TECHNOLOGY ACCEPTANCE AND INTERNAL CONTROL SYSTEM QUALITY IN KADUNA STATE MINISTRIES, DEPARTMENTS, AND AGENCIES: INTEGRATING THE TECHNOLOGY ACCEPTANCE MODEL AND COSO FRAMEWORK

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Abstract
The increasing digitalisation of public financial management has created new opportunities to strengthen internal control systems. However, the effectiveness of technology-enabled controls depends partly on users' acceptance and utilisation of digital systems. This study examines how Technology Acceptance Model (TAM) constructs influence Internal Control System Quality (ICSQ) in Kaduna State Ministries, Departments, and Agencies (MDAs), Nigeria. Specifically, the study investigates the effects of perceived usefulness, perceived ease of use, attitude toward use, and actual system use on ICSQ, conceptualised through the five components of the COSO Internal Control Framework. The study adopted a quantitative explanatory cross-sectional survey design. We collected data through questionnaires administered to accounting, finance, internal audit, and ICT personnel across Kaduna State MDAs. Of 300 questionnaires administered, 263 were returned, and 247 valid responses were analysed using exploratory factor analysis and multiple linear regression. The regression model was statistically significant and explained 54.5% of the variation in ICSQ ($R^2 = 0.545$). Perceived usefulness ($\beta = 0.368$, $p < 0.001$), perceived ease of use ($\beta = 0.329$, $p < 0.001$), and attitude toward use ($\beta = 0.347$, $p < 0.001$) had significant positive effects on ICSQ. In contrast, actual system use had a positive but statistically insignificant effect ($\beta = 0.036$, $p = 0.417$). The findings indicate that users' perceptions and attitudes toward technology are associated with the quality of technology-enabled internal controls. At the same time, system use alone may not be sufficient to enhance ICSQ. The study contributes by integrating TAM and the COSO framework to examine behavioural determinants of internal control quality in a sub-national public sector context. The findings underscore the importance of user-centred system design, continuous training, and organizational support in strengthening technology-enabled internal controls.

Keywords: Technology Acceptance Model; Internal Control System Quality; COSO Framework; Digital Financial Management; Public Sector; Nigeria

1.0 Introduction

The rapid digitalization of public financial management has transformed how governments design, implement, and monitor internal control systems (ICSs). Governments increasingly deploy technologies such as Enterprise Resource Planning (ERP) systems, Integrated Financial Management Information Systems (IFMIS), and electronic procurement platforms to improve financial accountability, transparency, operational efficiency, and public service delivery (Committee of Sponsoring Organizations of the Treadway Commission [COSO], 2013; World Bank, 2022b). However, the effectiveness of technology-enabled internal controls depends not only on the availability of digital infrastructure but also on employees' willingness and ability to accept and use these systems effectively (Davis, 1989; Venkatesh et al., 2003). This behavioural dimension matters because ineffective technology use may limit the control benefits expected from digital financial management systems.

ICSs are fundamental to public sector governance because they support asset safeguarding, reliable financial reporting, compliance with laws and regulations, and the achievement of organisational objectives. The COSO Internal Control Framework conceptualizes effective internal control through five interrelated components: control environment, risk assessment, control activities, information and communication, and monitoring (COSO, 2013). Although digital technologies can strengthen these components through automation, improved information flows, audit trails, monitoring, and segregation of duties, their effectiveness ultimately depends on how users perceive and utilise the systems.

This issue is particularly relevant in Kaduna State, Nigeria, where substantial investments have been made in digital public financial management. The state's digital transformation has included the Budget and Treasury Management Information System (BATMIS), subsequently expanded into the State Integrated Financial Management Information System (SIFMIS), alongside other technology-enabled platforms supporting budgeting, accounting, procurement, payroll, revenue administration, and public service delivery (Kaduna State Government, 2018; World Bank, 2021). However, ongoing efforts to improve system integration and operational effectiveness suggest that technology availability does not necessarily guarantee effective use.

