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ACCOUNTING INFORMATION SYSTEMS, INTERNAL CONTROL MECHANISMS AND PERFORMANCE OF GOVERNMENT AGENCIES IN KWARA STATE, NIGERIA

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Abstract

Over the years, government agencies in Nigeria have struggled with implementing Accounting Information Systems (AIS) and Internal Control Mechanisms (INTCON) due to technological limitations, inadequate staff training, resistance to change, and insufficient funding. These challenges hinder accurate reporting, accountability, and efficiency, crucial for optimal performance and service delivery. Given this, the study investigates how AIS and INTCON can enhance the overall performance of these agencies. A cross-sectional survey research design and quantitative paradigm were adopted, targeting stakeholders from 20 ministries. A purposive sample of 250 staff from various ministries in Kwara State, Nigeria, was surveyed using a structured questionnaire. The study used Partial Least Squares Structural Equation Modeling for data analysis. Findings revealed significant positive relationships between AIS and INTCON with performance, supported by coefficients of 0.329 and 0.402, and p-values of 0.000 at a 5% significance level. The study concludes that the strategic use of AIS and INTCON can enhance organizational performance. It recommends that government agencies in Nigeria prioritize investments in AIS and INTCON to improve performance. By enhancing the quality and effectiveness of their accounting information systems, organizations can ensure more accurate financial reporting and better decision-making processes. Similarly, strengthening internal control mechanisms can help organizations mitigate risks, prevent fraud, and improve operational efficiency.

Keywords: Accounting Information System, Internal Control Mechanisms, Performance, Government Agencies

JEL Classification Code: M4, G2, L2, K4

1. Introduction

The performance of government agencies is crucial for effective public service delivery, varying significantly across regions. Advanced countries exhibit high performance due to strong institutions, skilled workforce, advanced technology, and robust accountability mechanisms (Li, et al., 2023). Emerging economies, including those in Africa, face challenges like weak institutions, limited resources, capacity gaps, and accountability issues, leading to mixed performance (Appiah et al., 2022). However, African governments are striving to improve by adopting Accounting Information Systems (AIS) and strengthening internal controls (Mahama & Dahlan, 2021). In Nigeria, particularly in Kwara State, government agencies play a vital role in economic development and public service provision, yet their effectiveness is hampered by inadequate resources, corruption, poor management practices, and lack of accountability (Kamaluddeen, 2020). Inefficient financial management systems and weak internal controls further exacerbate these issues, resulting in suboptimal service delivery and eroding public trust (Mmarry, 2023).

Developed countries have widely adopted AIS to enhance financial management, decision-making, and service delivery, leading to improved financial reporting, increased efficiency, and public trust. Developing countries are also adopting AIS, but face challenges such as limited resources, technical expertise, and infrastructure (Al-Hattami, 2022). Nonetheless, AIS can significantly improve financial management and service delivery in these regions (Ahmad et al., 2024). Strong internal control systems in developed countries, adhering to international frameworks and independent oversight, reduce fraud and enhance efficiency (Hamed, 2023). In Nigeria, ongoing efforts to improve government performance include policy reforms, institutional strengthening, capacity building, and technology adoption (Shenkoya, 2023). In Kwara State, initiatives to adopt AIS and strengthen internal controls aim to enhance financial management, reduce fraud, and improve service delivery for its citizens, ultimately contributing to socio-economic development and public trust (Adewole, 2022).

The performance of government agencies in Nigeria has been a subject of concern due to several challenges that impede their effectiveness and efficiency. One fundamental issue is the pervasive lack of accountability and transparency within these agencies (Abubakar et al., 2022). Corruption and bureaucratic inefficiencies often lead to the mismanagement of public resources, resulting in subpar service delivery and diminished public trust (Wrage & Birenbaum, 2024). Additionally, inadequate funding and resources hinder the capacity of these agencies to execute their mandates effectively. The inability to adopt modern technological solutions and practices further exacerbates these challenges, limiting the agencies' ability to adapt to contemporary governance and service delivery standards (Amoah et al., 2023).

