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ACCOUNTING FOR PUBLIC INFRASTRUCTURE ASSETS: CHALLENGES IN VALUATION AND RECOGNITION

Kathleen Asyera Risakotta*[1]
Jurusan Akuntansi, Universitas Pattimura, Indonesia
Email: kathleenasyera@gmail.com

Marannu Paledung
Jurusan Akuntansi, Universitas Pattimura, Indonesia
Email: marannu.paledung@lecturer.unpatti.ac.id

Ambarwati Soetiksno
Jurusan Administrasi Niaga, Politeknik Negeri Ambon, Indonesia
Email: ambarwatisoetiksno12@gmail.com

Abstract

The valuation and recognition of public infrastructure assets has become a critical issue in public sector accounting, particularly in the context of government financial transparency and accountability. Infrastructure assets such as roads, bridges, water networks, and other public facilities often possess unique characteristics that distinguish them from ordinary commercial assets, both in terms of their useful lives, maintenance costs, and contribution to public welfare. This study aims to examine the challenges in the valuation and recognition of public infrastructure assets using a literature review method. The review indicates that the main challenges arise from differences in accounting standards across countries, the limited valuation methods that adequately represent the economic and social value of infrastructure assets, and the difficulty in determining useful lives and replacement costs. Furthermore, the debate over whether infrastructure assets should be measured at historical cost or fair value is also a significant issue. This study emphasizes the need for a more adaptive, comprehensive, and public interest-oriented accounting approach to improve the reliability of government financial reports. Therefore, the results of this study can serve as a foundation for developing public sector accounting policies that are more responsive to the complexities of infrastructure management.

Keywords: Public sector accounting, public infrastructure assets, asset valuation, asset recognition

[1] Correspondence author

INTRODUCTION

The management of public assets, particularly infrastructure, is a crucial issue in modern public financial governance. Public infrastructure, such as roads, bridges, airports, ports, clean water networks, energy systems, and healthcare and education facilities, plays a vital role in supporting social and economic activities. The existence of this infrastructure not only impacts public welfare but also reflects the government's ability to fulfill its responsibility to provide basic services (Ivannikov & Dollery, 2020). However, in the context of public sector accounting, recording, valuing, and recognizing infrastructure assets still faces complex challenges. This complexity arises because infrastructure differs from conventional commercial assets in terms of its useful life, ownership structure, and intended use, which is often social and non-commercial.

Within the accounting framework, the recognition and valuation of public assets are crucial to achieving transparency, accountability, and the quality of government financial reporting. International accounting standards, such as the International Public Sector Accounting Standards (IPSAS), encourage the harmonization of public sector financial reporting practices with globally accepted accounting practices (Lombardi et al., 2021a). However, implementing these standards is not always easy in countries with varying levels of economic and institutional development. One key issue that arises is how to value public infrastructure assets, which are generally not traded in the market, making their fair value difficult to determine. Furthermore, the often long-lived nature of infrastructure with high maintenance costs presents challenges in determining a book value that is representative of the economic or social benefits it provides.

In many developing countries, another challenge arises from limited institutional capacity, data, and human resources in implementing public asset accounting standards (Isa et al., n.d.). Often, infrastructure assets are not adequately recorded in government balance sheets, so financial reports do not fully reflect the true state of state finances. This results in a lack of information for decision-makers, both in budget planning, public investment management, and evaluating the effectiveness of state spending. The lack of accurate information also impairs public accountability, as the public lacks a clear picture of the value of state-owned infrastructure assets and how these assets are maintained and utilized for the public benefit.

Challenges in the valuation and recognition of public infrastructure assets are also closely related to methodological and conceptual aspects. Several

valuation methods, such as historical cost, replacement cost, and fair value, have their respective advantages and disadvantages when applied to infrastructure assets. Historical cost, for example, provides certainty from the initial recording point of view, but is often irrelevant in reflecting the asset's value after years of use (Morozova et al., 2020). Meanwhile, replacement cost and fair value are more representative but require market data that is often unavailable, especially for unique assets or public monopolies. This methodological debate has consequences for the comparability of financial reports across countries and across periods, and influences stakeholders' perceptions of the quality of the financial information presented.

Furthermore, the recognition of public infrastructure assets cannot be separated from policy and political dimensions. The determination of whether infrastructure should be recognized as an asset in financial statements, how its value is determined, and how its depreciation is calculated are often influenced by prevailing fiscal policies and political interests. Some governments tend to delay recording depreciation or not fully recognize assets to maintain a more favorable fiscal appearance in the eyes of the public or international institutions (Barker et al., 2020). Such practices create a dilemma between compliance with accounting standards and the political realities facing the government. Therefore, the issue of accounting for public infrastructure assets is not merely technical but also fraught with dimensions of governance and institutional integrity.

