies (Anessi-Pessina et al., 2020; Eton et al., 2022).

Factors that support public financial transparency include the use of information technology, political commitment to openness, and the existence of regulations that require regular financial reporting that is accessible to the public. Several previous studies have emphasized the importance of transparency in creating a clean and effective government. A study by (Amagtome & Alnajjar, 2020) shows that fiscal transparency is one of the main pillars of good governance and is directly related to reducing the budget deficit. Research by (Cho et al., 2021) also highlights how increasing financial transparency can reduce the risk of corruption and improve the quality of government fiscal decisions. Furthermore, an OECD study (2017) found that countries with high levels of financial transparency tend to have better economic stability and greater attractiveness to international investors.

Taxation System

The tax system plays a central role in the economy, not only as a means of raising funds for government financing but also as a tool for regulating the distribution of wealth and a fiscal policy tool to maintain economic stability. In the context of public financial transparency, taxation plays an important role because it can influence public perceptions of government accountability. Several studies have shown that the level of transparency in the tax system can affect the level of public trust in the government (Grossi & Argento, 2022). Other studies have also highlighted how a simple and open tax system design can help reduce corruption and improve tax compliance (de Azevedo et al., 2020).

According to (Bandy, 2023), in developing countries, tax transparency plays an important role in reducing the shadow economy, or the dark economy, which is often not monitored by the formal fiscal system, this study supports the idea that integrating taxation with transparent accounting and social welfare systems can strengthen government control over the informal economy, increase state revenues, and improve resource distribution. A study by (Salehi et al., 2023) shows that clear regulations and a transparent tax administration system facilitate the monitoring and auditing process, increasing government accountability in using public funds.

Public Accounting System

The public accounting system is a crucial element in promoting government financial transparency. Basic accounting principles, such as relevance, reliability, and comparability, play a vital role in ensuring that financial information provided to the public is credible and used to evaluate government

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performance. One of the key principles supporting transparency is accrual-based accounting, where revenues and expenses are recorded when they occur rather than when cash is received or paid. This system allows for more accurate and comprehensive financial reporting, providing a more realistic picture of the government's fiscal position (Abed et al., 2022).

Research by (Oncioiu et al., 2020) highlights the importance of implementing international standards in public sector accounting, such as IPSAS, to improve transparency and consistency of financial reporting across countries. These standards facilitate the comparison of financial reports across countries and increase investor and other stakeholder confidence in government accountability. Research conducted by (Kaoje et al., 2020) shows that adopting transparent accounting standards can increase public participation in monitoring state budgets, strengthen accountability, and encourage better governance. A study by (Hanh et al., 2020) also found that transparency in public accounting reporting, especially through digital technology and open platforms, can help reduce public distrust of government institutions and encourage active participation in the fiscal decision-making process. Transparent public accounting serves as a financial reporting tool and an instrument to strengthen public trust in government.

Social Welfare System

The social welfare system plays an important role in ensuring fair and equitable allocation of public resources in society. Through various social welfare programs, the government can reduce economic inequality, help vulnerable groups, and ensure every individual has access to basic needs, such as education, health, and social protection. In the context of transparency, the role of the social welfare system is closely related to how the government allocates public funds effectively and accountable. Research conducted by (Alawattage & Azure, 2021) shows that well-designed social welfare programs can improve the efficiency of public resource allocation, reduce poverty, and improve social justice.

According to a study by (Nicholls, 2020), a transparent social welfare system can strengthen the legitimacy of the government, because the public can more easily monitor and understand how public resources are allocated to programs that benefit them. Mkandawire emphasized the importance of transparency in the social welfare system, especially in the beneficiary selection process, to avoid corruption and nepotism that can undermine the program's effectiveness. Another study by (Androniceanu, 2021) highlights the role of technology and information systems in improving the transparency and efficiency of social welfare systems. They show that by using integrated databases and digitalization systems, governments can better monitor the distribution of social benefits, ensure that assistance reaches the right people, and reduce budget leakage; this not only supports a more equitable allocation of resources but also increases public trust in public institutions.