In the realm of accounting information systems (AIS) in Nigeria, the challenges are multifaceted and deeply rooted in both systemic and operational deficiencies. Many organizations, particularly in the public sector, grapple with outdated or poorly implemented AIS. This results in inaccurate financial reporting, difficulties in tracking financial transactions, and overall inefficiencies in financial management (Bandy, 2023). Mnyakin (2023) argued that the lack of skilled personnel to manage and operate these systems further compounds the problem, leading to errors and discrepancies in financial data. Moreover, resistance to change and the slow pace of technological adoption in some sectors undermine efforts to modernize accounting practices and enhance financial transparency (Abad-Segura, 2023)

Internal control mechanisms in Nigeria face significant obstacles that compromise their effectiveness in ensuring sound financial management and preventing fraud (Ugwu & Ochuba, 2021). Many organizations lack comprehensive and robust internal control frameworks, leading to vulnerabilities in their financial processes (Gurgu et al, 2022). The enforcement of existing internal control policies is often weak, with insufficient oversight and monitoring. This creates opportunities for fraudulent activities and financial mismanagement. Additionally, there is a general lack of awareness and understanding of the importance of internal controls among employees and management, which hinders the development and implementation of effective control measures (Gołębiowska et al., 2022).

Combining the challenges faced by government agencies, accounting information systems, and internal control mechanisms presents a complex landscape for financial and operational governance in Nigeria. Therefore, the objectives of this study are to investigate the impacts of accounting information systems and internal control mechanisms on the performance of government agencies in Kwara State, Nigeria.

2. Literature Review

2.1 Conceptual Issues

Accounting Information System

An Accounting Information System (AIS) is a structured mechanism that collects, stores, processes, and manages financial and accounting data used by decision-makers within an organization (Baraka, 2023). It typically uses technology to facilitate the recording, classification, summarization, and reporting of financial transactions (Sunarta & Astuti, 2023). An AIS integrates software, databases, hardware, procedures, and personnel to ensure accurate and timely financial information (Assyarofi & Ifada, 2024). Effective AIS supports decision-making, enhances financial control, and ensures regulatory compliance, contributing to overall organizational efficiency (Jarah & Al-Jarrah, 2022).

In government agencies, AIS provides a framework for managing public funds, improving service delivery, and enhancing accountability (Tahiru, 2020; Laourou, 2022). It includes components like financial accounting, budgetary control, asset management, procurement, and payroll systems, ensuring accurate financial reporting, regulatory compliance, and internal control adherence. AIS also supports data analysis and decision-making, helping track performance and allocate resources efficiently (Efuntade et al., 2023).

Internal Controls

Internal controls are systematic measures and procedures designed to safeguard assets, ensure financial reporting accuracy, promote operational efficiency, and ensure compliance with laws and regulations (Aye, 2023). These controls include activities and policies to prevent and detect errors, fraud, and irregularities, thus protecting the integrity of financial and operational processes (Keaunui, 2023). They are crucial for the smooth operation and accountability of any organization, whether private or public, encompassing policies, procedures, and activities to mitigate risks, safeguard assets, and promote efficient and ethical operations (Haro, 2023). Internal controls are broadly categorized into five components: control environment, risk assessment, control activities, information and communication, and monitoring activities. Each plays a distinct role in achieving internal control objectives (Keya, 2023). In government agencies, internal controls are particularly significant due to public trust and vast resources. Effective controls ensure transparency, accountability, and regulatory compliance, preventing fraud, waste, and abuse of public funds while promoting efficient service delivery (Gołębiowska et al., 2022). These frameworks often align with standards like COSO, tailored to public sector risks and challenges. Robust internal controls help build public trust and ensure the responsible use of resources, effectively serving the community's needs (Gołębiowska et al., 2022).

Performance

Performance is the execution and achievement of tasks, goals, or activities by an individual, group, or organization (Segreti, 2022). It encompasses the efficiency and effectiveness with which resources are used to achieve desired outcomes (Silva et al., 2023).

Performance can be measured using various metrics, such as productivity, quality, speed, and cost-effectiveness, helping assess goal attainment and identify areas for improvement. High performance indicates optimal resource use and timely, cost-effective goal achievement (Tambare et al., 2021).

