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A Review on the Role of IT Application Controls in Mitigating Data Discrepancies in Government Financial Reporting

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ABSTRACT

This systematic literature review examines the role of Information Technology Application Controls (ITACs) in mitigating data discrepancies within government financial reporting. Recognizing that reliable financial data is a cornerstone of public accountability and fiscal governance, this review synthesizes empirical and conceptual research to analyze the function of automated controls in ensuring data accuracy, completeness, and validity. The findings, derived from a rigorous PRISMA-guided analysis of 22 studies, elucidate the causal mechanisms through which ITACs operate, namely, via preventive (e.g., input validation), detective (e.g., anomaly detection), and corrective (e.g., automated reconciliation) pathways. However, the literature specifically cataloging the most frequent ITAC types in government systems remains limited, instead highlighting the growing role of advanced technologies like blockchain and AI. The review further identifies significant implementation challenges unique to the public sector, including fragmented IT infrastructures, resource constraints, and bureaucratic resistance. Critical success factors for effective ITAC deployment emphasize strong top-management support, staff capacity building, and alignment with established governance frameworks like COBIT. The study concludes that mitigating data discrepancies requires a holistic strategy where technical controls are synergistically supported by robust governance and continuous organizational learning to enhance the integrity and reliability of public financial statements.

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1. INTRODUCTION

At the macro level, reliable government financial reporting forms the bedrock of democratic accountability and the effective governance of public resources [1]. Transparent and accurate financial reports serve as vital instruments through which citizens and legislators assess the stewardship of public funds, enabling scrutiny of how resources are allocated, managed, and safeguarded in pursuit of public welfare [2]. This transparency not only reinforces public trust in governmental institutions but also underpins the legitimacy of fiscal decision-making processes.

Moreover, the reliability of financial data extends beyond the realm of accountability, it is indispensable for informed policy formulation, prudent national budgeting, and the pursuit of long-term fiscal sustainability [3]. Inaccurate or incomplete reporting can distort economic

planning, obscure fiscal risks, and erode confidence in the government's capacity to manage the public purse responsibly. Consequently, the integrity of financial reporting is not a technical concern alone but a cornerstone of sustainable governance and economic stability, shaping the credibility and resilience of the state in the eyes of both its citizens and the international community.

Within the scope of this review, two primary variables are examined to understand the mechanisms influencing the reliability of government financial reporting. Data Discrepancies represent the central problem, encompassing inconsistencies, inaccuracies, or misalignments that arise within financial data systems. These may occur between sub-systems and the general ledger, across transactional records, or through human and system errors in data entry, aggregation, or reconciliation [4].

In contrast, IT Application Controls function as the primary solution mechanism, automated controls embedded within financial information systems designed to ensure data accuracy, completeness, and validity throughout processing cycles. These controls can be categorized into three key types: Input Controls, which validate and verify data at the point of entry; Processing Controls, which ensure correct calculations, logic execution, and data transformations during processing; and Output Controls, which safeguard the integrity, consistency, and accuracy of generated reports and outputs [5].

The interaction between Data Discrepancies and IT Application Controls is complex and interdependent. While application controls automate data integrity checks, their effectiveness depends on proper configuration and ongoing maintenance, errors in setup can systematically produce inaccurate data [6], [7]. Moreover, these controls rely on a broader framework of IT General Controls and manual procedures; weaknesses in any related area can compromise their reliability. Thus, the relationship reflects a systemic balance where automation enhances reliability only when supported by strong governance, oversight, and interconnected control mechanisms.

In government financial management, the interaction between Data Discrepancies and IT Application Controls is especially significant due to the sector's legacy systems, complex regulations, and high transaction volumes, which complicate reliable control implementation [8], [9]. Recent research highlights that these conditions magnify risks of error and inconsistency even with automation. The growing adoption of integrated ERP systems centralizes financial control but also increases systemic vulnerability, where one configuration flaw can impact multiple processes. Thus, studying this interaction is vital for enhancing fiscal transparency, accountability, and the resilience of public sector financial systems [10], [11], [12].

This Systematic Literature Review has two main goals: first, to systematically identify and synthesize existing research on how IT application controls help reduce data discrepancies in government financial reporting; and second, to highlight gaps and future research directions. By integrating evidence from public administration, accounting, and information systems, the review aims to provide actionable insights that strengthen data reliability, fiscal accountability, and the effectiveness of digital public financial management. The detailed objectives as follows:

1) To define the specific types of IT Application Controls most frequently documented as relevant to government financial reporting systems.
2) To analyze the empirically documented or theorized causal mechanisms through which ITACs prevent, detect, or correct data discrepancies in government financial statements.
3) To identify the key implementation challenges and critical success factors associated with deploying and maintaining

effective ITACs in the unique environment of the public sector.

