



Digital transformation strategies for enhancing transparency and efficiency in public asset management systems

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ABSTRACT

Digital transformation has become a strategic priority for improving governance, accountability, and operational effectiveness in the public sector. However, evidence on its role in enhancing transparency and efficiency in public asset management remains fragmented. This study aimed to synthesize digital transformation strategies for improving public asset management. A qualitative Systematic Literature Review (SLR) following the PRISMA 2020 guidelines was conducted using 52 peer-reviewed studies published between 2015 and 2025. The included studies were critically appraised, and thematic coding achieved substantial inter-rater reliability (Cohen's $\kappa = 0.84$). The analysis identified five strategic dimensions: digital infrastructure, integrated asset information systems, data governance and interoperability, transparency enhancement, and efficiency enhancement. Integrated asset information systems and data governance emerged as the strongest enablers of transparency and operational efficiency. The proposed Digital Transformation Strategy Framework integrates technological, governance, institutional, transparency, and efficiency dimensions into a unified model for public asset management. These findings provide practical and theoretical guidance for strengthening transparency, efficiency, accountability, and public value creation.



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Introduction

Digital transformation has fundamentally reshaped contemporary public administration by enabling governments to modernize governance structures, improve service delivery, and strengthen evidence-based decision-making. Rapid advances in cloud computing, artificial intelligence, big data analytics, blockchain, and integrated information systems have transformed the way public

organizations manage information, coordinate institutional processes, and utilize public resources. Unlike earlier e-government initiatives that primarily digitized administrative procedures, digital transformation represents a comprehensive organizational reform involving governance mechanisms, institutional arrangements, managerial processes, and public value creation (Egodawele et al., 2022; Lips, 2024; Mergel et al., 2019; Vial, 2019). Consequently, governments increasingly recognize digital transformation as a strategic governance agenda for enhancing accountability, responsiveness, effectiveness, and long-term organizational performance within an increasingly data-driven environment.

Digital governance extends beyond the provision of online public services by emphasizing the strategic integration of digital technologies into governance processes to improve institutional capacity, policy implementation, and public value creation (Criado & Gil-Garcia, 2019; Idzi & Gomes, 2022). Recent studies demonstrate that digital technologies support greater transparency, organizational effectiveness, evidence-based policymaking, and citizen trust when supported by appropriate governance arrangements (Magakwe, 2025; Selvakumar et al., 2025). The COVID-19 pandemic further accelerated digital transformation by highlighting the necessity of digital capabilities for maintaining administrative continuity and organizational resilience under disruptive conditions (Eom & Lee, 2022; Nosike et al., 2024). These developments indicate that digital transformation should be understood not merely as technological adoption but as a governance innovation capable of reshaping institutional performance across multiple public sector functions.

One strategic area in which digital transformation has received comparatively limited scholarly attention is public asset management. Public assets—including land, buildings, transportation infrastructure, utilities, and other state-owned resources—represent fundamental components supporting public service delivery, economic development, and fiscal sustainability (Arimoro & Musa, 2025; Netswera et al., 2022). Effective asset management requires accurate information, coordinated institutional processes, transparent governance, integrated digital systems, and efficient resource allocation throughout the asset lifecycle (Lubis et al., 2024; Tirayoh et al., 2021). Nevertheless, many governments continue to experience fragmented asset databases, inconsistent documentation, limited interoperability, bureaucratic procedures, and information asymmetry, resulting in inefficient asset utilization and reduced public value creation. These persistent governance challenges have increased interest in identifying digital transformation strategies capable of improving public asset management systems through digital integration, accountability, and sustainable governance (Setiawan et al., 2025).