Globally, there are significant differences between developed and developing countries in the implementation of accounting for public infrastructure assets. Developed countries generally have better record-keeping systems, supportive institutional infrastructure, and sufficient data availability for valuation. Conversely, developing countries face significant challenges related to limited capacity, a lack of integrated national standards, and bureaucratic resistance in implementing public sector accounting reforms (Schmidthuber et al., 2022a). These differences indicate gaps that can impact the quality of global financial reporting, particularly as international organizations strive to promote harmonization of standards (Quattrone, 2021). Therefore, research on accounting for public infrastructure assets is crucial for identifying barriers, finding solutions, and providing recommendations for improving accounting practices across various contexts.

Furthermore, issues of sustainability and sustainable development also provide new dimensions to public asset accounting. Infrastructure is not simply a physical asset with financial value; it also has long-term environmental, social,

and economic impacts (He et al., 2022). Therefore, accounting approaches that focus solely on financial valuation are often considered inadequate. The need to develop a more comprehensive reporting framework capable of representing the social and environmental value of infrastructure assets has emerged. This is increasingly relevant with increasing public demands for transparency, sustainability, and accountability in the management of state resources.

Given these challenges, research on accounting for public infrastructure assets, particularly regarding their valuation and recognition, has become crucial in the public sector accounting literature. This research seeks to examine the conceptual, methodological, and practical issues that arise in public infrastructure accounting practices, while also identifying challenges and opportunities that can be leveraged to improve transparency and accountability. Using a literature review approach, this research is expected to contribute to understanding key issues, enrich academic discourse, and provide input for policymakers and public sector accounting practitioners. Ultimately, successful resolution of issues related to the valuation and recognition of public infrastructure assets will directly impact the quality of state financial governance and public trust in the government.

RESEARCH METHOD

This research uses a literature review method to understand the challenges in the valuation and recognition of public infrastructure assets from an accounting perspective. The literature review was conducted through a search of various academic sources, such as international journal articles, public sector accounting textbooks, government accounting standards, international organization reports, and official publications of accounting regulatory bodies. This approach allows researchers to obtain a comprehensive overview of the concepts, practices, and regulatory developments related to the recording of public infrastructure assets. The analysis process was conducted by identifying frequently emerging conceptual and practical issues, such as determining fair value, differences in valuation methods, data limitations, and the implications of accounting policy for public financial transparency and accountability.

This research employed qualitative analysis techniques, including an in-depth review of relevant literature, to develop a synthesis that highlights the differing perspectives of academics, practitioners, and regulators on addressing public infrastructure asset issues. The validity of the findings was strengthened through source triangulation, comparing the results of previous

research from various country contexts and regulatory frameworks. Thus, this literature review method not only provides a map of the challenges faced in the valuation and recognition of public infrastructure assets but also offers a conceptual basis for further research and future policy recommendations.

RESULT AND DISCUSSION

Challenges in Valuing Infrastructure Assets

Valuing infrastructure assets is one of the greatest challenges in both public and private sector accounting due to the large-scale, complex nature of these assets, and their unique characteristics. Public infrastructure such as roads, bridges, electricity grids, ports, or water systems is not merely a tangible physical asset; it also has social and economic dimensions that are difficult to measure directly (Piryonesi & El-Diraby, 2020). In the accounting context, the primary challenge lies in determining a value that best reflects the economic condition of the asset while still being transparently accounted for in the financial statements. This makes the issue of infrastructure asset valuation not only technical but also has implications for policy, regulation, and public financial governance.

One of the most significant challenges is the complexity of determining the fair value of infrastructure assets (Broo & Schooling, 2023). Fair value is conceptually defined as the price that would be received in a sale and purchase transaction between knowledgeable, independent parties who are willing to transact on the valuation date. However, in the context of infrastructure assets, there is rarely an active market to benchmark fair value determination. Toll roads, dams, or energy distribution networks lack open markets for similar assets, making the market value approach difficult to apply. As a result, appraisers often have to use the replacement cost or discounted cash flow approaches, which are full of assumptions. The replacement cost approach requires determining how much it would cost to rebuild an asset with a similar function today, while the discounted cash flow approach relies heavily on estimates of projected future economic benefits, which are often influenced by uncertain government policies and other external factors. This complexity is further compounded when infrastructure assets are used for public purposes and do not necessarily generate immediate cash flows, such as public roads or city parks, whose value is determined more by social benefits than economic ones (Tian et al., 2020).