TAM provides a behavioural explanation of how users' perceptions of technology may relate to the effectiveness of technology-enabled internal controls. Perceived usefulness and ease of use can encourage favourable attitudes and consistent engagement with digital systems, which may facilitate control activities such as authorization, verification, reconciliation, documentation, information processing, and monitoring, thereby supporting reliable information, audit trails, and consistent control procedures (Davis, 1989; COSO, 2013; Venkatesh & Davis, 2000; Romney & Steinbart, 2021). However, this relationship may also depend on organizational conditions, including management support, training, system quality, regulatory requirements, institutional arrangements, and system integration. Accordingly, the study examines the statistical association between employees' perceptions, attitudes, and actual use of technology-enabled financial systems and ICSQ in Kaduna State MDAs rather than assuming that technology acceptance alone determines ICSQ.

This study therefore examines how TAM constructs influence Internal Control System Quality (ICSQ) in Kaduna State Ministries, Departments, and Agencies (MDAs). Specifically, it investigates the effects of perceived usefulness, perceived ease of use, attitude toward use, and actual system use on ICSQ, conceptualized through the five COSO components. By integrating TAM with the COSO Internal Control Framework, the study links the behavioural dimension of technology acceptance to the organisational quality of internal control and extends TAM beyond its conventional focus on technology adoption and usage.

This study also contributes to accounting and public sector governance literature by providing empirical evidence from a sub-national government context in a developing economy, where evidence on the behavioural determinants of ICSQ remains limited. It also offers practical insights for public sector managers, accountants, auditors, ICT professionals, and policymakers seeking to strengthen internal controls through effective technology adoption and utilization.

2.0 Literature Review

Technology acceptance refers to the extent to which individuals are willing to adopt, use, and integrate technological systems into their routine work activities, reflecting their perceptions, attitudes, intentions, and actual usage behaviours (Davis, 1989; Venkatesh & Davis, 2000; Venkatesh et al., 2003). It is increasingly recognised as a critical determinant of successful organisational digital transformation because technological innovations achieve their intended benefits only when users are willing and able to utilise them effectively. The concept has evolved from technology availability to a behavioural process shaped by users' perceptions and experiences, leading to influential models such as the Theory of Planned Behaviour (TPB), Diffusion of Innovation (DOI) Theory, the Unified Theory of Acceptance and Use of Technology (UTAUT) and TAM (Ajzen, 1991; Rogers, 2003; Venkatesh et al., 2003). Among these, TAM remains particularly influential due to its parsimony, explanatory power, and extensive empirical validation across contexts (Marangunić & Granić, 2015; Tetik et al., 2024; Gil-Fernández & Calderón-Garrido, 2026). Accordingly, this study adopts TAM to explain employees' acceptance of technology-enabled ICSs, focusing on perceived usefulness, perceived ease of use, attitude toward use, behavioural intention, and actual system use (Davis, 1989; Venkatesh & Davis, 2000).

Perceived usefulness refers to the degree to which an individual believes that using a technological system enhances job performance (Davis, 1989). Employees are more likely to adopt systems they perceive as improving efficiency, productivity, decision-making, and work quality. In the current study, perceived usefulness reflects employees' beliefs that technology-enabled systems in budgeting, accounting, procurement, payroll administration, financial reporting, and related internal control activities such as BATMIS/SIFMIS, electronic procurement platforms, and computerised accounting systems strengthen ICSQ in line with the COSO framework (COSO, 2013; Romney & Steinbart, 2021).

Perceived ease of use refers to the extent to which an individual believes that using a technological system requires minimal effort (Davis, 1989). User-friendly systems are generally associated with higher acceptance because they reduce learning barriers and encourage continuous utilisation. In the current study, perceived ease of use reflects employees' beliefs that technology-enabled internal control procedures are easy to learn and operate, thereby facilitating effective execution of internal control responsibilities and enhancing ICSQ (COSO, 2013; King & He, 2006; Scherer et al., 2019).

Attitude toward use refers to an individual's overall positive or negative evaluation of using a technological system (Davis, 1989). Positive attitudes encourage technology use, whereas negative attitudes often lead to resistance to technological change. Although later versions of TAM reduced its mediating role, attitude remains an important determinant of sustained technology utilisation (Venkatesh & Davis, 2000). In the current study, favourable attitudes towards technology-enabled internal control procedures are expected to improve ICSQ (COSO, 2013).