Transparency constitutes a fundamental governance principle in public asset management because governments are expected to demonstrate accountability throughout the acquisition, utilization, maintenance, valuation, and disposal of public assets. Transparent governance enables stakeholders to access reliable information, strengthens public oversight, and reduces opportunities for inefficiency, mismanagement, and corruption (Birdayanthi et al., 2025; Cucciniello et al., 2016). Previous studies consistently report positive relationships between transparency, institutional legitimacy, and public trust (Aslam & Ahmed, 2024; Handayani, 2025). Digital technologies further strengthen transparency through integrated information systems, open government data, digital reporting platforms, and real-time asset information, thereby improving accountability and information accessibility (Tariq, 2025; Yao, 2024). Despite these opportunities, technological, organizational, and institutional barriers continue to constrain the implementation of transparent public asset management systems.

Governments are also expected to maximize the utilization of public assets while minimizing administrative burdens, operational costs, and resource inefficiencies. Digital transformation contributes to these objectives through process automation, integrated data management, predictive analytics, and real-time monitoring systems that support more effective planning, maintenance, and resource allocation (Akanbi, 2023; Aldoseri et al., 2023). Recent studies report positive associations between digital transformation and improvements in organizational performance, operational effectiveness, and public sector agility (Atobishi et al., 2024; Mergel et al., 2021). However, the governance mechanisms through which digital transformation simultaneously improves

transparency and operational efficiency within public asset management systems remain insufficiently understood.

Although research on digital transformation, digital governance, transparency, organizational performance, and public asset management has expanded considerably, these research streams have largely evolved in parallel rather than through conceptual integration. Digital transformation studies predominantly examine technological adoption, organizational innovation, digital service delivery, and smart governance (Balaji, 2025; Gil-Garcia et al., 2018; Kim et al., 2024), whereas public asset management research mainly focuses on financial valuation, engineering, infrastructure maintenance, and operational optimization without explicitly incorporating digital governance perspectives (Giglio et al., 2018; Sumaryana et al., 2024). Consequently, existing scholarship provides limited explanation of how technological capabilities interact with governance mechanisms and institutional arrangements to improve transparency and operational efficiency across the public asset management lifecycle. This conceptual separation restricts theoretical development and limits practical guidance for governments implementing digital asset management reforms.

Despite substantial progress in digital government research, a significant knowledge gap remains between the recognized potential of digital transformation and the mechanisms through which it generates governance improvements in public asset management. Existing scholarship has established that digital technologies enhance innovation, organizational performance, and service delivery; however, limited comparative and synthesis-based evidence, particularly from systematic literature reviews, explains which digital transformation strategies consistently improve transparency and efficiency across different governmental contexts. Most existing studies rely on single-case investigations or context-specific analyses, making it difficult to identify transferable governance strategies and establish an integrated understanding of digital transformation in public asset management. Furthermore, previous studies rarely combine Digital Governance Theory and Institutional Theory to explain how technological capabilities, governance mechanisms, and institutional factors collectively shape transformation outcomes.

To address these gaps, this study systematically examines and synthesizes scholarly evidence on digital transformation strategies implemented in public asset management systems. Specifically, the study aims to (1) identify the principal strategic dimensions of digital transformation reported in the literature, (2) compare their contributions to transparency and operational efficiency across different governmental contexts, and (3) develop an integrated conceptual framework explaining the relationships among technological capabilities, governance mechanisms, institutional arrangements, transparency, and efficiency based on studies published between 2015 and 2025. Guided by Digital Governance Theory and Institutional Theory, the review employs thematic synthesis to analyse the strategic pathways through which digital transformation contributes to governance improvement. The principal novelty of this study lies in the development of the Digital Transformation Strategy Framework for Public Asset Management Systems, which integrates digital infrastructure, integrated asset information systems, data governance and interoperability, transparency enhancement mechanisms, and efficiency enhancement mechanisms into a unified analytical model. Unlike existing digital governance frameworks that primarily emphasize e-government implementation or digital service delivery, the proposed framework explicitly explains how these interconnected dimensions generate transparency, operational efficiency, and public value within public asset management systems. Accordingly, this study addresses the following research question: How do digital transformation strategies contribute to transparency and operational efficiency in public asset management systems, and how can these relationships be synthesized into an integrated governance framework based on the global scholarly literature published between 2015 and 2025?