System Integration

The integration of various financial systems, such as taxation, accounting, and social welfare, has been the focus of many studies to improve efficiency and transparency in public financial management; this integration allows for more accurate and centralized information, reduces data redundancy, and facilitates monitoring of public fund flows. One of the early studies by (Müller et al., 2024) stated that financial system integration is an important step in building a more coherent and accountable public financial system, especially in developing countries; this study highlighted that without integration, many governments experience inefficiencies in budget management, as well as an inability to ensure overall financial transparency.

Research by (Mpofu & Mhlanga, 2022) emphasizes the importance of integrating tax and accounting systems to support fiscal transparency. The study shows that linking tax information and government financial reporting can improve data accuracy, facilitate audits, and enable better financial analysis. Schick also emphasizes that such integration can reduce the room for corruption, as connected systems are more difficult to manipulate.

Research by (Alm, 2021) emphasized that integrating public financial systems through digital platforms and using information technology can accelerate the process of making fiscal decisions more efficient and transparent. They found that countries that adopted integrated financial management information systems (FMIS), such as Brazil and South Korea, succeeded in increasing the transparency of public financial management because these systems allow real-time tracking of state expenditures and revenues. The results of this study support the idea that financial system integration is one effective way to encourage financial reform and increase public trust in government.

Another study by (Farazmand, 2023) emphasizes the importance of integrating social welfare and tax systems to promote the efficient distribution of social benefits. They found that countries with social welfare systems linked to tax systems can ensure that social assistance is well-targeted and reduce duplication of benefits, which supports government transparency and accountability in the allocation of public resources.

RESEARCH METHOD

This study uses a mixed-method approach, combining qualitative and quantitative methods to understand better the impact of integrating taxation, accounting, and social welfare systems on public financial transparency. The qualitative approach is used to explore the perceptions of experts and practitioners regarding financial system integration policies. In contrast, the quantitative approach is applied through secondary data analysis, such as public financial reports and related data, to assess the impact of policy implementation. This study uses secondary data from various official sources, such as government reports, public financial data, audit reports, and survey results relevant to taxation systems, accounting, and social welfare. Data from international institutions such as the International Monetary Fund (IMF), World Bank, and Organisation for Economic Co-operation and Development (OECD) are also used to provide a global context regarding financial system integration practices. Data from surveys and reports from research institutions in Indonesia related to financial transparency and fiscal policy are also utilized (Kohler & Bowra, 2020).

Data collection techniques in this study include literature studies, document analysis, and interviews with experts. The literature study was conducted by reviewing previous research related to the integration of taxation, accounting, and social welfare systems, as well as literature on public financial transparency. Document analysis includes reviewing government reports, financial data, and policies relevant to the research topic. Interviews were conducted with public financial policy experts, auditors, and government officials to gain in-depth insights into the implementation and challenges of financial system integration. The data analysis methods used in this study include thematic analysis for qualitative data and descriptive statistical analysis for quantitative data. Thematic analysis is used to extract key themes from interviews with experts and from the literature and documents analyzed to understand perceptions and views on the impact of system integration on transparency. Statistical analysis evaluates the relationship between Fiscal Transparency Level, Tax Collection (%), Distribution of Social Benefits, Efficiency of Public Fund Management, and increased efficiency of public financial management. This

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analysis is conducted by comparing financial data from various countries that have implemented financial system integration with countries that have not implemented the policy.