For government agencies, performance specifically relates to how well these public sector entities fulfill their mandates and deliver services (Thomas et al., 2022). It involves evaluating the effectiveness, efficiency, accountability, and transparency of these agencies in meeting their objectives and serving citizens' needs (Tambare et al., 2021). Performance metrics for government agencies might include service delivery times, budget utilization, regulatory compliance, and stakeholder satisfaction. Effective performance in government agencies is crucial for public trust, quality public services, policy implementation, and overall governance (Likangaga et al., 2023).

2.2 Empirical Review

Several studies demonstrate the positive influence of accounting information systems (AIS) on organizational performance. Al-Delawi and Ramo (2020) found a significant positive relationship between AIS and management performance in Iraq's petroleum industry. Similarly, Kareem et al. (2021) showed that AIS, combined with Knowledge Management Capabilities, significantly enhanced the performance of Iraqi SMEs. Al-Okaily (2024) extended this understanding by confirming that AIS positively influenced organizational performance during the COVID-19 pandemic in Jordan, highlighting the importance of information quality, process quality, and service quality. Meanwhile, Al-Attar (2021) highlighted the significant impact of the accounting information system (AIS) on corporate governance within Jordan's pharmaceutical industry, emphasizing the role of AIS in enhancing control, commitment to accounting standards, performance evaluation, and credibility.

AIS and Performance, several studies explored the relationship between accounting information systems (AIS), internal control, and employee performance. Maharani and Damayanthi (2020) and Sagala (2020) found that both AIS and internal control positively influenced employee performance, with organizational culture serving as a mediating variable in the former. Alawaqleh (2021) further confirmed that internal control had a strong positive relationship with AIS and employee performance in Jordan’s industrial SMEs. Similarly, accounting information system (AIS) also significantly impacts financial performance and decision-making. Hutahayan (2020) and Al-Waeli et al. (2020) demonstrated that AIS positively affected financial performance, with internal controls acting as a mediator in the latter study. Onaolapo and Olanrewaju (2024) and Ojomo and Falade (2022) corroborated these findings in the context of Nigerian financial institutions, showing a positive impact of AIS on financial performance metrics such as net profit, return on assets, and working capital.

Some studies narrowed their study on accounting information systems (AIS) in SMEs and Rural Banks. Studies by Asmuni (2020) and Sunarta and Astuti (2023) examined AIS in the context of SMEs and rural banks. Asmuni (2020) found that user ability, business relationship support, and IT capabilities positively influenced the successful implementation of AIS in SMEs. Sunarta and Astuti (2023) indicated that AIS quality positively influenced accounting information quality and

organizational performance in rural banks, with accounting information quality acting as a partial mediator. In a different perspective, Setyani et al. (2022) explored the role of accounting information systems (AIS) in government agencies, finding that while AIS did not directly affect performance, it significantly influenced budget decision-making, which in turn positively impacted performance. The study underscored the indirect role of AIS in enhancing organizational performance through improved decision-making processes. Some studies centered on accounting information systems (AIS) and financial performance in various Industries, Khalid and Kot (2021) in Thailand and Jalloul et al. (2022) in Lebanon provided evidence of AIS's impact on financial performance in the banking sector. They found that AIS positively influenced performance metrics such as return on equity and bank efficiency. However, they also noted negative correlations between AIS aspects like data quality and performance in some contexts, suggesting the need for high-quality AIS implementation.

The reviewed literature highlights the significant role of accounting information systems (AIS) in enhancing organizational performance across various sectors globally. Studies in developed and developing countries (e.g., Al-Delawi & Ramo, 2020; Al-Okaily, 2024; Khalid & Kot, 2021) have examined AIS's impact on performance in diverse industries like petroleum, banking, SMEs, pharmaceuticals, and food manufacturing. However, few studies (e.g., Al-Waeli et al., 2020; Maharani & Damayanthi, 2020) have integrated the relationship between AIS and internal controls, especially concerning organizational performance, without focusing on government performance. Limited research in Nigeria (e.g., Ojomo & Falade, 2022; Onaolapo & Olanrewaju, 2024) addresses AIS and financial performance in Nigerian Deposit Money Banks and insurance companies. There is a notable gap in understanding AIS's impact on public sector agencies, specifically regarding performance metrics influenced by AIS and internal controls. This study aims to fill these gaps by examining the combined impact of AIS and internal control mechanisms on the performance of government agencies in Kwara State, Nigeria.