Method

This study employed a qualitative Systematic Literature Review (SLR) to examine digital transformation strategies that enhance transparency and efficiency in public asset management systems. The review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines to ensure a transparent, systematic, and reproducible review

process (Page et al., 2021). An SLR was selected because it enables the comprehensive identification, critical evaluation, and synthesis of existing evidence while minimizing selection bias compared with conventional narrative reviews. The review focused on scholarly publications addressing digital transformation, digital governance, public asset management, transparency, accountability, efficiency, and public sector performance published between 2015 and 2025, reflecting the rapid evolution of digital governance during the last decade.

Relevant literature was systematically retrieved from Scopus, Web of Science, ScienceDirect, SpringerLink, Emerald Insight, Wiley Online Library, Taylor & Francis Online, and Google Scholar as a supplementary source. The search strategy combined predefined keywords using Boolean operators, including "digital transformation" OR "digital government" OR "digital governance" AND "public asset management" OR "government asset management" AND (transparency OR accountability) AND (efficiency OR "public sector performance"). Database-specific search syntax was adjusted where necessary while maintaining conceptual consistency across all searches. Duplicate records were removed prior to the screening process.

Explicit eligibility criteria were established before the study selection process. Publications were included if they (1) were published between 2015 and 2025, (2) were written in English, (3) were peer-reviewed journal articles, scholarly books, institutional reports, or policy publications, and (4) examined digital transformation or digital governance in relation to public asset management, transparency, accountability, or public-sector efficiency. Publications were excluded if they focused exclusively on private-sector asset management, lacked sufficient methodological or analytical information, were conference abstracts, editorials, opinion papers, or duplicate records. The inclusion and exclusion criteria are summarized in Table 1.

Table 1. Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Publication period	2015–2025	Before 2015
Language	English	Non-English
Publication type	Peer-reviewed journal articles, scholarly books, institutional reports, and policy publications	Editorials, conference abstracts, opinion papers, unpublished manuscripts, duplicate records
Research context	Public sector and public governance	Private sector
Research topic	Digital transformation, digital governance, public asset management, transparency, accountability, efficiency	Studies unrelated to public asset management or governance

The study selection process followed the PRISMA 2020 framework consisting of identification, screening, eligibility assessment, and inclusion stages. A total of 428 records were initially identified, 67 duplicate records were removed, 361 records were screened, 173 full-text publications were assessed for eligibility, and 52 studies were included in the final qualitative synthesis. The complete study selection process is illustrated in Figure 1.