Actual system use refers to the consistent application of technological systems in performing organizational tasks (Venkatesh et al., 2003). It is commonly assessed through the frequency,

duration, and extent of system utilization. In the present study, actual system use reflects employees' routine utilization of technology-enabled internal control procedures. Consistent utilization of these systems is expected to strengthen ICSQ by improving the effectiveness of technology-supported control processes (COSO, 2013; Romney & Steinbart, 2021).

Collectively, these four constructs explain employees' acceptance and effective utilization of technology. As governments continue to invest in digital financial management systems, technology acceptance has become increasingly important for improving transparency, accountability, public financial management, and organizational performance (OECD, 2021; World Bank, 2022). Conversely, low technology acceptance may limit system utilization and reduce the effectiveness of technology-enabled internal controls (Scherer et al., 2019). Accordingly, this study conceptualises technology acceptance as a key behavioural determinant of ICSQ in Kaduna State MDAs.

Recent empirical research supports the relevance of technology acceptance to digital system adoption and utilisation. However, much of the recent evidence focuses on accounting information systems, business intelligence, digital transformation, and system utilization rather than ICSQ as an organizational outcome. Recent Nigerian studies have examined technology acceptance in accounting and digital financial technologies (Isiaku & Adalier, 2024; Muhammad et al., 2025), while Oyedokun et al. (2025) examined digital technology in relation to internal control and fraud detection. Thus, direct evidence linking individual-level TAM constructs to overall ICSQ remains limited, particularly in sub-national public-sector organizations. This gap provides a basis for examining the association between employees' technology perceptions and utilization and ICSQ in Kaduna State MDAs.

ICSQ is also shaped by organizational and institutional conditions beyond technology acceptance, including management commitment, employee competence, training, internal audit effectiveness, resources, governance, regulation, institutional procedures, and accountability mechanisms. These factors can influence how technology-enabled controls are designed, implemented, and monitored. Accordingly, this study treats TAM as a behavioural dimension associated with ICSQ rather than an exclusive explanation of internal control effectiveness.

ICSQ refers to the extent to which an organization's internal control system effectively supports reliable financial reporting, operational efficiency, regulatory compliance, risk management, and safeguarding of resources (COSO, 2013; Romney & Steinbart, 2021; Alshaiti, 2023). Its evolution from traditional accounting controls to an integrated management process reflects growing emphasis on governance, technology, risk management, and organizational performance (COSO, 2013; Henk, 2020; Giannopoulos et al., 2025). The COSO Integrated Framework identifies five interrelated components of effective internal control: control environment, risk assessment, control activities, information and communication, and monitoring activities (COSO, 2013). These components provide reasonable assurance over operational, financial reporting, and compliance objectives and remain widely applied across public and private organizations (Wang, 2019; Henk, 2020; Giannopoulos et al., 2025). In the public sector, high-quality internal controls strengthen accountability, transparency, compliance, risk management, fraud prevention, and public service delivery (OECD, 2021; World Bank, 2022a). Accordingly, this study conceptualizes ICSQ as a multidimensional construct.

The ICSQ comprises five interrelated dimensions. First, the control environment provides the foundation for effective internal control through management's commitment to integrity, ethical conduct, competence, accountability, governance, and control consciousness (COSO,

2013; Romney & Steinbart, 2021; Wang, 2019; Giannopoulos et al., 2025). Second, risk assessmentinvolves systematically identifying, analysing, and managing operational, financial, compliance, and technology-related risks that may hinder organisational objectives (COSO, 2013). Third, control activities encompassing authorization, verification, reconciliation, segregation of duties, and other procedures that ensure management directives are implemented effectively and reduce errors and fraud (COSO, 2013; Romney & Steinbart, 2021). Fourth, information and communication concerning the timely generation, processing, and dissemination of relevant and reliable information for decision-making, accountability, and effective control (COSO, 2013). Fifth, monitoring activities involving continuous or periodic evaluation of controls through supervision, internal audit, exception reporting, and corrective actions (COSO, 2013). Collectively, these dimensions provide the basis for assessing the quality of technology-enabled internal control systems in Kaduna State MDAs.