3. Methodology

The study employed a cross-sectional survey research design and a quantitative paradigm to examine the impact of accounting information systems and internal control mechanisms on the performance of government agencies in Kwara State. The population comprised staff from 20 ministries in Kwara State, with a purposive sampling method used to select 3 accounting officers, 3 finance officers, 3 IT personnel, and 3 auditors from the State Audit Office across each ministry, ensuring proportional representation to avoid bias. This method was chosen to capture diverse perspectives and provide comprehensive insights into the effectiveness of accounting systems and controls. The total sample size for the study was 240 respondents. Data were collected through questionnaires using a Likert scale ranging from "strongly agree" to "strongly disagree." The reliability and validity of the instrument were assessed, and both descriptive and inferential statistics were conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM).

3.1 Model Specification

This study adopted and adapted the linear regression model from Jarrah and Al-Jarrah (2022), who examined the role of accounting information systems

(AIS) in enhancing performance efficiency in Jordanian companies. Their model is stated as:

$PE = \beta_o + \beta_1 AIS_1 + \varepsilon\ldots$ (1)

Where PE represents Performance Efficiency, AIS denotes the Accounting Information System, ε is the error term, and β signifies the coefficient. To align with the objectives and hypotheses of this study, the model in equation (1) was modified. The model for this study is therefore stated as:

$PF = \beta_o + \beta_1 AIS_1 + \beta_2 INTCON_2 + \varepsilon\ldots\ldots(2)$

Where PF represents Performance, AIS denotes the Accounting Information System, INTCON signifies Internal Control Mechanisms.

4. Result and Discussion

4.1Descriptive Statistics

Table 1: Descriptive Statistics

Name	Items	Mean	Standard deviation	Excess kurtosis	Skewness
AIS1	A government entity's accounting information system accurately records financial transactions.	4.260	0.564	-0.410	-0.030
AIS2	The AIS used in government agencies is user-friendly and easy to navigate.	3.740	0.649	-0.705	0.322
AIS3	The AIS provides timely and relevant financial information for decision-making.	3.521	0.629	-0.196	-0.207
AIS4	Our AIS is regularly updated and maintained to ensure its effectiveness.	3.375	0.869	1.694	-1.397
AIS5	Employees are well-trained to use the AIS effectively.	3.646	0.816	0.948	-0.424
AIS6	The AIS in our organization helps in reducing errors in financial reporting.	3.667	0.943	0.596	-0.797
AIS7	Our AIS integrates well with other information systems in the organization.	3.615	1.024	0.698	-0.935
AIS8	The AIS enhances the overall financial management of our organization, through budgetary controls	3.521	1.080	-0.689	-0.055
INTCON1	Government agencies have robust internal control systems in place.	4.115	0.705	0.989	-0.711
INTCON2	Internal controls in government agencies effectively prevent and detect fraud.	3.917	0.624	0.308	-0.201
INTCON3	Employees are aware of and understand the internal control policies and procedures.	3.417	1.187	-0.661	-0.595
INTCON4	Regular audits are conducted to ensure the effectiveness of internal controls in government agencies.	2.760	1.161	-0.258	0.482
INTCON5	Internal controls in government agencies are sufficient to safeguard public assets.	2.615	1.112	-0.708	0.398
INTCON6	There is a clear segregation of duties to prevent conflicts of interest in government agencies.	3.552	0.789	-0.319	-0.304
INTCON7	Internal control mechanisms are continuously reviewed and improved by government agencies.	3.802	0.873	1.678	-0.933
INTCON8	Government agencies provide adequate training on internal controls to their employees.	3.135	0.996	0.217	0.108
PF1	Government agencies deliver public services efficiently and promptly.	4.323	0.872	0.897	-1.260

PF2	The services provided by government agencies meet the needs and expectations of the public.	3.823	1.155	0.746	-1.172
PF3	Government agencies are transparent in their operations and decision-making processes.	3.542	0.923	0.381	-0.649
PF4	Public funds are managed effectively by government agencies.	3.646	0.829	-0.736	0.192
PF5	Government agencies are held accountable for their performance and actions.	3.604	0.995	0.591	-0.745
PF6	The performance of government agencies has improved over the past five years.	3.604	0.918	-0.503	0.056
PF7	Government agencies effectively implement policies and programs.	3.719	0.932	-0.697	-0.346
PF8	There is a high level of public trust in the performance of government agencies.	3.719	1.077	-0.767	-0.329

Source: Output from Smart PLS 4.