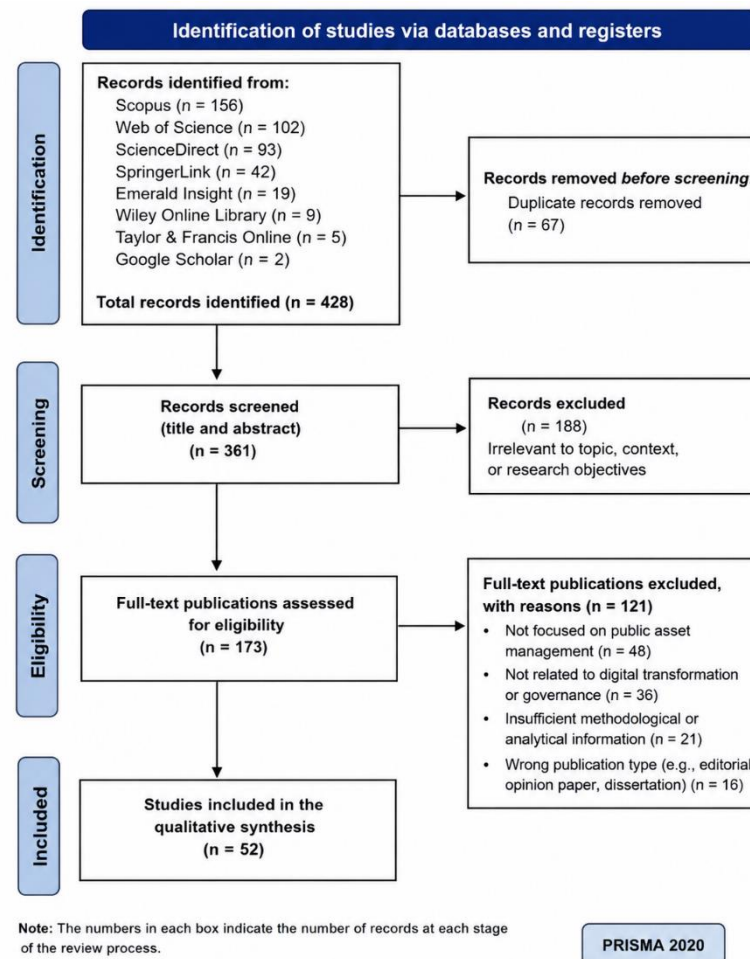


Figure 1. PRISMA 2020 Flow Diagram

Data were extracted using a structured review matrix to ensure consistency throughout the synthesis process. Information extracted from each publication included the author(s), year of publication, research objectives, theoretical perspective, methodological approach, study context, principal findings, and implications for public asset management. To enhance analytical transparency, extracted data were systematically organized into comparable categories prior to synthesis.

The evidence was analysed using thematic analysis supported by qualitative content analysis. Initially, relevant findings from each publication were coded according to recurring concepts related to digital transformation and public asset management. Similar codes were subsequently grouped into broader analytical categories, from which higher-order themes were developed through iterative comparison across studies. This process enabled the identification of five strategic dimensions of digital transformation: digital infrastructure development, integrated asset information systems, data governance and interoperability, transparency enhancement mechanisms, and efficiency enhancement mechanisms. Qualitative content analysis was then employed to interpret relationships among these themes and to synthesize them into an integrated conceptual framework explaining how digital transformation contributes to transparency and operational efficiency in public asset management systems.

The credibility of the review was strengthened through the use of multiple academic databases, predefined eligibility criteria, transparent documentation of the study selection process, and systematic comparison of findings across diverse institutional contexts. Nevertheless, this study is limited by its reliance on English-language publications indexed in the selected databases and may not capture relevant evidence published in other languages or unpublished sources. Despite these limitations, the adopted methodology provides a robust foundation for developing an integrated conceptual framework of digital transformation strategies in public asset management.

Results and Discussions

Characteristics of the Included Studies

Following the systematic review procedure described in the Method section, 52 studies published between 2015 and 2025 satisfied the predefined eligibility criteria and were included in the qualitative synthesis. These studies constitute the evidence base for developing the proposed Digital Transformation Strategy Framework for Public Asset Management Systems. The selected literature encompasses a broad range of perspectives on digital transformation, digital governance, public asset management, transparency, accountability, and public sector performance, reflecting the multidisciplinary nature of this research field.

The characteristics of the included studies are summarized in Table 2. Digital transformation in the public sector represents the largest research focus (30.8%), followed by public asset management systems (21.2%), transparency and accountability (19.2%), efficiency and public sector performance (15.4%), and digital governance and institutional theory (13.4%). This distribution suggests that recent scholarship has gradually shifted from examining digital technologies as isolated innovations toward understanding their strategic role in strengthening governance, improving organizational performance, and creating public value through more transparent and efficient public asset management.

Table 2. Characteristics of the Included Studies (n = 52)

Research Area	Number of Studies	Percentage (%)
Digital Transformation in Public Sector	16	30.8
Public Asset Management Systems	11	21.2
Transparency and Accountability	10	19.2
Efficiency and Public Sector Performance	8	15.4
Digital Governance and Institutional Theory	7	13.4
Total	52	100

Thematic Synthesis of Digital Transformation Strategies

The thematic analysis identified five strategic dimensions that consistently appeared across the reviewed studies. These dimensions do not operate independently; rather, they form an integrated transformation pathway through which digital technologies improve governance quality, organizational transparency, and operational efficiency in public asset management systems. The identified themes and their strategic contributions are presented in Table 3.