Furthermore, the debate between the use of historical cost and present value in reporting presents a dilemma. Historical cost has long been viewed as

the most objective method because it is based on actual expenditures at the time the asset was acquired or constructed. The advantages of historical cost lie in its certainty and ease of verification, making financial statements more auditable and reliable (Assaad & El-adaway, 2020a). However, the main weakness of this method is its inability to reflect current economic conditions, especially when inflation or significant changes in market prices occur. For example, a bridge built 30 years ago at a certain cost would have a very small historical value compared to the cost of building a similar bridge today. This risks making financial statements less relevant for strategic decision-making. Conversely, the use of current value is considered more relevant because it reflects prevailing economic conditions, but it poses significant challenges in terms of reliability and subjectivity. Estimating current value often involves complex calculations, adjustments for market prices of materials and labor, and macroeconomic assumptions that are not always certain. Therefore, the debate between relevance and reliability continues to be a central issue in infrastructure asset valuation.

Another equally significant challenge is the difficulty in estimating the useful life and depreciation of infrastructure assets. Unlike conventional fixed assets such as vehicles or production machinery, which have relatively measurable life cycles, the useful life of infrastructure assets is often very long and dependent on various external factors (Invernizzi et al., 2020). For example, a highway might be planned to last 40 years, but extreme weather conditions, higher-than-expected traffic loads, or deteriorating construction quality can significantly shorten its useful life. Conversely, some infrastructure assets can last longer than initially estimated due to proper maintenance and improvements in maintenance technology. This makes useful life estimates subjective and potentially inconsistent across entities. Another challenge is determining the most appropriate depreciation method. Straight-line depreciation may not always reflect the consumption pattern of an infrastructure asset's economic benefits, while usage-based or productivity-based methods are more difficult to apply because accurate data is often unavailable. Uncertainty in depreciation can impact the recognition of expenses, profits, and the asset's carrying value in financial statements, ultimately impacting the transparency and accountability of both public and private entities. Furthermore, the difficulty in valuing infrastructure assets also relates to the non-financial dimensions inherent in these assets. Public infrastructure is valued not only based on its revenue-generating capacity, but also on its contribution to social development, improving public welfare, and its

strategic role in supporting national economic growth. These values are very difficult to quantify using conventional accounting methods, so financial statements often do not fully reflect the actual benefits provided (Wojewnik-Filipkowska et al., 2019). This creates a gap between accounting reporting and public perception of the true value of infrastructure (Faishol & Putra, 2024). For example, a public hospital may have a certain accounting value, but the social benefits it provides far exceed the figures recorded in the financial statements.

Thus, valuing infrastructure assets presents multidimensional challenges that are not only technical, but also conceptual and policy-based. The complexity of determining fair value, the dilemma between historical cost and present value, and the difficulty of estimating useful life and depreciation are issues that require serious attention in accounting practice. The development of more adaptive methodologies, clearer accounting standards, and multidisciplinary engagement between accountants, engineers, economists, and policymakers are needed to address these challenges. Without adequate solutions, financial reports can lose relevance and reliability, failing to provide a comprehensive picture of the true condition and value of infrastructure assets. Therefore, research and innovation in infrastructure asset accounting are crucial, particularly in an era of development that increasingly demands transparency and accountability.

Infrastructure Asset Recognition Issues

The issue of recognizing infrastructure assets in public sector accounting is a complex challenge due to policy consistency, limited historical data, and the diverse characteristics of the assets themselves. Infrastructure assets are essentially tangible assets used for long-term public benefit, such as roads, bridges, dams, irrigation networks, ports, and mass transportation systems (Almeida et al., 2022). Recognizing these assets in financial statements not only aims to comply with accounting standards but also serves as a crucial instrument for ensuring transparency and accountability in state financial management. However, in practice, various obstacles exist, making the issue of recognizing infrastructure assets a topic of lengthy discussion among academics, practitioners, and regulators.