The descriptive statistics indicate varied means and standard deviations across the items, reflecting different levels of agreement and variability among respondents. For example, AIS1 has a high mean of 4.260 with a low standard deviation of 0.564, suggesting strong agreement and low variability among responses. In contrast, AIS4 shows a lower mean of 3.375 and a higher standard deviation of 0.869, indicating more diverse opinions. Additionally, most skewness and kurtosis values fall within the range of +1 and -1, suggesting that the data approximates a normal distribution, as per Hair et al. (2018). This normality is crucial for applying parametric tests, ensuring that the statistical analysis is valid and reliable. Items such as AIS1 (skewness: -0.030, kurtosis: -0.410) and INTCON2 (skewness: -0.201, kurtosis: 0.308) exemplify this, supporting the robustness of the dataset for further inferential statistics.

Table 2: Construct Validity, Reliability, and Collinearity Statistics

Variables	**Cronbach's alpha**	**Composite reliability (rho_a)**	**Composite reliability (rho_c)**	**Average variance extracted (AVE)**	**Variance Inflation Factor (VIF)**
Accounting Information System	0.768	0.750	0.796	0.504	1.374
Internal Control Mechanism	0.718	0.743	0.820	0.534	1.374
Performance	0.765	0.913	0.803	0.557	

Source: Output from Smart PLS 4.

The results in Table 2 show good validity and reliability for Accounting Information Systems (AIS), Internal Control Mechanism (ICM), and Performance constructs. Cronbach's alpha values for AIS (0.768), ICM (0.718), and Performance (0.765) exceed 0.70, indicating good internal consistency. Composite reliability values (rho_c) for AIS (0.796), ICM (0.820), and Performance (0.803) are strong. Average Variance Extracted (AVE) values for AIS (0.504), ICM (0.534), and Performance (0.557) are above 0.50. The Variance Inflation Factor (VIF) for AIS and ICM is 1.374, below 5, indicating no multicollinearity issues.

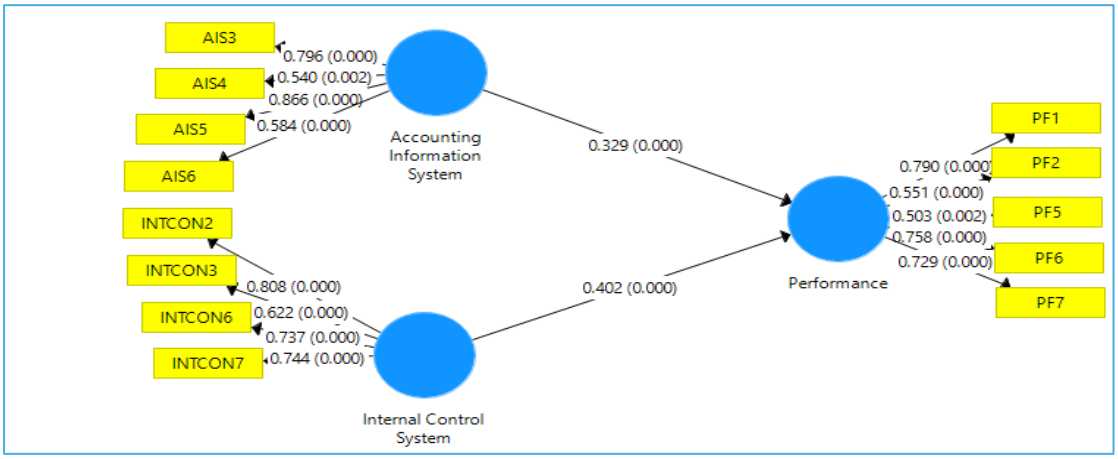
Table 3: Discriminant Validity

Heterotrait-Monotrait Ratio (HTMT) Matrix				**Fornell-Larcker criterion**		
	AIS	INTCON	PF	AIS	INTCON	PF
Accounting Information System (AIS)				0.710		
Internal Controls (INTCON)	0.752			0.522	0.731	
Performance (PF)	0.560	0.564		0.539	0.574	0.746

Source: Output from Smart PLS 4.