Table 3. Strategic Themes Identified from the Literature

Strategic Theme	Key Findings from the Literature	Strategic Contribution
Digital Infrastructure Development	Development of digital platforms, cloud computing, cybersecurity, and network connectivity	Provides the technological foundation for digital transformation
Integrated Asset Information Systems	Integration of asset inventories, valuation, maintenance, and utilization into unified digital platforms	Improves data consistency and evidence-based decision-making
Data Governance and Interoperability	Establishment of data standards, interoperability, security, and inter-agency information sharing	Strengthens coordination and information reliability
Transparency Enhancement Mechanisms	Open government data, digital dashboards, electronic reporting, and real-time information disclosure	Enhances accountability, public oversight, and institutional trust
Efficiency Enhancement Mechanisms	Process automation, predictive analytics, digital monitoring, and workflow integration	Improves operational efficiency, resource allocation, and service delivery

The first strategic dimension, digital infrastructure development, emerged as the fundamental enabler of digital transformation. The reviewed studies consistently emphasize that reliable technological infrastructure—including cloud computing, secure digital networks, integrated databases, and cybersecurity systems—is essential for supporting digital public administration and effective asset management. Without adequate infrastructure, public institutions encounter significant challenges in integrating information, maintaining data quality, and implementing digital governance initiatives.

The second dimension, integrated asset information systems, focuses on consolidating fragmented asset-related information into unified digital platforms. The literature indicates that integrated systems improve the accuracy of asset inventories, facilitate real-time monitoring, support maintenance planning, and strengthen evidence-based decision-making throughout the asset management lifecycle.

The third dimension, data governance and interoperability, extends beyond technological integration by emphasizing institutional arrangements that regulate data quality, accessibility, security, and inter-agency collaboration. The reviewed studies consistently identify interoperability as a critical requirement for enabling seamless information exchange and coordinated decision-making across government institutions.

The fourth dimension, transparency enhancement mechanisms, demonstrates how digital technologies strengthen public accountability through open government data, online reporting systems, digital dashboards, and real-time information disclosure. These mechanisms reduce information asymmetry, facilitate public oversight, and reinforce institutional legitimacy by providing stakeholders with timely and reliable access to asset-related information.

The fifth dimension, efficiency enhancement mechanisms, represents the organizational outcomes of successful digital transformation. The literature consistently demonstrates that automation, predictive analytics, integrated monitoring systems, and digital workflows streamline administrative procedures, optimize resource utilization, reduce operational costs, and improve the quality of public services.

Collectively, these findings indicate that digital transformation should be understood as an integrated governance strategy rather than merely a process of technological adoption. The five strategic dimensions interact sequentially, forming a comprehensive pathway that supports transparency, operational efficiency, and sustainable public value creation in public asset management systems.

Proposed Digital Transformation Strategy Framework for Public Asset Management Systems

The thematic synthesis formed the basis for developing the Digital Transformation Strategy Framework for Public Asset Management Systems, presented in Figure 2. The framework conceptualizes digital transformation as a sequential governance process in which technological capability, institutional integration, governance quality, transparency, and operational efficiency function as mutually reinforcing components.