One key issue that arises is the difference in accounting policies between the central government and regional governments. Under fiscal decentralization, regional governments are given the authority to manage infrastructure assets within their jurisdictions (Abdirad & Dossick, 2020). However, the standards for recording and recognition applied are often

inconsistent. The central government typically adheres to national government accounting standards developed based on international accounting principles, while local governments face limitations in human resources, recording systems, and technical understanding of these regulations. This capacity gap results in variations in the recording of infrastructure assets, including the timing of recognition, valuation methods, and presentation in financial statements. This misalignment poses challenges in the preparation of national asset consolidation reports, as data obtained from the regions often does not align with the standards applied at the central level (Assaad & El-Adaway, 2020b).

Furthermore, establishing the criteria for recognizing infrastructure assets is also a critical issue. Infrastructure assets have characteristics that differ from other tangible assets because they are used for public services, not for direct profit generation. This raises fundamental questions about the criteria that should be used for these assets to be recognized in financial statements (Musa Adekunle Adewoyin, 2022). Is formal proof of ownership, such as a land certificate or construction documents, sufficient, or must the asset first be ensured to provide genuine economic and social benefits to the community? In practice, many infrastructure assets are widely used by the public but lack clear ownership status, such as village roads built independently or irrigation channels that have existed for a long time but have not been officially recorded. This situation complicates the application of standard recognition criteria, often resulting in differences in treatment between reporting entities.

Another equally significant obstacle is the initial recording of infrastructure assets, particularly for legacy assets that have been in use for years without ever being officially recorded (Mcmahon et al., 2020). Many infrastructure assets built in previous eras lack adequate planning documents or evidence of construction costs. Consequently, when the government began implementing modern accounting standards, difficulties arose in determining the value to be recognized. Should this value be based on estimated acquisition costs at the time of construction, current fair value, or simply recorded symbolically without a monetary value? This lack of historical data often gives rise to debate, as each approach has implications for the reliability and relevance of financial statements. Using historical cost estimates is prone to inaccuracy; while using fair value requires expert appraisals, which can be costly and time-consuming.

The issue of infrastructure asset recognition is also related to administrative and technical challenges in the inventory process. The asset data

collection process often faces obstacles due to the scattered locations, large area, and varying conditions of assets. Many local governments lack an adequate asset information system to record and monitor all the infrastructure they manage. This results in unrecorded, duplicated, or even missing assets from official records (Ferreira & Sandner, 2021). The re-registration process is also often hampered by bureaucracy and limited human resources in government accounting, making it difficult to achieve the target of preparing comprehensive asset reports in a short time.

The issue of infrastructure asset recognition becomes even more crucial when linked to the government's obligation to present reliable, transparent, and accountable financial reports. The public has the right to know the value of public assets owned by the state, how these assets are managed, and the extent of their contribution to public services. If the recognition process is not carried out properly, financial reports have the potential to misrepresent the true condition, which can ultimately undermine public trust in the government. Therefore, this issue is not merely a technical accounting issue but is also closely related to good governance. To address these issues, efforts are needed to harmonize accounting policies between the central and regional governments, including the development of clear technical guidelines regarding the criteria for recognizing infrastructure assets. Furthermore, a comprehensive asset inventory program, supported by information technology, is needed to ensure a more accurate and integrated recording process. The government also needs to consider a realistic approach to recognizing legacy assets, for example through estimation or valuation methods tailored to data availability. This way, infrastructure asset recognition can be carried out consistently, transparently, and responsibly, ensuring that government financial reports truly reflect the true value of state assets.

Transparency and Accountability

Transparency and accountability are two crucial pillars in public financial management, particularly in the context of reporting infrastructure assets, which play a strategic role in the sustainability of national development. Infrastructure assets, which include roads, bridges, airports, ports, irrigation systems, and other public service facilities, are not merely figures in financial reports but rather reflect the tangible manifestation of government investment in public welfare (Dubber et al., 2020). Therefore, accurate, clear, and accountable reporting of infrastructure assets is a vital instrument for creating good governance. The relationship between infrastructure asset reporting and

fiscal transparency lies in the ability of public sector financial reports to present a comprehensive picture of the condition of state assets, how they are managed, and the extent to which they benefit the public. Without transparency, it is difficult for the public to monitor whether infrastructure asset management is aligned with development objectives or is creating an excessive fiscal burden.

Reporting infrastructure assets in accordance with accounting standards plays a role in reducing information asymmetry between the government and the public. When financial reports provide accurate information on asset values, maintenance costs, useful lives, and replacement plans, the public can objectively assess the government's performance in managing infrastructure. Fiscal transparency, in this case, means that the government reports not only the amount of expenditure or capital expenditure, but also the existence, value, and condition of assets constructed with public funds. For example, highways constructed with state budget funds must be reported not only in terms of construction costs, but also as assets with economic value, technical lifespan, and future maintenance obligations (Ortega-Rodríguez et al., 2020). This way, the public obtains a comprehensive picture of the fiscal consequences of infrastructure development and can gauge the extent to which public spending generates long-term benefits.