The results in Table 3 show that the constructs have good discriminant validity, assessed by Heterotrait-Monotrait Ratio (HTMT) and Fornell-Larcker criterion. HTMT values are below 0.85: AIS and INTCON (0.752), AIS and PF (0.560), and INTCON and PF (0.564). The Fornell-Larcker criterion confirms discriminant validity, with the square root of AVE for AIS (0.710), INTCON (0.731), and PF (0.746) being higher than their inter-construct correlations. This ensures the constructs are distinct and valid.

Bootstrapping with 5000 resample was performed for structural model of PLS-SEM estimation with aid of SmartPLS4 (version 4.1.0.4). The path coefficient was presented in the Table 4 and defined network was exhibited diagrammatically below.



Source: Output from Smart PLS 4.

Figure 1: Structural Model exhibiting the analysis of significance of factor loading, path coefficient (original sample) and P-value (sig.).

Tabl4:. Path Coefficients

Variables	Original sample (O)	T statistics (|O/STDEV|)	P values
Accounting Information -> Performance	0.329	4.489	0.000
Internal Control Mechanisms-> Performance	0.402	5.314	0.000

Source: Output from Smart PLS 4.

The restated hypotheses focus on the relationships between Accounting Information Systems (AIS) and Internal Control Mechanisms (INTCON) with Performance (PF). The first hypothesis, which posits a relationship between AIS and PF, is supported by the results, with a coefficient of 0.329 and a statistically significant T statistic of 4.489 ($p < 0.001$), indicating that AIS has a positive and

significant impact on PF. Similarly, the second hypothesis, which examines the relationship between INTCON and PF, is also supported by the data, showing a coefficient of 0.402 and a statistically significant T statistic of 5.314 ($p < 0.001$), suggesting that INTCON positively influences PF. These results underscore the importance of both AIS and INTCON in enhancing organizational performance, highlighting the significance of effective accounting information systems and internal control mechanisms in achieving better performance outcomes.

4.2 Discussion of Findings

The findings of this study indicate that accounting information systems (AIS) have a significant positive impact on the performance of government agencies in Kwara State. This result aligns with the outcomes of prior studies by Al-Delawi and Ramo (2020), Kareem et al. (2021), Khalid and Kot (2021), Jalloul et al. (2022), Ojomo and Falade (2022), and Okaily (2024), which all found that the implementation of AIS leads to improved organizational performance. These studies collectively support the premise that AIS enhances efficiency, accuracy, and the overall decision-making process within organizations. However, it is worth noting that the findings of this study contrast with those of Setyani et al. (2022), who did not find a significant link between AIS and performance.

In addition, the study reveals that internal control mechanisms significantly positively impact the performance of government agencies, consistent with the findings of Maharani and Damayanti (2020), Sagala (2020), Hutahayan (2020), Al-wali et al. (2020), and Alawaqleh (2021). These studies demonstrate that effective internal controls enhance organizational efficiency, reduce the risk of errors and fraud, and ensure compliance with regulations, thereby improving overall performance. The consistency of these findings underscores the critical role of internal controls in fostering a transparent, accountable, and efficient operational environment within government agencies.

5. Conclusion and Recommendations

The study highlights the critical role of Accounting Information Systems (AIS) and Internal Control Mechanisms (INTCON) in improving the performance of government agencies in Kwara State, Nigeria. AIS and INTCON significantly enhance organizational performance by improving financial reporting accuracy, decision-making, and operational efficiency. To enhance AIS and INTCON effectiveness, the study recommends Government agencies prioritize strategic investments in AIS and INTCON, including system upgrades, new technologies, and comprehensive training for employees to enhance their skills; Implement capacity-building and training programs focusing on data management, financial reporting standards, and internal control procedures; Conduct regular audits and reviews to monitor AIS and INTCON effectiveness, and establish feedback mechanisms for continuous improvement; Strengthen the policy and regulatory framework for AIS and INTCON, with clear guidelines and standards for compliance and alignment with organizational goals.