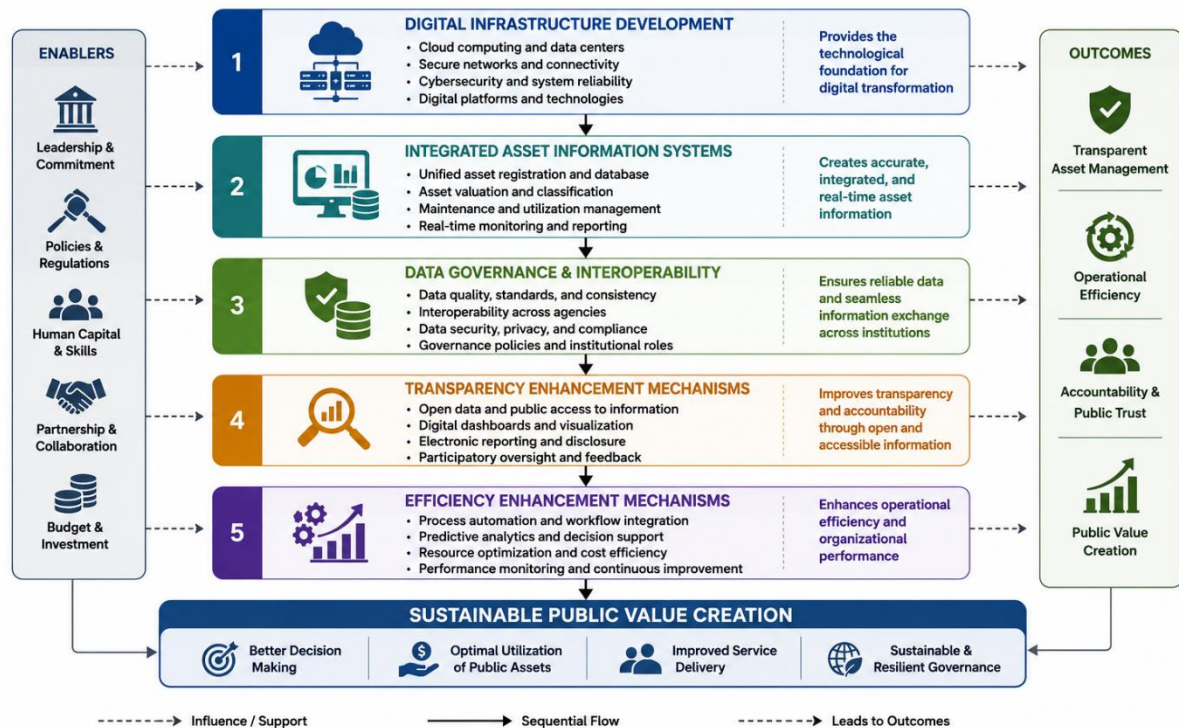


Figure 2. Proposed Digital Transformation Strategy Framework for Public Asset Management Systems

The framework positions digital infrastructure development as the enabling foundation for digital transformation. Adequate technological infrastructure supports the implementation of integrated asset information systems, allowing public organizations to consolidate asset data into unified digital platforms. These integrated systems are further strengthened through data governance and interoperability, ensuring information quality, security, consistency, and effective coordination across institutions.

Robust data governance facilitates the implementation of transparency enhancement mechanisms, including digital reporting systems, open government data platforms, and real-time public access to asset information. Enhanced transparency promotes institutional accountability and public trust while simultaneously improving organizational decision-making processes. Ultimately, transparency supports efficiency enhancement mechanisms through process automation, optimized resource allocation, streamlined administrative workflows, and evidence-based policy decisions.

The proposed framework demonstrates that digital transformation is not solely a technological initiative but an integrated governance strategy that aligns technological infrastructure, institutional capacity, and governance mechanisms to achieve transparent, efficient, and accountable public asset management. This integrated perspective represents the principal contribution of the study by providing a comprehensive conceptual model that can guide policymakers and public organizations in designing and implementing sustainable digital transformation strategies.

Discussions

The findings demonstrate that digital transformation in public asset management should be understood as a multidimensional governance transformation rather than merely the adoption of digital technologies. The thematic synthesis identified five interrelated strategic dimensions—digital infrastructure development, integrated asset information systems, data governance and interoperability, transparency enhancement mechanisms, and efficiency enhancement mechanisms—that collectively explain how digital transformation strengthens governance performance in public asset management. Rather than functioning as isolated initiatives, these dimensions represent

complementary governance capabilities through which technological innovation is translated into institutional transparency, operational efficiency, and public value creation. This interpretation reinforces previous arguments that digital transformation is fundamentally an organizational and institutional change process rather than a purely technological intervention (Mergel et al., 2019; Vial, 2019).