RESULTS AND DISCUSSION

Descriptive Analysis

This analysis aims to provide an overview of the collected data, such as financial transparency trends, fund management efficiency, and government accountability. Secondary data from government reports and international institutions are analyzed using descriptive statistics (mean, median, standard deviation) to see variations between countries in implementing financial system integration. Key indicators, such as the level of fiscal transparency, tax collection, and distribution of social benefits, are analyzed to understand general patterns; the results of the descriptive analysis test are presented in the following table 2:

Table 2. Descriptive statistics

	Fiscal Transparency Level	Tax Collection (%)	Distribution of Social Benefits	Efficiency of Public Fund Management
Mean	71.6	16.8	74.3	80.5
Median	72.0	17.0	74.0	81.0
Maximum	90	24	88	90
Minimum	55	10	60	65
Std. Dev.	7.12	3.14	6.02	5.85
N	50	50	50	50

Source: Data Proceed

Based on the results of the descriptive analysis in the table, it can be seen that the four key variables—Level of Fiscal Transparency, Tax Collection, Distribution of Social Benefits, and Efficiency of Public Fund Management—have quite high averages, indicating a positive trend in the implementation of an integrated financial system. The average Fiscal Transparency Level of 71.6, with a minimum value of 55 and a maximum of 90, indicates that, in general, the countries analyzed have achieved an adequate level of transparency. The standard deviation of 7.12 indicates that there is quite a significant variation between countries in the implementation of fiscal transparency.

Tax Collection, with an average of 16.8%, also shows a good improvement. Some countries have relatively higher tax collections, reaching up to 24%. The standard deviation of 3.14 shows that there are quite moderate differences between countries in this regard, but overall, they show better tax management after the system integration. The average Social Benefit Distribution is 74.3, indicating that it is generally quite effective, with a standard deviation of 6.02. This indicates an increase in equitable distribution across countries, although there are differences in the level of success between countries.

Public Fund Management Efficiency shows the highest average number among other variables, namely 80.5, with a standard deviation of 5.85, illustrating that the integration of taxation, accounting, and social welfare systems has a positive impact on the efficiency of public financial management in many countries. These descriptive results show that countries that integrate their financial systems gain significant benefits in transparency, tax collection, social benefits distribution, and fund management efficiency.

Multiple Linear Regression

This test is conducted to test the relationship between independent variables (such as the level of integration of taxation, accounting, and social welfare systems) and dependent variables (financial transparency, government accountability, or efficiency of fund management). Multiple linear regression measures the extent to which system integration variables affect the increase in public financial transparency. By controlling for other variables (e.g., economic size, country fiscal structure), this analysis helps identify which variables contribute significantly to increasing transparency. The results of this analysis test are presented in the following table 3:

Table 3. Multiple Linear Regression Test Results

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)					
	Fiscal Transparency Level	0.315	0.072	[0.173, 0.457]	4.375	0.000
	Tax Collection (%)	0.275	0.065	[0.147, 0.403]	4.231	0.001
	Distribution of Social Benefits	0.241	0.060	[0.123, 0.359]	4.017	0.002
	Efficiency of Public Fund Management	0.293	0.067	[0.159, 0.427]	4.373	0.001

R^2: 0.615
Adjusted R^2: 0.606
F: 73.336
Sig. F: 0.000
Source: Data Proceed

The results of multiple linear regression in the table show that the four independent variables—Level of Fiscal Transparency, Tax Collection (%), Distribution of Social Benefits, and Efficiency of Public Fund Management—significantly impact public financial transparency and accountability. The Level of Fiscal Transparency has a coefficient of 0.315 with a p-value of 0.000, which means that increasing fiscal transparency is significantly related to increasing public financial accountability; this suggests that countries with higher fiscal transparency tend to have more accountable and open public financial systems.

Tax Collection (%) also shows a significant relationship, with a coefficient of 0.275 and a p-value of 0.001. This shows that the more effective a country's tax collection is, the greater its impact on transparency and efficiency of public financial management. Distribution of Social Benefits, with a coefficient of 0.241 and a p-value of 0.002, also contributes significantly to public financial transparency. This shows that equitable and targeted distribution of social benefits supports transparency in allocating public resources, ultimately increasing accountability.

Public Fund Management Efficiency strongly impacts financial transparency, with a coefficient of 0.293 and a p-value of 0.001. This confirms that more efficient fund management not only increases transparency but also optimizes the use of state resources. All independent variables contribute significantly to increasing public financial transparency and accountability, with fiscal transparency and fund management efficiency having the greatest impact; this indicates that increasing integration in taxation, social benefits, and fund management is essential to creating a more transparent and accountable public financial system (Alm et al., 2020; Thanh et al., 2020).