References

Alawaqleh, Q. A. (2021). "The effect of internal control on employee performance of small and medium-sized enterprises in Jordan: The role of accounting information system." The *Journal of Asian Finance, Economics and Business, 8(3), 855-863.*

Al-Delawi, A. S., & Ramo, W. M. (2020). "The impact of accounting information system on performance management." *Polish Journal of Management Studies, 21(2), 36-48.*

Al-Okaily, M. (2024). "Assessing the effectiveness of accounting information systems in the era of COVID-19 pandemic." *Journal of Information and Knowledge Management Systems, 54(1), 157-175.*

Asmuni, I. (2020). "Reliability Implementation of Accounting Information Systems in Improving Small and Medium Enterprises Financial Performance." *Test Eng. Manag, 83, 798-811.*

Assyarofi, A. A., & Ifada, L. M. (2024). "Accounting Information System Management, Business Processes, and The Quality of Financial Reports Mechanism." *AKRUAL: Jurnal Akuntansi, 15(2).*

Aye, S. T. (2023). "Internal Control Practices, Fraud Prevention and Financial Performance of" A" Bank *(Doctoral dissertation, MERAL Portal).*

Baraka, N. J. (2023). "Accounting information system and decision making in selected banking institutions in Kampala Uganda" *(Doctoral dissertation, Kampala International University, College of Economics and Management).*

Efuntade, O. O., Efuntade, A. O., & FCIB, F. (2023). "Application Programming Interface (API) And Management of Web-Based Accounting Information System (AIS): Security of Transaction Processing System, General Ledger and Financial Reporting System." *J. Account. Financ. Manag, 9(6), 1-18.*

Gofwan, H. (2022). "Effect of accounting information system on the financial performance of firms: A review of literature." DEPARTMENT OF ACCOUNTING (BINGHAM UNIVERSITY)-2nd Departmental Seminar Series with the Theme–History of Accounting Thoughts: *A Methodological Approach. Vol. 2, No. 1.*

Gołębiowska, A., Prokopowicz, D., & Wolańczyk, A. (2022). "Internal audit and management control in units of the public finance sector." *Zeszyty Naukowe Szkoły Głównej Służby Pożarniczej, 82.*

Gurgu, E., Zorzoliu, R. I., Ungureanu, G., Pistol, L., & Gurgu, I. A. (2022). "Challenges And Perspectives in Romania's Financial-Accounting Management System in The Context of Global Risks." *Annals of Spiru Haret University, 63.*

Hamed, R. (2023). "The role of internal control systems in ensuring financial performance sustainability." *Sustainability, 15(13).*

Haro, A. T. (2023). "Relationship Between Internal Controls and Management of Public Funds in Marsabit County, Kenya" (Doctoral dissertation, St. Paul's University).

Jarah, B. A. F., & Al Jarrah, M. A. (2022). "The role of accounting information systems in increasing performance efficiency in Jordanian companies." Academy of Strategic Management Journal, 21(1), 1-11.

Kareem, H. M., Dauwed, M., Meri, A., Jarrar, M. T., Al-Bsheish, M., & Aldujaili, A. A. (2021). "The role of accounting information system and knowledge management in enhancing organizational performance in Iraqi SMEs." *Sustainability, 13(22).*

Keaunui, E. G. E. K. (2023). "Small Business Internal Control System Strategies to Protect Business Assets and Profitability" *(Doctoral dissertation, Walden University).*

Keya, M. O. (2023). "Internal Control Systems and Public Financial Management in The County Government of Siaya, Kenya."

Khalid, B., & Kot, M. (2021). "The impact of accounting information systems on performance management in the banking sector." *IBIMA Business Review.*

Lawal, A., Mohamed, R., Abdalla, H., Elkelish, W., & Lasyoud, A. (2022). "The role of accounting information systems in firms' performance during the COVID-19

pandemic." *Journal of Governance and Regulation, 11(1), 45-54*.

Li, C., Razzaq, A., Ozturk, I., & Sharif, A. (2023). "Natural resources, financial technologies, and digitalization: the role of institutional quality and human capital in selected OECD economies." *Resources Policy, 81*.