The identification of digital infrastructure development as the foundational dimension indicates that technological readiness remains an important enabling condition for digital transformation. Reliable digital platforms, secure communication networks, cloud computing, and integrated information technologies provide the infrastructure required to support data integration, digital services, and evidence-based decision-making. Similar conclusions have been reported by Eom and Lee (2022), who argue that digital capabilities enhance organizational resilience and governance continuity. However, the present findings should not be interpreted as supporting technological determinism. A growing body of governance literature argues that successful digital transformation is equally influenced by leadership commitment, institutional capacity, organizational learning, and adaptive governance, particularly in resource-constrained environments where technological resources may be limited. In such contexts, organizational innovation and institutional flexibility may compensate for infrastructure limitations. The evidence synthesized in this review therefore suggests that digital infrastructure is a necessary enabling platform, but its effectiveness depends on complementary institutional and organizational capabilities.

The second strategic dimension, integrated asset information systems, highlights the importance of consolidating fragmented asset information into unified digital platforms. Consistent with reports published by the Okonkwo et al. (2023), integrated information systems improve asset visibility, facilitate real-time monitoring, strengthen maintenance planning, and support evidence-based policy formulation. Beyond improving administrative efficiency, integrated systems reduce data duplication and establish a shared information environment that enhances coordination across government agencies. These findings suggest that information integration should be viewed as a governance capability rather than solely a technological application, as its effectiveness depends on institutional coordination and standardized information management practices.

The review further identifies data governance and interoperability as a critical mechanism linking technological infrastructure with governance performance. Effective digital transformation requires not only the availability of digital technologies but also institutional arrangements that regulate data quality, ownership, security, accessibility, and inter-agency collaboration. This finding is consistent with Digital Governance Theory, which argues that public value is generated when technology is embedded within governance structures and organizational decision-making processes (Loukis, 2022). Nevertheless, some scholars argue that governance complexity and institutional fragmentation may reduce the effectiveness of interoperability initiatives despite substantial technological investment. Consequently, interoperability should be regarded as both a technical and institutional challenge requiring regulatory coordination, organizational commitment, and shared governance standards.

The findings also demonstrate that transparency enhancement mechanisms represent one of the principal governance outcomes of digital transformation. Digital dashboards, open government data initiatives, electronic reporting systems, and real-time public access to information strengthen accountability by reducing information asymmetry and enabling broader public oversight. These findings corroborate previous studies indicating that transparency improves institutional legitimacy and public trust (Cucciniello et al., 2016; Prasodjo, 2025). At the same time, transparency should not be interpreted solely as a normative objective. The reviewed evidence suggests that greater transparency contributes directly to improved managerial decision-making by increasing information availability, strengthening accountability mechanisms, and encouraging more effective asset utilization.

The fifth dimension, efficiency enhancement mechanisms, represents the operational manifestation of successful digital transformation. Across the reviewed studies, automation, predictive analytics, integrated monitoring systems, and digital workflows consistently improve organizational performance by reducing administrative complexity, accelerating decision-making,

optimizing resource allocation, and improving service delivery. These findings support the public sector performance literature, which identifies high-quality information and organizational learning as fundamental drivers of institutional effectiveness (Alqasimi et al., 2025). Importantly, the reviewed evidence indicates that efficiency should not be understood merely in terms of cost reduction; instead, it encompasses improvements in governance quality, strategic planning, organizational responsiveness, and the sustainable utilization of public assets.

A principal contribution of this study is the development of the Digital Transformation Strategy Framework for Public Asset Management Systems. Unlike many previous studies that examine digital infrastructure, transparency, governance, or organizational efficiency as separate domains, the proposed framework integrates these dimensions into a coherent governance model explaining how digital transformation contributes to transparency and efficiency through sequential and mutually reinforcing institutional processes. By combining insights from Digital Governance Theory and Institutional Theory, the framework extends existing scholarship beyond technology adoption and conceptualizes digital transformation as an institutional change process in which technological capability, organizational integration, governance arrangements, and managerial outcomes evolve together. This integrated perspective provides a more comprehensive explanation of digital transformation within public asset management than models that emphasize only technological or organizational factors in isolation.