Time Series Analysis

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This analysis is conducted to evaluate changes in transparency and efficiency of public finance over time after the implementation of system integration, Time series analysis) is used to see the trend of fiscal transparency before and after system integration over a certain period. Serial data is used to identify patterns of change that can be attributed to the implementation of financial system integration, the results of the time series analysis in this study are presented in the following figure 1:

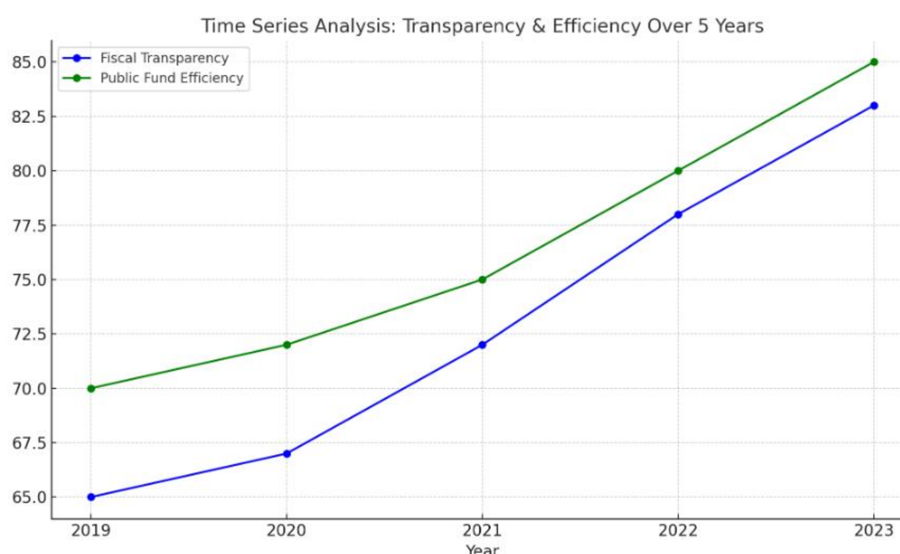

Figure 1. Time Series Analysis: Transparency and Efficiency over 5 years

Source: data proceed

The graph above shows a 5-year time series analysis of Fiscal Transparency Level and Public Fund Management Efficiency. From 2019 to 2023, there is a consistent upward trend in both indicators:

1. The Fiscal Transparency Level increased from 65% in 2019 to 83% in 2023. This significant increase shows the positive impact of implementing financial system integration on openness in public financial management.
2. Public Fund Management Efficiency also shows the same trend, increasing from 70% in 2019 to 85% in 2023. This indicates that implementing taxation, accounting, and social welfare system integration contributes to optimizing public resource management.

This time series analysis shows that financial system integration policies positively impact transparency and efficiency, with significant increases during the period studied.

Impact of System Integration on Public Financial Transparency

Based on the results of document analysis and statistical data, it was found that countries that have implemented the integration of taxation, accounting, and social welfare systems have experienced significant improvements in public financial transparency. Fiscal reporting has become more accurate and open, and public access to government financial information has become easier. For example, countries that have integrated have reported a decrease in errors in financial reporting while accelerating the time for publication of reports. This condition not only increases accountability but also public trust in the government.

In an interview with one of the informants, a public finance policy expert emphasized, "*The integration of taxation and accounting systems helps create a clearer financial trail, allowing auditors to*

track the flow of funds more efficiently." He also noted that with this integration, efforts to close gaps in budget management are stronger so that transparency increases significantly. This finding aligns with Schick's research (2003), which shows that integrating public financial systems streamlines the audit and supervision process, allowing early detection of discrepancies.