Likangaga, R., Kumburu, N. P., & Panga, F. (2023). "Influence of accountability indicators on service delivery among local government authorities in Dodoma, Tanzania."

Mahama and Dahlan (2021). "Accounting Information System Adoption Model for Small and Medium-Sized Enterprises in Northern Ghana." DOI - 10.1109/ICRIIS-5.

Maharani, P. P. G., & Damayanthi, I. G. A. E. (2020). "The effect of accounting information systems and internal control of employee performance with organizational culture as a mediation variable." *American Journal of Humanities and Social Sciences Research*, 4(1), 233-241.

Mnyakin, M. (2023). "Big Data in the Hospitality Industry: Prospects, Obstacles, and Strategies." *International Journal of Business Intelligence and Big Data Analytics, 6(1), 12-22.*

Muda, I., Asrina Waty, H., Roesli, E., & Nuradi, T. E. (2020). "The impact of accounting information system on user satisfaction: Empirical studies on local government bank." *Journal of Information Technology Management, 12(1), 94-111*.

Ojomo, A. D., & Falade, A. O. O. "Accounting Information System and Financial Performance of Listed Insurance Companies in Nigeria." *Gvu Journal of Research and Development, 27.*

Olaofe-Obasesin, M. (2020). "Effects of Accounting Information System on Organization Performance in Nigeria." International Journal of Software Engineering and Computer Systems, 6(2), 18-22.

Qatawneh, A. (2022). "The influence of data mining on accounting information system performance: a mediating role of information technology infrastructure." *Journal of Governance and Regulation, 11(1).*

Sagala, F. Z. (2020). "The Effect of Accounting Information Systems and Internal Control on Employee Performance" in *JASa (Jurnal Akuntansi, Audit dan Sistem Informasi Akuntansi), 4(1), 69-81.*

Segreti, L. (2022). "COVID-19's Influence on Job Performance in a Remote Work Environment at a Small Software Development Organization" *(Doctoral dissertation, Trident University International).*

Setyani, S., Hanifah, I. A., & Ismawati, I. I. (2022). "The Role of Budget Decision-Making as a Mediation of Accounting Information Systems and Organizational Culture on the Performance of Government Agencies" in Journal of Applied Business, Taxation and Economics Research, 1(3), 311-324.

Shenkoya, T. (2023). "Can Digital Transformation Improve Transparency and Accountability of Public Governance in Nigeria?" in Transforming Government: *People, Process and Policy, 17(1), 54-71.*

Silva, C. A. D., & Rosa, F. S. D. (2023). "Control and Motivation in Task Performance of Public Servants at Home Office in the Face of the COVID-19 Pandemic" in Revista de Gestão, 30(3), 267-281.

Sunarta, I. N., & Astuti, P. D. (2023). "Accounting Information System Quality and Organizational Performance: The Mediating Role of Accounting Information Quality" in International *Journal of Professional Business Review, 8(3), e01192-e01192.*

Tahiru, Z. (2020). "Adoption of Computerized Accounting Information System and Financial Performance of Metropolitan, Municipal and District Assemblies in Ghana: The Role of Internal Control Systems" (*Doctoral dissertation, University of Cape Coast).*

Tambare P, Meshram C, Lee CC, Ramteke RJ, Imoize AL. (2021). "Performance Measurement System and Quality Management in Data-Driven Industry 4.0: *A Review" in Sensors (Basel).*

10.3390/s22010224. PMID: 35009767; PMCID: PMC8749653.

Thomas, A., Clyne, R., Bishop, M., & Lilly, A. (2022). "A New Statutory Role for the Civil Service".

Ugwu, J. I., & Ochuba, U. L. (2021). "Internal Control: A Tool for Fraud Control in Deposit Money Banks in Nigeria" in *European Journal of Business and Management, 13(13), 64-75.*

UKamaluddeen, H. K. (2020). "360 Degree Appraisal for SeePerformance Management Effectiveness and Accountability in the Public Sector of Kwara State, Nigeria" (*Doctoral dissertation, Kwara State University (Nigeria)).*

Wrage, A., & Birenbaum, J. (2024). "Concepts in Corruption" in Routledge Handbook of Public Procurement Corruption, pp. 13-26. Routledge.