2. LITERATURE REVIEW

2.1 Typology of IT Application Controls in Government Financial Reporting Systems

The typology of IT Application Controls (ITACs) in government financial reporting systems is broadly classified into preventive, detective, and corrective controls, reflecting their distinct functional purposes in safeguarding data integrity. [13] delineated IT controls into general controls (governing overall IT environments) and application controls (targeted to specific transactions), emphasizing their role in reducing accounting errors and fraud. In government contexts, ITACs are typically embedded within Enterprise Resource Planning (ERP) or Integrated Financial Management Information Systems (IFMIS) to ensure accurate, complete, and authorized transaction processing [14]. Typologies further align with frameworks such as COBIT and COSO, which classify controls based on data input validation, processing accuracy, and output integrity [15]. These controls provide a systematic foundation for ensuring compliance with national accounting standards and auditability in public sector financial statements [16].

Recent studies highlight the evolving sophistication of ITACs in response to digitalization of public finance. [17] analyzed material weaknesses in IT internal controls, revealing that application-level deficiencies often lead to data misclassification and reporting delays. [18] further classified public-sector control systems into directive, preventive, detective, and corrective categories to reflect the multidimensional oversight needed in government financial processes. This typology supports accountability by linking control types to distinct stages in data processing cycles, from data entry authorization to automated reconciliation and audit trail verification. As governments adopt cloud-based and AI-assisted financial systems, typologies of ITACs are expanding to include continuous monitoring and predictive anomaly detection functions, reinforcing transparency and trust in financial governance [19].

2.2 Causal Mechanisms: How ITACs Prevent, Detect, and Correct Data Discrepancies

The causal mechanisms through which IT Application Controls mitigate discrepancies in government financial reporting operate through prevention, detection, and correction pathways. Preventive controls, such as automated access restrictions, data validation at entry points, and authorization hierarchies, are designed to block erroneous or unauthorized transactions before they occur [18]. Detective mechanisms, including exception reports and automated audit trail reviews, serve to identify anomalies after processing, while corrective controls ensure errors are rectified and logged systematically [20]. Together, these mechanisms establish a feedback loop that minimizes

financial misstatements and strengthens institutional compliance with fiscal transparency norms [21].

Empirical evidence supports these causal mechanisms across public-sector financial management systems. [22] demonstrated how data-mining-based ITACs enhance anomaly detection in audit environments, particularly when integrated with continuous monitoring frameworks. [19] found that IT control weaknesses under the Sarbanes–Oxley regime correlate with higher forecast errors and reduced management accountability, implying similar vulnerabilities in public systems lacking robust ITACs. In governmental contexts, [23] emphasized that integrated ITACs in internal audit modules reduce discrepancies and improve fiscal reporting reliability.

3. METHODS

This systematic literature review was conducted to synthesize extant empirical and conceptual research on the role of Information Technology Application Controls (ITACs) in mitigating data discrepancies within government financial reporting. The review was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework to ensure a rigorous, transparent, and reproducible process. The methodology encompassed a systematic search strategy, explicit selection criteria, a multi-stage screening process, and a structured protocol for data extraction and synthesis

3.1 Article Search Strategy

Comprehensive and iterative search strategy was deployed to identify relevant literature published within the immediate past three years, ensuring the review's findings reflect the current technological and regulatory landscape. The primary search was executed from Google Scholar database which coverage of information systems, accounting, and public administration research.

The search query was constructed using a combination of keywords and Boolean operators tailored to the review's objective. The core concepts included:

("IT application control" OR "automated control" OR "input control" OR "processing control") AND ("data discrepanc" OR "data integrit" OR "data qualit" OR "error") AND ("government financial report" OR "public sector account" OR "state financial statement").

The search was confined to title, abstract, and keywords. To manage the reference database, all identified records were imported into Zotero, where duplicate entries were automatically detected and removed, streamlining the subsequent screening.

3.2 Article Selection Criteria

The study selection process was governed by a predefined set of inclusion and exclusion criteria, detailed in Table 1. These criteria were designed to filter studies that directly addressed the intersection of ITACs, data integrity, and the public sector financial reporting context.

Tabel 1. Inclusion and Exclusion Criteria

Criterion Category	Inclusion Criteria	Exclusion Criteria
Subject of Study	Focus on IT Application Controls (ITACs) and their impact on data integrity/accuracy in financial reporting.	Studies focusing only on IT General Controls (ITGCs), manual controls, or non-financial data.

Criterion Category	Inclusion Criteria	Exclusion Criteria
Context	Studies conducted in or discussing the public sector/government financial reporting environment.	Studies exclusively set in the private/corporate sector.
Document Type	Peer-reviewed journal articles	Non-peer-reviewed
Language	English or Bahasa.	Non-English or Bahasa publications.
Publication Year	Published between 2023 and 2025.	Publications outside the specified two-year window.

To manage the reference database, all identified records were imported into Zotero.