Although ICSQ is conceptualized as a multidimensional construct, the items measuring its five components are aggregated to form an overall ICSQ composite score for empirical analysis. This approach is consistent with the COSO framework, which conceptualizes the five components as interrelated elements of an integrated internal control system (COSO, 2013), and is further supported by the measurement results demonstrating adequate reliability and construct coherence as presented in Section 4.3.4.

Theoretical Review

The study is anchored on the Technology Acceptance Model (TAM), developed by Davis (1989) from the Theory of Reasoned Action (Fishbein & Ajzen, 1975). TAM was originally developed to explain individuals' acceptance and use of information technology, particularly the roles of perceived usefulness and perceived ease of use in shaping technology-related attitudes and behaviour (Davis, 1989; Davis et al., 1989). Subsequent extensions, including TAM2, TAM3, and UTAUT, incorporated additional social, cognitive, and organizational factors (Venkatesh & Davis, 2000; Venkatesh et al., 2003). Nevertheless, TAM remains relevant where the focus is on users' perceptions and behavioural responses to technology because of its parsimonious structure and extensive empirical application (King & He, 2006; Marangunić & Granić, 2015; Tetik et al., 2024).

In this study, TAM is not intended to explain all dimensions of organizational ICSQ. Rather, it provides the behavioural perspective for examining how employees' perceptions, attitudes, and use of technology may be associated with technology-enabled control procedures. The COSO Internal Control Framework complements TAM by providing the organizational perspective through which ICSQ is conceptualized across control environment, risk assessment, control activities, information and communication, and monitoring. Thus, TAM explains the behavioural dimension of technology engagement, while COSO provides the organizational control dimensions of the dependent variable.

Alternative perspectives, including UTAUT, Information Systems Success Theory, Institutional Theory, and Contingency Theory, provide broader explanations of technology use and organizational control. UTAUT incorporates factors such as social influence and facilitating conditions (Venkatesh et al., 2003), while Information Systems Success Theory emphasizes system, information, and service quality and resulting benefits. Institutional and Contingency perspectives emphasize organizational and contextual influences. However, the present study focuses specifically on employees' behavioural perceptions, attitudes, and use of technology-enabled financial management systems. TAM therefore provides the direct theoretical lens for the four explanatory constructs, while COSO captures the organizational control dimensions of ICSQ. These alternative perspectives are recognized as complementary rather than incorporated into the tested model.

The theoretical integration is therefore deliberately complementary: TAM provides the behavioural explanation for perceived usefulness, perceived ease of use, attitude toward use, and actual system use, whereas COSO provides the framework for conceptualizing and measuring ICSQ. The proposed relationship is examined as a statistical association rather than a definitive causal process, consistent with the cross-sectional design. Accordingly, the study examines whether employees' technology acceptance is associated with ICSQ in Kaduna State MDAs. Figure 1 presents the resulting theoretical framework.