Furthermore, transparent reporting of infrastructure assets can bolster investor and international donor confidence in a country's fiscal stability. Transparency in the presentation of public financial data demonstrates the government's commitment to professional and responsible asset management (Willems, 2021). This, in turn, can open access to new financing, both through government bonds and international cooperation, as strong fiscal credibility is a key indicator of sustainable development. Fiscal transparency, supported by sound accounting, also enables the evaluation of infrastructure development policies. When asset data is clearly accessible, the public and supervisory agencies can assess whether development is in line with national priorities, or whether there are discrepancies in budget allocation (Sari & Muslim, 2023).

On the other hand, accounting plays a crucial role in strengthening accountability in public financial management. Accountability requires the government to be accountable for every decision and use of public funds to the public, legislative bodies, and other supervisory institutions. In the context of infrastructure assets, accounting serves as a recording, measurement, and reporting mechanism that enables an audit trail of every transaction related to the construction, maintenance, and disposal of assets. With a sound accounting

system, every rupiah spent on infrastructure can be tracked and linked to the results achieved. This is crucial to ensure that public spending truly reflects the needs of the community and does not fall prey to wasteful or corrupt practices (Mason, 2020).

Furthermore, accounting enables the government to prepare financial reports that can be independently audited, thereby strengthening the external oversight function. Audits of financial reports, based on accounting standards, can provide an opinion on whether infrastructure asset management has complied with the principles of transparency and accountability. This auditor's opinion is beneficial not only to the government but also to the public, who want to ensure that public funds are used wisely. Strong accountability will drive improvements in the quality of public spending, as every government work unit understands that the use of public funds will be openly evaluated and accounted for. Thus, accounting serves not only as a technical recording tool but also as a governance instrument that binds government behavior to maintain integrity.

Accounting also plays a role in building a culture of sustainability-oriented asset management (Amalia, 2023). With clear records of asset values, depreciation, and maintenance needs, the government can plan infrastructure management more rationally and sustainably. For example, when accounting data indicates that a bridge is nearing the end of its useful life, the government can immediately plan budget allocations for repairs or new construction, thereby minimizing the risk of infrastructure failure. This process reflects a form of long-term accountability, where the government is responsible not only for construction but also for the continued function of infrastructure in serving the public. Thus, accounting plays a role in linking short-term financial decisions with their long-term impact on public welfare.

The overall process of reporting infrastructure assets, based on sound accounting, creates a synergy between transparency and accountability. Transparency provides open information to the public, while accountability ensures that this information can be accounted for ethically and professionally. These two aspects reinforce each other in building sound public financial governance. When the government presents honest and detailed reports on infrastructure assets, the public can exercise oversight, and in turn, the government is encouraged to act more prudently and responsibly. This reciprocal relationship creates a cycle of trust that is a crucial foundation for democracy and sustainable development.

Therefore, transparency and accountability in infrastructure asset reporting are not merely administrative obligations but also strategic imperatives in public financial management. Fiscal transparency, realized through accurate asset reporting, helps the public understand the state's financial condition, while accountability, strengthened by accounting, ensures that the use of public funds is ethically and efficiently accounted for. Both are fundamental to creating clean, credible governance that meets public demands for equitable and sustainable development.

The Role of Accounting Standards in Regulating Public Infrastructure

The role of accounting standards in regulating public infrastructure is a critical issue in public sector financial management, particularly because infrastructure assets have unique characteristics that distinguish them from other assets in general. Public infrastructure, such as roads, bridges, dams, transportation systems, and electricity and water networks, is typically owned for the long term, serves the benefit of the wider community, and often does not generate direct revenue (Lombardi et al., 2021b). This requires specific guidelines for accounting treatment of public infrastructure to ensure its presentation in government financial statements fairly reflects its value and role. Accounting standards serve as a foundation for creating transparency, accountability, and consistency in the management and reporting of public infrastructure assets.