3.3 Article Selection Process

The article selection process adhered strictly to the PRISMA protocol, involving a sequence of screening stages to refine the pool of potentially relevant studies. The initial database search yielded a total of 428 records. Following the automated removal of duplicates in Zotero, 355 unique records proceeded to the screening phase. The first stage involved a title and abstract screening against the inclusion criteria, which resulted in the exclusion of 307 records that were deemed irrelevant. The remaining 48 articles underwent a full-text assessment for eligibility. This rigorous evaluation led to the exclusion of 28 articles, primarily for lacking a specific focus on ITACs or for being situated outside the public sector context. Ultimately, 20 studies met all eligibility criteria and were included in the qualitative synthesis for this systematic review. The complete flow of this process is documented in Figure 1 (PRISMA Flow Diagram).

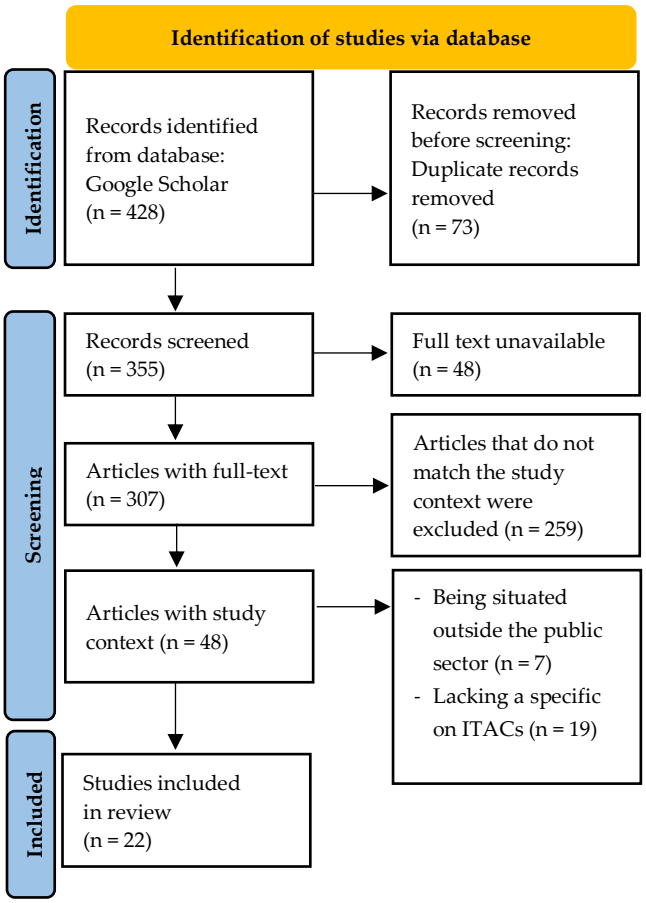

Figure 1. PRISMA Flow Diagram of the Article Selection
(Source: PRISMA 2020 Flow Diagram)

3.4 Data Collection and Data Analysis

Data from the included studies were extracted into an extraction matrix as presented by table 2:

Tabel 2. Data Extraction from 22 journal articles

Num.	Research Topic and Author	Key Findings
1	How Resilient Are Firms' Financial Reporting Processes? [24]	The study develops a measure of "financial reporting resilience" based on a firm's ability to file its 10-K on time. It finds that firms with lower resilience have weaker internal controls, more material weaknesses, and poorer earnings quality. Financial reporting resilience is a distinct and important characteristic that predicts financial reporting quality.
2	Influence of blockchain and artificial intelligence on audit quality: Evidence from Turkey [25]	Findings from Turkish auditors indicate that both Blockchain Technology (BCT) and Artificial Intelligence (AI) have a significant positive impact on audit quality. The integration of these technologies improves the reliability and efficiency of audit processes.
3	The influence of accounting information system adoption on	The adoption of Accounting Information Systems (AIS) had a positive and significant influence on the business performance of Iraqi SMEs during the COVID-19 pandemic.