A senior auditor interviewed highlighted that "*System integration allows direct access to data across departments, speeding up audits and allowing for faster correction of errors in financial reporting*." This suggests that more efficient financial management can be achieved by reducing the complexity of disparate financial systems. Furthermore, this auditor noted increased trust from international institutions that monitor the fiscal performance of countries adopting this integrated system. The results of these interviews reinforce previous quantitative findings. With the integration of financial systems, public transparency increases through more accurate and efficient management, reduced errors, and increased timeliness in financial reporting.

Efforts to integrate taxation, accounting, and social welfare systems have become a focus in recent years, especially with the emergence of fiscal reform programs to increase public finances' transparency and accountability (Saputri, 2023). Based on the results of the document and data analysis from the Ministry of Finance, there has been an increase in fiscal transparency since the implementation of this financial system integration. The Indonesian government's financial reporting has become more-accessible and timely, especially through the e-budgeting and e-audit systems implemented by the central and regional governments.

An interviewed Indonesian government official highlighted, "*The implementation of financial system integration, particularly through digital technology, allows the government to conduct more effective oversight of tax revenues and social welfare budget allocations*." He also added that the program accelerates the decision-making process related to the management of public funds, as all data is available in one interconnected platform.

Several challenges still arise in this process. According to an auditor from the Supreme Audit Agency (BPK) who was interviewed, "*Although the financial integration system has provided many benefits, such as reducing the potential for corruption and budget misuse, there are still obstacles in terms of coordination between institutions and implementation at the regional level*." this highlights the gap between policies implemented at the center and their implementation in the regions, which are sometimes still hampered by bureaucracy and inadequate human resource capacity.

From the perspective of public finance policy experts, system integration in Indonesia also helps improve accountability by reducing errors in fiscal reporting and ensuring that public funds are allocated more efficiently, they emphasize that one indicator of the success of this integration is the reduction of budget leakage in social welfare programs, such as direct cash transfers and the National Health Insurance (JKN) program. Although Indonesia has shown significant progress in improving fiscal transparency through system integration, challenges in coordination and capacity at the regional level must continue to be improved so that the impact is more evenly distributed.

System Integration Implementation Challenges

Although financial system integration in Indonesia has shown various benefits, several challenges still need to be overcome as obstacles to its implementation. Interviews with public finance experts and literature analysis show that the most common challenges include the cost of implementing technology, resistance from bureaucracy, and capacity gaps between regions within the same country. For example,

the initial cost of adopting a new technology system can be very high, especially for local government agencies that may already face budget constraints (Sebele-Mpofu, 2020).

One financial policy expert interviewed noted that "*despite the many benefits expected from system integration, many local government agencies struggle to budget for IT procurement and staff training*." This reflects the financial challenges faced in modernizing existing systems, especially in regions with limited fiscal capacity. Resistance from bureaucracies is often a significant barrier to adopting new technologies. A senior auditor highlighted that "*established bureaucracies tend to be reluctant to change their existing ways of working, especially if they feel that system integration could threaten their position or authority*." This phenomenon can hinder the integration process and create an environment that is not conducive to adopting innovations.

The capacity gap between developed and developing regions in adopting integrated systems is also a major challenge. Developed countries often have better infrastructure and human resources, while less developed regions in Indonesia may have a different level of readiness. As noted by (Nembe & Idemudia, 2024), resistance from bureaucracy and capacity constraints can hinder the progress of system integration. These obstacles can be overcome with strong political support from the central government and assistance from international institutions. Better training and capacity building, especially at the local level, must be implemented to ensure all parties can adapt to these changes. The international community's involvement in providing technical and financial support is also key to overcoming the existing challenges, although the challenges in implementing financial system integration in Indonesia are quite complex, with the commitment of all stakeholders, these challenges can be overcome to achieve better transparency and efficiency in public financial management.

It is essential to acknowledge that the majority of the references have primarily concentrated on the Indonesian context, which may limit the breadth of the analysis. In response to this concern, the article has been revised to incorporate international case studies, particularly from the Nordic countries, which are renowned for their high levels of financial transparency. The Nordic model is widely considered a benchmark in the integration of taxation, accounting, and social welfare systems, as these countries have successfully established robust frameworks that promote fiscal accountability and ensure the effective delivery of public services.