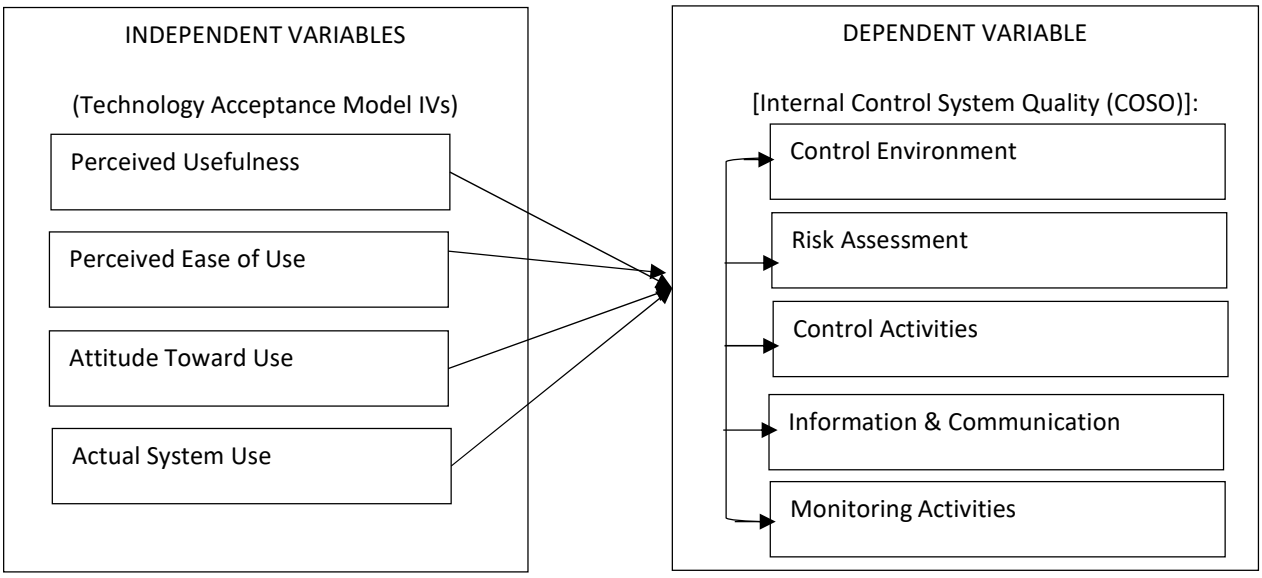


Figure 1: Research Theoretical Framework

Empirical Review and Hypothesis Development

This section synthesizes the most relevant international and Nigerian studies to provide the empirical basis for hypothesis development. Accordingly, the proposed hypotheses are grounded in both the TAM and the available empirical evidence. Existing studies on ICSQ have largely focused on its role in enhancing financial reporting, accountability, fraud prevention, governance, compliance, and organizational performance, or on organizational determinants such as governance, internal audit, and information systems (Babatunde, 2013; Adeyemi & Olarewaju, 2019; Wang, 2019; Henk, 2020; Alshaiti, 2023; Oyedokun et al., 2025; Giannopoulos et al., 2025). Similarly, TAM-based studies have predominantly examined technology adoption, behavioural intention, user satisfaction, and system utilization rather than ICSQ (Davis, 1989; Venkatesh & Davis, 2000; King & He, 2006; Marangunić & Granić, 2015; Muhammad et al., 2025; Tetik et al., 2024). Consequently, empirical evidence directly linking the TAM constructs to ICSQ remains limited, particularly within Nigerian public sector organizations, thereby justifying the present study.

Perceived Usefulness and Internal Control System Quality

Meta-analytical and recent review evidence confirms the importance of perceived usefulness in explaining technology acceptance and continued system use across organizational contexts (King & He, 2006; Tetik et al., 2024; Musa et al., 2024). Evidence from accounting and internal control research further suggests that effective use of technology can strengthen control quality by improving compliance, information quality, monitoring, and control procedures (Chang et al., 2014; Wang, 2019; Henk, 2020; Giannopoulos et al., 2025). Recent Nigerian evidence similarly indicates that perceived usefulness promotes AIS adoption and effective use of digital financial technologies (Muhammad et al., 2025). However, existing

studies have largely examined technology acceptance, AIS adoption, or organizational outcomes rather than the direct relationship between perceived usefulness and ICSQ, particularly in Nigerian public sector organizations. This study therefore expects that employees who perceive technology-enabled financial management systems as useful are more likely to support effective technology use and stronger internal controls.

Perceived Ease of Use and Internal Control System Quality

Extensive empirical evidence indicates that perceived ease of use is an important determinant of technology acceptance and continued system utilization. Venkatesh and Davis (2000) demonstrated that systems requiring less effort encourage sustained use, while King and He (2006), through a meta-analysis of TAM studies, confirmed the positive influence of perceived ease of use on technology acceptance. More recent reviews similarly identify perceived ease of use as a consistent predictor of technology adoption, particularly during organizational digital transformation (Tetik et al., 2024; Musa et al., 2024). Also, evidence from accounting and internal control research further suggests that user-friendly technology can strengthen control effectiveness by facilitating compliance, information quality, monitoring, and efficient execution of control procedures (Chang et al., 2014; Wang, 2019; Henk, 2020; Giannopoulos et al., 2025). Nigerian evidence also indicates that perceived ease of use promotes the adoption and continued utilization of digital financial systems (Muhammad et al., 2025; Isiaku & Adalier, 2024).