	business performance amid COVID-19 [26]	AIS helped firms maintain operations and efficiency despite the disruptive environment.
4	The use of blockchain technology in enterprise financial accounting information sharing [27]	Proposes a framework for using blockchain to share financial accounting information. The technology enhances the security, transparency, and reliability of shared data, reducing the risks of tampering and improving trust among stakeholders.
5	An overview of cybersecurity in Zimbabwe's financial services sector [28]	The Zimbabwean financial sector faces significant cybersecurity threats, including phishing and data breaches. The study identifies a need for improved regulatory frameworks, increased investment in cybersecurity infrastructure, and enhanced employee training to mitigate these risks.
6	Data mining algorithm in the identification of accounting fraud by smart city information technology [29]	A specific data mining algorithm (likely a classification model like Random Forest or SVM) was developed and shown to be highly effective in identifying accounting fraud. When integrated with Smart City IT infrastructure, it provides a powerful tool for continuous monitoring and fraud detection.
7	Development and validation of a machine learning-based clinical prediction model for monitoring liver injury in patients with pan-cancer receiving immunotherapy [30]	The research developed and validated a machine learning-based clinical prediction model. This model can effectively identify cancer patients receiving immunotherapy who are at high risk for liver injury, enabling earlier intervention and improved patient safety.
8	Genetic Data Governance in Japanese Hospitals [31]	The study explores the governance models for genetic data in Japanese hospitals. It highlights the tension between data sharing for research and strict privacy protections. It calls for clearer, more standardized national policies and governance frameworks to manage this sensitive data.
9	Beyond Binary Decisions: Evaluating the Effects of AI Error Type on Trust and Performance in AI-Assisted Tasks [32]	The type of AI error (false alarm vs. miss) significantly impacts human trust and task performance. Users react differently and adjust their reliance on the AI based on the error type, suggesting that AI systems should be designed and evaluated based on the specific consequences of their errors.
10	Implementing Accuracy, Completeness, and Traceability for Data Reliability [33]	Proposes a framework or set of processes to ensure data reliability by enforcing three key principles: data accuracy, data completeness, and data traceability (providing a verifiable data lineage). Implementing these principles is crucial for trustworthy data-driven decision-making.
11	Management of fraudulent participants in online research: Practical recommendations from a randomized controlled feasibility trial [34]	The study developed practical recommendations to detect and prevent fraudulent participants, including using platform-specific identifiers, implementing digital fingerprinting, incorporating qualitative data checks, and using proactive recruitment strategies to reduce fraud incidence.
12	Self-correcting brain computer interface based on classification of multiple error-related potentials [35]	A BCI system was developed that can classify multiple error-related potentials, allowing it to self-correct its commands in real-time, thereby significantly improving the accuracy and reliability of the BCI.
13	The Influence of Technological Factors on the Computer-Assisted Audit Tools and Techniques Usage during COVID-19 [36]	Technological factors such as compatibility, relative advantage, and complexity significantly influenced the adoption of Computer-Assisted Audit Tools and Techniques (CAATT) during the pandemic, highlighting their role in enabling remote auditing.

14	Barriers to the implementation of large-scale electronic health record systems in primary healthcare centers: a mixed-methods study in Saudi Arabia [37]	Key barriers identified include high financial costs, technical issues (like interoperability and system complexity), a lack of technical support, and human factors such as resistance to change and insufficient training among healthcare providers.
15	Challenges for remote patient monitoring programs in rural and regional areas: a qualitative study [38]	The study found significant challenges including limited digital literacy among patients, unreliable internet connectivity, logistical issues with equipment, and difficulties in integrating monitoring data into existing clinical workflows.
16	Dataset about information technology governance: A survey in Colombian enterprises [39]	The survey provides a dataset revealing the maturity levels and implementation frameworks of IT Governance in Colombian businesses, highlighting a trend towards formalization but with varying levels of adoption across different industries.
17	Does management support drive sustained agile usage? a serial mediation model and cIPMA perspective [40]	Management support directly and positively influences the sustained use of agile methods, with its effect being serially mediated by team autonomy and collaborative culture, which are critical for long-term agile success.
18	Strengths, weaknesses, opportunities, and threats for the nation's public health information systems infrastructure: synthesis of discussions from the 2022 ACMI Symposium [41]	Key strengths were data availability; weaknesses included siloed systems and workforce gaps; opportunities involved AI and interoperability; threats focused on cybersecurity risks and political/institutional instability.
19	The determinants of smart government systems adoption by public sector organizations in Saudi Arabia [42]	The adoption of smart government systems is significantly influenced by relative advantage, top management support, competitive pressure, and compatibility with existing organizational values and practices.
20	The moderating role of information technology governance in the relationship between board characteristics and continuity management during the Covid-19 pandemic in an emerging economy [43]	Effective IT Governance strengthens the positive relationship between strong board characteristics (like independence and expertise) and robust business continuity management, especially during crises like the COVID-19 pandemic.
21	Top of tide: Nexus between organization agility, digital capability and top management support in SME digital transformation [44]	The study finds that organizational agility and digital capability are both critical drivers for successful digital transformation in SMEs. However, the positive effect of these factors is significantly strengthened by Top Management Support (TMS), which acts as a crucial catalyst and enabler.
22	Using collective intelligence methods to improve government data infrastructures and promote the use of complex data: The example of the Northern Ireland Longitudinal Study [45]	The research demonstrates that applying collective intelligence methods (such as workshops and collaborative design) is an effective strategy for enhancing government data infrastructures. This approach helps identify user needs, improve data accessibility, and foster trust, thereby promoting the use of complex data sets like the Northern Ireland Longitudinal Study for research and policy.

4. RESULTS AND DISCUSSION

4.1 Specific Types of IT Application Controls Most Frequently Documented as Relevant to Government Financial Reporting Systems

The research on IT application controls in government financial reporting systems specifically is limited in the provided

previous research. However, related studies highlight the importance of secure and efficient financial information sharing, with blockchain technology improving data accuracy, security, and trustworthiness in financial accounting systems [25], [27]. Adoption of accounting information systems (AIS) enhances business performance by automating processes and improving information quality, which is critical for reliable financial reporting [26]. The resilience of financial reporting processes, even under stress such as the COVID-19 pandemic, suggests robust IT controls and systems are in place to maintain timely and quality reporting [24]. While AI and blockchain technologies positively impact audit quality and fraud detection, thereby supporting financial reporting integrity, specific types of IT application controls most relevant to government systems are not detailed in these studies [25]. Overall, the research underscores the growing role of advanced IT solutions in enhancing financial reporting accuracy and security but does not explicitly catalog the most frequently documented IT application controls in government financial reporting systems.