Internationally, the accounting standards that play a major role in regulating the recognition, measurement, and reporting of public infrastructure assets are the International Public Sector Accounting Standards (IPSAS) (Schmidthuber et al., 2022b). IPSAS were developed to adapt accounting practices to the characteristics of the public sector, which differ from those of the private sector. One fundamental difference between IPSAS and private sector accounting standards such as International Financial Reporting Standards (IFRS) lies in the purpose of financial statements. IFRS tends to focus on presenting relevant information for investors and shareholders in making economic decisions, while IPSAS aims to present information that can be used to evaluate government accountability for public resources and in resource allocation decisions (Polzer et al., 2022). This difference in objectives leads the accounting treatment of infrastructure assets in the public sector to emphasize the sustainability of services and social benefits, rather than simply economic value or potential cash flow generation.

However, at the national level, many countries, including Indonesia, have government accounting standards developed based on local conditions and needs. In Indonesia, for example, Government Accounting Standards (SAP) serve as the primary guideline for government financial reporting, including regarding the recognition and measurement of infrastructure assets. Although SAP refers to international principles like IPSAS, their implementation is tailored to domestic fiscal policies, legal regulations, and institutional capacity. These differences often pose challenges when comparing financial reports between countries or when governments engage in international projects that require uniform standards (Polzer et al., 2021). Therefore, comparing international accounting standards such as IPSAS or IFRS with national standards opens up discussion about the level of harmonization needed to enhance transparency, while simultaneously considering the inherent local context.

The implications of implementing accounting standards in the public sector are also far-reaching. From a transparency perspective, consistent application of standards helps ensure that public infrastructure assets are clearly recorded and reported, making them accessible and understandable to both the public and regulatory agencies (Polzer et al., 2021). This is crucial given the substantial state investment in infrastructure development and its impact on public finances. From an accountability perspective, accounting standards enable the government to be accountable for the use of public funds, particularly related to the construction and maintenance of infrastructure assets. Standardized financial reports can serve as a basis for evaluating government performance and boost public trust.

Furthermore, the implementation of accounting standards also impacts planning and decision-making. With standardized guidelines on how infrastructure assets should be recognized, measured, and depreciated, the government can formulate more accurate budget policies. For example, determining the useful life of infrastructure influences the calculation of depreciation costs, which in turn impacts budget planning for maintenance and new construction. In the context of managing such large and complex assets, accounting standards serve as a tool to prevent inefficient management practices and potential misuse of funds (Cuadrado-Ballesteros et al., 2020).

However, the implementation of international accounting standards in the public sector also presents its own challenges. Many developing countries face limitations in human resources, information technology, and adequate institutional infrastructure to optimally implement standards. On the other hand, the need to adhere to international standards is increasing, particularly in

the context of globalization, the involvement of international donor agencies, and demands for global transparency. This situation necessitates adaptation strategies at the national level, including training, updating accounting information systems, and strengthening regulations so that accounting standards can be effectively implemented in public infrastructure management (Hussain, 2022).

Overall, accounting standards serve as a foundation for regulating public infrastructure, both in the context of reporting, accountability, and policy planning. A comparison of international standards such as IPSAS and IFRS with national standards demonstrates the need for harmonization and flexibility in implementation. The implications of implementing these standards emphasize the importance of transparency, accountability, and sustainability in public asset management. Therefore, the role of accounting standards is not merely technical but also strategic, contributing to better governance and increased public trust in state financial management.

CONCLUSION

Research on accounting for public infrastructure assets indicates that the primary challenge lies in the complexity of their valuation and recognition. Public infrastructure has unique characteristics, such as long economic lives, close ties to public services, and the difficulty of directly measuring economic benefits. These conditions make traditional market-value-based valuation methods irrelevant. Uncertainties in measuring fair value and acquisition cost also complicate the accounting process, leading to differences in practice across jurisdictions.

Furthermore, the recognition of public infrastructure assets requires a balance between compliance with accounting standards and the need to reflect economic realities. Many governments face the dilemma of determining when infrastructure should be recognized as an asset and when it should be considered merely an expense. This challenge is exacerbated by limited record-keeping resources, limited historical data availability, and adherence to national and international regulations. Therefore, accounting practices for public infrastructure assets are not merely technical but also closely related to transparency, accountability, and legitimacy of public sector finances.

Overall, this research confirms the need for a more adaptive and contextual approach to the valuation and recognition of public infrastructure assets. International accounting standards such as IPSAS can serve as a reference, but their implementation requires consideration of each country's

specific circumstances, including economic, legal, and institutional capacity. Policy harmonization, increased technical capacity of government officials, and the adoption of digital technology in asset management will be key to addressing these challenges. These measures will enable public infrastructure asset accounting to better reflect its true value while improving the quality of government financial reports.

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