Attitude toward Use and Internal Control System Quality

Empirical evidence indicates that attitude toward use plays an important role in users' acceptance and continued utilization of technology. Davis (1989) established that favourable user perceptions contribute to positive attitudes toward technology, while subsequent TAM research confirms that users with more favourable attitudes are more likely to accept and use technology consistently (Davis et al., 1989; Venkatesh & Davis, 2000; King & He, 2006). Recent reviews similarly show that positive attitudes toward digital technologies contribute to technology acceptance and sustained system use in organizational settings (Tetik et al., 2024; Musa et al., 2024).

In accounting and internal control contexts, positive user attitudes can facilitate effective utilization of technology-enabled systems by encouraging compliance with digital procedures, consistent system use, and effective execution of control activities. Studies on technology-supported internal control and accounting systems indicate that effective technology utilization can improve information quality, monitoring, compliance, transparency, and control effectiveness (Chang et al., 2014; Wang, 2019; Henk, 2020; Alshaiti, 2023; Giannopoulos et al., 2025). Nigerian evidence also indicates that favourable user attitudes and acceptance contribute to the effective adoption and utilization of digital financial technologies (Muhammad et al., 2025; Isiaku & Adalier, 2024). Overall, the evidence suggests that favourable attitudes toward technology can facilitate effective technology utilization and contribute to stronger internal control system quality.

Actual System Use and Internal Control System Quality

Empirical evidence suggests that actual system use is an important behavioural mechanism through which technology can influence organizational processes and outcomes. TAM research indicates that continued and effective use of information systems reflects users' acceptance of technology and facilitates the realization of its expected benefits (Davis, 1989; Venkatesh & Davis, 2000). Meta-analytical and review evidence similarly demonstrates that actual technology use is associated with successful technology utilization across organizational contexts (King & He, 2006; Marangunić & Granić, 2015; Tetik et al., 2024).

In accounting and internal control settings, consistent use of technology-enabled systems can strengthen control effectiveness through automated procedures, improved information availability, real-time monitoring, and enhanced compliance. Previous studies report that technology-supported internal control systems, accounting information systems, and digital financial platforms can improve financial reporting quality, accountability, monitoring, and fraud detection when effectively utilised (Wang, 2019; Henk, 2020; Alshaiti, 2023; Olumoh, 2024; Oyedokun et al., 2025; Giannopoulos et al., 2025). Nigerian evidence similarly indicates that effective utilization of digital financial systems contributes to improved accountability, compliance, and governance in organizations (Muhammad et al., 2025; Oyedokun et al., 2025). Overall, these findings suggest that consistent and effective use of technology-enabled systems can contribute to stronger Internal Control System Quality.

Synthesis of Empirical Literature, Research Gaps and Hypothesis Development

The empirical literature reviewed reveals several important observations. First, studies grounded in the TAM consistently demonstrate that the four independent constructs of the TAM are significant determinants of technology acceptance, behavioural intention, and technology utilization across diverse organizational contexts (Davis, 1989; Davis et al., 1989; Davis, 1993; Szajna, 1996; Venkatesh & Davis, 2000; King & He, 2006; Marangunić & Granić, 2015; Tetik et al., 2024; Musa et al., 2024). Second, the internal control literature indicates that technology-enabled financial management systems, ERP systems, AIS, and other digital technologies are associated with improvements in financial reporting, accountability, compliance, transparency, governance, fraud prevention, risk management, and organizational performance (Chang et al., 2014; Wang, 2019; Henk, 2020; Alshaiti, 2023; Olumoh, 2024; Oyedokun et al., 2025; Giannopoulos et al., 2025). Collectively, these findings suggest that technology acceptance and effective utilization may be associated with stronger technology-enabled internal controls. However, the extent of this relationship may also depend on organizational, governance, regulatory, and institutional conditions.