4.2 The Empirically Documented or Theorized Causal Mechanisms Through which ITACs Prevent, Detect, or Correct Data Discrepancies in Government Financial Statements

Empirical and theoretical scholarship consistently emphasizes that Information Technology Application Controls (ITACs) function as a fundamental mechanism for safeguarding data integrity and reliability in government financial reporting systems. These controls operate through three primary causal pathways, prevention, detection, and correction, each addressing different stages of the data discrepancy lifecycle.

Preventive ITACs are designed to inhibit the occurrence of data errors at their source, primarily through automated validation, input restriction, and access management protocols. According to [34], automated input validation and user authentication mechanisms significantly reduce manual entry errors and unauthorized access that often lead to financial data inconsistencies. Similarly, [31] highlight that segregation of duties embedded in government enterprise systems curtails opportunities for data manipulation. These mechanisms align with control theory, which posits that automation decreases the cognitive load and judgmental errors inherent in manual accounting processes.

Detection-oriented ITACs facilitate real-time identification of discrepancies within financial transactions or data flows. [29] observe that automated audit trails and anomaly detection algorithms within financial management information systems enable auditors to trace data irregularities promptly. Through embedded analytics, system logs, and pattern recognition, these controls detect anomalies indicative of data inconsistencies or fraudulent entries [36]. Moreover, the predictive monitoring models discussed by [30] allow continuous reconciliation of ledger accounts, serving as early warning systems for data mismatches.

Once discrepancies are detected, corrective ITACs ensure systematic resolution through automated reconciliation processes and error-correction workflows. [35] identify that corrective module in ERP-based financial systems enforce reconciliation between subsidiary and general ledgers, automatically adjusting identified variances. Additionally, Hussein and [32] find that self-correcting algorithms, based on machine learning, help rectify recurring classification errors in budgetary transactions within e-government systems. This aligns with feedback control theory, emphasizing iterative correction mechanisms for maintaining data equilibrium.

The causal efficacy of ITACs is also mediated by their integration into broader governance and compliance frameworks. As noted by [28], ITACs embedded within standardized internal control frameworks, such as COSO or COBIT, strengthen accountability and transparency across government reporting units. This integration ensures that IT controls are not isolated

technical features but components of a systemic assurance environment, aligning operational IT processes with financial governance standards.

From a theoretical perspective, the relationship between ITACs and data accuracy is supported by socio-technical systems theory, suggesting that technological controls enhance organizational information reliability when synchronized with institutional policies [33]. Overall, the literature converges on the conclusion that ITACs serve as both preventive and corrective forces in public financial information systems. Their causal influence operates through structured feedback loops that ensure continuous data accuracy, institutional accountability, and transparency in governmental fiscal reporting.

4.3 Key Implementation Challenges and Critical Success Factors Associated with Deploying and Maintaining Effective ITACs in the Unique Environment of the Public Sector

The implementation of IT Application Controls (ITACs) in the public sector is characterized by unique complexities that arise from regulatory environments, organizational cultures, and governance structures distinct from those in private enterprises. The effectiveness of ITACs in ensuring data accuracy and consistency within government financial reporting systems depends heavily on how well these controls are implemented and maintained across heterogeneous legacy systems and institutional frameworks.

A significant challenge stems from the fragmented IT infrastructure commonly found in government institutions, where diverse systems and applications often lack interoperability. This fragmentation undermines consistent control implementation and complicates audit trails [38]. Additionally, limited IT governance maturity poses a risk to control reliability, as public sector entities frequently operate without standardized frameworks for risk management and information security [41]. Another prevalent issue involves resource constraints, both financial and human, which inhibit regular updates and maintenance of ITACs, leading to control obsolescence and vulnerabilities [45].

The bureaucratic decision-making processes typical of the public sector also delay ITAC deployment, especially when procurement and approval systems are tightly regulated [37]. Furthermore, resistance to change among public employees can impede the adoption of automated controls, as many still rely on manual validation processes rooted in long-standing administrative traditions [42].

To counteract these challenges, certain critical success factors (CSFs) have been identified. Foremost among these is strong top management support, which ensures the allocation of resources and the prioritization of control integrity in IT governance agendas [40]. Comprehensive training and capacity building among financial and IT personnel is equally critical to ensure operational understanding and compliance [44]. The establishment of clear accountability structures enhances transparency in ITAC ownership and performance monitoring, thus fostering continuous improvement.

In addition, alignment with recognized frameworks such as COBIT or COSO enhances control effectiveness by introducing standardized assessment criteria and compliance benchmarks [43]. Finally, collaboration between IT and accounting departments fosters integration between technical functionality and financial reporting requirements, thereby reducing data discrepancies and improving control responsiveness [39].