From a practical perspective, the proposed framework provides guidance for governments and public organizations seeking to modernize public asset management systems. Rather than implementing isolated digital applications, policymakers should adopt integrated transformation strategies that simultaneously strengthen digital infrastructure, information integration, governance mechanisms, transparency, and organizational efficiency. Such an integrated approach is expected to improve accountability, support evidence-based decision-making, optimize asset utilization, and ultimately increase public value creation. The framework may therefore serve as a strategic reference for government agencies developing digital transformation roadmaps, governance reforms, and long-term public asset management policies.

Several methodological considerations should be acknowledged when interpreting the proposed framework. The framework represents a conceptual synthesis derived from systematic thematic analysis rather than an empirically validated causal model. Accordingly, the relationships among the five strategic dimensions should be interpreted as recurring conceptual patterns identified across the reviewed literature rather than statistically verified causal pathways. The thematic analysis employed predefined eligibility criteria, a structured data extraction matrix, and iterative comparison of findings to improve analytical consistency. Nevertheless, thematic categorization inevitably involves qualitative interpretation, and alternative conceptual groupings may emerge when different analytical perspectives or datasets are applied. Consequently, the framework should be regarded as a theoretically grounded model that provides a foundation for subsequent empirical validation.

This study is subject to several limitations. First, the review was limited to English-language publications indexed in selected academic databases, potentially excluding relevant evidence published in other languages or contained within grey literature. Second, publication bias may have influenced the available evidence because studies reporting successful digital transformation initiatives are generally more likely to be published than studies documenting unsuccessful implementation. Third, institutional diversity across countries implies that the applicability of the proposed framework may vary according to governance capacity, regulatory environments, and levels of digital maturity. Finally, because the framework was developed through qualitative synthesis, future research should empirically examine the relationships among the proposed dimensions using comparative case studies, Delphi methods, survey-based structural equation modeling, or longitudinal analyses across different governmental contexts. Such empirical investigations would strengthen the explanatory power, construct validity, and practical applicability of the proposed framework.

Conclusions

This study systematically synthesized the existing literature on digital transformation in public asset management by following a structured systematic literature review approach based on the PRISMA 2020 guidelines. The review identified five interrelated strategic dimensions—digital infrastructure development, integrated asset information systems, data governance and interoperability, transparency enhancement mechanisms, and efficiency enhancement mechanisms—that collectively explain how digital transformation can support more transparent, accountable, and efficient public asset management. Rather than viewing digital transformation solely as the adoption of digital technologies, the findings demonstrate that successful transformation requires the alignment of technological capabilities, organizational processes, and institutional governance arrangements.

The principal contribution of this study is the development of the Digital Transformation Strategy Framework for Public Asset Management Systems. Unlike conventional e-government maturity models that primarily describe stages of digital service development, and unlike technology adoption perspectives that focus predominantly on organizational acceptance of digital innovations, the proposed framework integrates technological, organizational, and governance dimensions into a single conceptual structure specifically designed for public asset management. Consequently, the framework should be interpreted as a conceptual synthesis of the existing evidence rather than an empirically validated causal model. Its primary value lies in providing an integrated perspective that can guide future theory development, empirical investigation, and policy formulation.

From a practical perspective, the proposed framework offers a strategic reference for governments and public organizations seeking to design comprehensive digital transformation initiatives that strengthen transparency, improve information integration, enhance accountability, optimize asset utilization, and support evidence-based decision-making. By emphasizing the interdependence among digital infrastructure, information systems, governance mechanisms, and organizational performance, the framework provides a holistic foundation for improving public asset governance.

This study is subject to several limitations. As a systematic literature review, the framework was developed through qualitative synthesis of published studies and therefore reflects the scope of the selected databases, English-language publications, and predefined eligibility criteria. Consequently, the identified relationships represent recurring patterns reported in the literature rather than empirically verified causal relationships. Future research should empirically evaluate the proposed framework using comparative case studies, Delphi techniques, survey-based structural equation modeling, or longitudinal investigations across different institutional contexts. Such studies are expected to assess the distinctiveness of the five strategic dimensions, examine their interrelationships, and refine the framework under different governance environments.

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