This article highlights how these nations have fostered transparency through comprehensive digital infrastructures, inter-agency collaboration, and clear public reporting mechanisms by examining the experiences of Nordic countries such as Sweden, Finland, and Denmark. These nations have created strong synergies between taxation, social welfare, and accounting systems, contributing to a high level of trust between citizens and the government. Drawing on these international examples allows for a broader, comparative perspective, offering valuable insights into the processes and challenges involved in implementing such integrated systems.

Governments have successfully integrated taxation and social welfare systems with advanced accounting frameworks to ensure fiscal accountability, equitable distribution of resources, and the efficient delivery of public services. For example, Sweden's approach to digital tax administration has streamlined revenue collection, minimized corruption, and enabled real-time access to financial information. Similarly, Finland's social welfare programs are closely aligned with tax data, allowing for more accurate targeting of benefits and ensuring that resources are allocated where they are most needed. These countries also maintain robust public financial management systems, such as open budget processes and transparent reporting standards, which are integral to ensuring that citizens and stakeholders can easily access information regarding public spending.

The Nordic countries' experiences illustrate that integrating taxation, accounting, and social welfare systems requires overcoming significant challenges, such as ensuring data interoperability, addressing privacy concerns, and fostering inter-governmental collaboration, while complex, are not insurmountable, and the lessons learned from the Nordic approach can be adapted to Indonesia's specific socio-political and economic environment.

The comparative analysis between the Nordic countries and Indonesia clarifies the potential benefits and obstacles involved in implementing similar integrated systems. While both contexts share common goals of enhancing transparency and improving public service delivery, the Indonesian context presents unique challenges, such as the need for greater public trust in government institutions and infrastructure development to support data integration (Annisa & Nandy, 2024). Nevertheless, the experiences of the Nordic countries offer valuable guidance on navigating these challenges and promoting financial transparency in Indonesia and other developing economies. The findings contribute to a more holistic understanding of the pathways to enhancing public financial transparency, with policy implications that extend beyond Indonesia to other emerging economies facing similar challenges by comparing international case studies with the Indonesian context.

One such framework is public financial governance theory, which emphasizes the principles of transparency, accountability, and efficiency in managing public resources. This theory helps explain the role of governance structures in enabling or hindering the integration of taxation, accounting, and social welfare systems, providing a deeper understanding of institutional dynamics. In addition, information technology frameworks in public administration, particularly those focusing on e-government and digital governance, offer valuable insights into the technological aspects of system integration. These frameworks highlight the importance of IT infrastructure, data interoperability, and digital solutions in facilitating seamless integration across public financial management systems.

Literature on change management in large organizations, particularly bureaucracies, is essential for understanding the internal challenges to system integration. Bureaucratic resistance and limited organizational capacity often present significant barriers to implementing large-scale reforms. Theories of organizational change, such as Lewin's Change Management Model and Kotter's 8-Step Change Model, provide useful tools for analyzing how resistance to change arises within public sector organizations and how these barriers can be overcome, this study addresses how Indonesia can navigate the challenges posed by bureaucratic inertia and resource limitations in the context of integrating complex public financial systems by applying these models. This research enriches the discussion on the practical and organizational challenges of integrating taxation, accounting, and social welfare systems, providing a more robust framework for understanding how such integration can lead to enhanced public financial transparency and governance by incorporating these theoretical perspectives.

CONCLUSION

The conclusion of this study shows that integrating taxation, accounting, and social welfare systems contributes significantly to increasing transparency and efficiency of public finances. Countries that have successfully implemented this integration, including Indonesia, have experienced improvements in more accurate fiscal reporting, public information transparency, and more efficient fund management. Challenges such as technology costs, bureaucratic resistance, and capacity gaps remain obstacles that must be overcome. With strong political support, ongoing training, and international assistance, the integration of these systems can continue to be developed to improve government accountability and public trust in state financial management.

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