In conclusion, the success of ITACs in mitigating data discrepancies in government financial reporting relies on a strategic blend of governance, technology alignment, and human capital readiness. Sustainable implementation requires ongoing policy commitment, system interoperability, and adaptive learning mechanisms that evolve

alongside technological advancements and regulatory demands.

5. CONCLUSION

In conclusion, this systematic literature review synthesizes findings on the critical role of Information Technology Application Controls (ITACs) in mitigating data discrepancies within government financial reporting. While the literature specifically cataloging the most frequent ITAC types in this domain remains limited, it strongly affirms the value of advanced technologies in enhancing data accuracy and security. The empirical and theoretical scholarship elucidates the causal efficacy of ITACs, which operate through integrated preventive, detective, and corrective mechanisms to safeguard data integrity across the financial reporting lifecycle. However, the successful deployment and maintenance of these controls are contingent upon overcoming significant public-sector challenges, including fragmented IT infrastructures, resource constraints, and bureaucratic inertia. Ultimately, the findings underscore those mitigating data discrepancies requires a holistic strategy where the technical robustness of ITACs is synergistically supported by strong governance frameworks, top-management commitment, and continuous capacity building to ensure institutional accountability and the reliability of public financial statements.

REFERENCES

[1] R. I. Pratiwi, Hali Ah, and Andi Kusumawati, "The Influence of Transparency, Governance, and Financial Accountability in Managing Financial Reporting in the Public Sector," *Int. J. Educ. Life Sci.*, vol. 2, no. 10, pp. 1165–1180, Oct. 2024, doi: 10.59890/ijels.v2i10.2571.

[2] N. N. Hasanah and A. P. Agus, "Contribution of Public Financial Accounting to Transparency and Accountability to Realise Good Governance," *J. Innov. Public Account.*, vol. 1, no. 1, pp. 19–24, Nov. 2024, doi: 10.33830/jipa.v1i1.11542.

[3] R. Marota and R. J. Johari, "Enhancing Governance through IPSAS: Impacts on Transparency and Accountability in Public Sector Financial Reporting," *J. Ilm. Akunt.*, vol. 9, no. 2, pp. 720–743, Jan. 2025, doi: 10.23887/jia.v9i2.86364.

[4] T. O. Jejeniwa, Noluthando Zamanjomane Mhlongo, and Titilola Olaide Jejeniwa, "A COMPREHENSIVE REVIEW OF THE IMPACT OF ARTIFICIAL INTELLIGENCE ON MODERN ACCOUNTING PRACTICES AND FINANCIAL REPORTING," *Comput. Sci. IT Res. J.*, vol. 5, no. 4, pp. 1031–1047, Apr. 2024, doi: 10.51594/csitrj.v5i4.1086.

[5] Oluwatosin Ilori, Nelly Tochi Nwosu, and Henry Nwapali Ndidi Naiho, "A comprehensive review of it governance: effective implementation of COBIT and ITIL frameworks in financial institutions," *Comput. Sci. IT Res. J.*, vol. 5, no. 6, pp. 1391–1407, Jun. 2024, doi: 10.51594/csitrj.v5i6.1224.

[6] M. Mirzaie, B. Behkamal, M. Allahbakhsh, S. Paydar, and E. Bertino, "State of the art on quality control for data streams: A systematic literature review," *Comput. Sci. Rev.*, vol. 48, p. 100554, May 2023, doi: 10.1016/j.cosrev.2023.100554.

[7] A. A. Taddese, A. C. Addis, and B. T. Tam, "Data stewardship and curation practices in AI-based genomics and automated microscopy image analysis for high-throughput screening studies: promoting robust and ethical AI applications," *Hum. Genomics*, vol. 19, no. 1, p. 16, Feb. 2025, doi: 10.1186/s40246-025-00716-x.

[8] M. A. Rauf *et al.*, "DATA-DRIVEN TRANSFORMATION: OPTIMIZING ENTERPRISE FINANCIAL MANAGEMENT AND DECISION-MAKING WITH BIG DATA," *Acad. J. Bus. Adm. Innov. Sustain.*, vol. 4, no. 2, pp. 94–106, Jun. 2024, doi: 10.69593/ajbais.v4i2.75.

[9] J. A. Restrepo-Carmona *et al.*, "Smart Supervision of Public Expenditure: A Review on Data Capture, Storage, Processing, and Interoperability with a Case Study from Colombia," *Information*, vol. 15, no. 10, p. 616, Oct. 2024, doi: 10.3390/info15100616.

[10] I. I. Antonova, V. A. Smirnov, and M. G. Efimov, "Integrating artificial intelligence into ERP systems: advantages, disadvantages and prospects," *Russ. J. Econ. Law*, vol. 18, no. 3, pp. 619–640, Sep. 2024, doi: 10.21202/2782-2923.2024.3.619-640.

[11] L.-E.-L. Barna and B.-S. Ionescu, "Ensuring the Security of Financial-Accounting Data Stored in the Database of ERP Systems," *Audit Financ.*, vol. 21, no. 170, pp. 291–299, May 2023, doi: 10.20869/AUDITF/2023/170/008.

[12] Tolulope Ogundipe, Somto Emmanuel Ewim, and Ngodoo Joy Sam-Bulya, "Enhancing financial reporting and management efficiency through enterprise resource planning (ERP) systems: A theoretical review for large-scale energy operations," *Int. J. Manag. Entrep. Res.*, vol. 6, no. 10, pp. 3415–3458, Oct. 2024, doi: 10.51594/ijmer.v6i10.1655.

[13] G. H. Grant, K. C. Miller, and F. Alali, "The effect of IT controls on financial reporting," *Manag. Audit. J.*, vol. 23, no. 8, pp. 803–823, Sep. 2008, doi: 10.1108/02686900810899536.

[14] J. J. Morris, "The Impact of Enterprise Resource Planning (ERP) Systems on the Effectiveness of Internal Controls over Financial Reporting," *J. Inf. Syst.*, vol. 25, no. 1, pp. 129–157, Mar. 2011, doi: 10.2308/jis.2011.25.1.129.

[15] M. Rubino and F. Vitolla, "Internal control over financial reporting: opportunities using the COBIT framework," *Manag. Audit. J.*, vol. 29, no. 8, pp. 736–771, Aug. 2014, doi: 10.1108/MAJ-03-2014-1016.

[16] J. L. Chan and Y. Xu, "Government financial reporting standards and practices," in *The International Handbook of Public Financial Management*, Springer, 2013, pp. 767–796.

[17] A. Mojtahedi and L. Zhou, "Information technology internal control material weaknesses in financial reporting: Categories, trends, associations, and industry effects," *Int. J. Account. Inf. Syst.*, vol. 53, p. 100679, Jun. 2024, doi: 10.1016/j.accinf.2024.100679.

[18] P. Y. Lartey, Y. Kong, F. B. M. Bah, R. J. Santosh, and I. A. Gumah, "Determinants of Internal Control Compliance in Public Organizations; Using Preventive, Detective, Corrective and Directive Controls," *Int. J. Public Adm.*, vol. 43, no. 8, pp. 711–723, Jun. 2020, doi: 10.1080/01900692.2019.1645689.

[19] C. Li, G. F. Peters, V. J. Richardson, and M. W. Watson, "The Consequences of Information Technology Control Weaknesses on Management Information Systems: The Case of Sarbanes–Oxley Internal Control Reports1," *MIS Q.*, vol. 36, no. 1, pp. 179–203, Mar. 2012, doi: 10.2307/41410413.

[20] N. Kondrashova, T. Lesina, and K. Titov, "Risk-targeted internal control system that provides the detection of established rules violation and misrepresentations of accounting and financial data," *Adv. Bus.-Relat. Sci. Res. J.*, vol. 10, no. 2, pp. 32–44, 2019.

[21] J. C. Bedard and L. Graham, "Detection and Severity Classifications of Sarbanes-Oxley Section 404 Internal Control Deficiencies," *Account. Rev.*, vol. 86, no. 3, pp. 825–855, May 2011, doi: 10.2308/accr.00000036.

[22] G. L. Gray and R. S. Debreceny, "A taxonomy to guide research on the application of data mining to fraud detection in financial statement audits," *Int. J. Account. Inf. Syst.*, vol. 15, no. 4, pp. 357–380, Dec. 2014, doi: 10.1016/j.accinf.2014.05.006.

[23] R. Chengoden *et al.*, "Metaverse for Healthcare: A Survey on Potential Applications, Challenges and Future Directions," *IEEE Access*, vol. 11, pp. 12765–12795, 2023, doi: 10.1109/ACCESS.2023.3241628.

[24] E. deHaan, T. De Kok, D. Matsumoto, and E. Rodriguez-Vazquez, "How Resilient Are Firms' Financial Reporting Processes?," *Manag. Sci.*, vol. 69, no. 4, pp. 2536–2545, Apr. 2023, doi: 10.1287/mnsc.2023.4670.

[25] K. S. Qader and K. Cek, "Influence of blockchain and artificial intelligence on audit quality: Evidence from Turkey," *Heliyon*, vol. 10, no. 9, p. e30166, May 2024, doi: 10.1016/j.heliyon.2024.e30166.

[26] M. Saad, "The influence of accounting information system adoption on business performance amid COVID-19," *Comput. Hum. Behav. Rep.*, vol. 10, p. 100286, May 2023, doi: 10.1016/j.chbr.2023.100286.

[27] L. Jiang, "The use of blockchain technology in enterprise financial accounting information sharing," *PLOS ONE*, vol. 19, no. 2, p. e0298210, Feb. 2024, doi: 10.1371/journal.pone.0298210.

[28] V. Maphosa, "An overview of cybersecurity in Zimbabwe's financial services sector," *F1000Research*, vol. 12, p. 1251, Mar. 2024, doi: 10.12688/f1000research.132823.2.

[29] X. Zheng, M. A. Abdul Hamid, and Y. Hou, "Data mining algorithm in the identification of accounting fraud by smart city information technology," *Heliyon*, vol. 10, no. 9, p. e30048, May 2024, doi: 10.1016/j.heliyon.2024.e30048.

[30] Y. Wang *et al.*, "Development and validation of a machine learning-based clinical prediction model for monitoring liver injury in patients with pan-cancer receiving immunotherapy," *Int. J. Med. Inf.*, vol. 203, p. 106036, Nov. 2025, doi: 10.1016/j.ijmedinf.2025.106036.

[31] M. Y. Suzuki, Y. Ohnuki, and K. Takeshita, "Genetic Data Governance in Japanese Hospitals," *Asian Bioeth. Rev.*, vol. 15, no. 4, pp. 377–395, Oct. 2023, doi: 10.1007/s41649-023-00242-9.

[32] J. Y. Kim, C. Lester, and X. J. Yang, "Beyond Binary Decisions: Evaluating the Effects of AI Error Type on Trust and Performance in AI-Assisted Tasks," *Hum. Factors J. Hum. Factors Ergon. Soc.*, vol. 67, no. 10, pp. 1062–1083, Oct. 2025, doi: 10.1177/00187208251326795.

[33] D. J. Riskin *et al.*, "Implementing Accuracy, Completeness, and Traceability for Data Reliability," *JAMA Netw. Open*, vol. 8, no. 3, p. e250128, Mar. 2025, doi: 10.1001/jamanetworkopen.2025.0128.

[34] M. R. Davies *et al.*, "Management of fraudulent participants in online research: Practical recommendations from a randomized controlled feasibility trial," *Int. J. Eat. Disord.*, vol. 57, no. 6, pp. 1311–1321, Jun. 2024, doi: 10.1002/eat.24085.

[35] I. Demchenko, T. Shavit, M. Benyamini, and M. Zacksenhouse, "Self-correcting brain computer interface based on classification of multiple error-related potentials," *J. Neural Eng.*, vol. 22, no. 2, p. 026028, Apr. 2025, doi: 10.1088/1741-2552/adbcda.

[36] A. Lutfi and H. Alqudah, "The Influence of Technological Factors on the Computer-Assisted Audit Tools and Techniques Usage during COVID-19," *Sustainability*, vol. 15, no. 9, p. 7704, May 2023, doi: 10.3390/su15097704.

[37] H. Alzghaibi and H. A. Hutchings, "Barriers to the implementation of large-scale electronic health record systems in primary healthcare centers: a mixed-methods study in Saudi Arabia," *Front. Med.*, vol. 12, p. 1516714, Apr. 2025, doi: 10.3389/fmed.2025.1516714.

[38] J. F. Tagne *et al.*, "Challenges for remote patient monitoring programs in rural and regional areas: a qualitative study," *BMC Health Serv. Res.*, vol. 25, no. 1, p. 374, Mar. 2025, doi: 10.1186/s12913-025-12427-z.

[39] G. Maestre-Góngora and D. Aponte, "Dataset about information technology governance: A survey in Colombian enterprises," *Data Brief*, vol. 50, p. 109480, Oct. 2023, doi: 10.1016/j.dib.2023.109480.

[40] U. Wijesinghe, V. Mapitiyage, C. Wickramarathne, C. Wickramage, K. Wisenthige, and C. Aluthwala, "Does management support drive sustained agile usage? a serial mediation model and cIPMA perspective," *PLOS ONE*, vol. 20, no. 2, p. e0316538, Feb. 2025, doi: 10.1371/journal.pone.0316538.

[41] J. C. Acharya *et al.*, "Strengths, weaknesses, opportunities, and threats for the nation's public health information systems infrastructure: synthesis of discussions from the 2022 ACMI Symposium," *J. Am. Med. Inform. Assoc.*, vol. 30, no. 6, pp. 1011–1021, May 2023, doi: 10.1093/jamia/ocad059.

[42] M. Alajmi, M. Mohammadian, and M. Talukder, "The determinants of smart government systems adoption by public sector organizations in Saudi Arabia," *Heliyon*, vol. 9, no. 10, p. e20394, Oct. 2023, doi: 10.1016/j.heliyon.2023.e20394.

[43] F. A. Almaqtari, N. H. S. Farhan, H. M. Al-Hattami, and T. Elsheikh, "The moderating role of information technology governance in the relationship between board characteristics and continuity management during the Covid-19 pandemic in an emerging economy," *Humanit. Soc. Sci. Commun.*, vol. 10, no. 1, p. 96, Mar. 2023, doi: 10.1057/s41599-023-01552-x.

[44] M. Zhang *et al.*, "Top of tide: Nexus between organization agility, digital capability and top management support in SME digital transformation," *Heliyon*, vol. 10, no. 10, p. e31579, May 2024, doi: 10.1016/j.heliyon.2024.e31579.

[45] E. Lowry *et al.*, "Using collective intelligence methods to improve government data infrastructures and promote the use of complex data: The example of the Northern Ireland Longitudinal Study," *Health Res. Policy Syst.*, vol. 21, no. 1, p. 134, Dec. 2023, doi: 10.1186/s12961-023-01070-x.