Despite these contributions, several important gaps remain. Empirically, most TAM studies have treated the four independent constructs of the TAM as predictors of behavioural intention, user satisfaction, technology adoption, or continued system use rather than ICSQ (Davis, 1989; Venkatesh & Davis, 2000; King & He, 2006; Muhammad et al., 2025). Likewise, studies on internal control have primarily focused on governance mechanisms, internal audit, AIS, ERP implementation, organizational culture, fraud prevention, financial reporting, compliance, and organizational performance without explicitly examining technology acceptance as a behavioural antecedent of ICSQ (Wang, 2019; Henk, 2020; Alshaiti, 2023; Oyedokun et al., 2025; Giannopoulos et al., 2025). Theoretically, very few studies have integrated TAM with the COSO Internal Control Framework to explain how employees' acceptance of technology influences the quality of internal control systems. Contextually, evidence from public sector organizations, particularly State MDAs in developing countries such as Nigeria, remains limited despite increasing investments in digital financial management systems. These empirical, theoretical and contextual gaps provide a strong justification for the present study.

Guided by the theoretical propositions of the TAM and the empirical evidence reviewed, the study proposes that employees who perceive technology-enabled financial management systems as useful and easy to use, develop favourable attitudes towards them, and utilize them consistently are more likely to enhance ICSQ in Kaduna State MDAs. Accordingly, the study hypothesizes that:

H_{01}: Perceived usefulness has a significant positive influence on ICSQ in Kaduna State MDAs.

H_{02}: Perceived ease of use has a significant positive influence on ICSQ in Kaduna State MDAs.
H_{03}: Attitude toward use has a significant positive influence on ICSQ in Kaduna State MDAs.
H_{04}: Actual system use has a significant positive influence on ICSQ in Kaduna State MDAs.

3.0 Methodology

This study adopts a quantitative cross-sectional survey design within the positivist research paradigm to examine the influence of TAM independent constructs on ICSQ. The design is appropriate for testing the proposed hypotheses using standardized data collected at a single point in time and supports objective statistical analysis and generalization of the findings (Creswell & Creswell, 2023; Saunders et al., 2023). Given the cross-sectional design, the findings are interpreted as statistical associations rather than definitive causal relationships.

The study targeted accounting, finance, internal audit, and ICT personnel in the 98 Kaduna State MDAs who were directly involved in technology-enabled financial management and internal control processes. According to records obtained from the Office of the Head of Service, Kaduna State (personal communication, May 19, 2026), the sampling frame comprised 723 eligible personnel**.** Using the Krejcie and Morgan (1970) sample size table, a minimum sample of 254 respondents was required. Accordingly, 300 questionnaires were distributed using proportionate stratified random sampling, with the MDAs serving as the strata. A total of 263 questionnaires were returned, representing an 87.7% response rate**,** of which 247 were complete and suitable for analysis, yielding an effective response rate of 82.3%**.**

Primary data were collected using a structured questionnaire adapted from validated instruments reported in previous studies. The questionnaire comprised six sections covering respondents' demographic characteristics, perceived usefulness, perceived ease of use, attitude toward use, actual system use, and ICSQ. Perceived usefulness and perceived ease of use were measured using items adapted from Davis (1989) and Venkatesh and Davis (2000), while attitude toward use and actual system use were adapted from Davis (1989) and Venkatesh et al. (2003). ICSQ was measured based on the five components of the COSO Internal Control Framework (COSO, 2013), consistent with the operational definitions presented in Section 2.1. Perception-based measurement was adopted because respondents directly involved in accounting, finance, internal audit, and ICT activities are positioned to assess the implementation of the five COSO components across MDAs. At the same time, objective control indicators may not be consistently available across organizations. All items were measured on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree)**.**

To ensure instrument quality, face and content validity were established through expert review, while construct validity was assessed using exploratory factor analysis. Internal consistency was evaluated using Cronbach's alpha, adopting the recommended minimum threshold of 0.70 (Hair et al., 2022). The results of the validity and reliability analyses are presented in the Results section.

Data were analysed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics were employed to summarize respondents' characteristics, while exploratory factor analysis and Cronbach's alpha were used to assess construct validity and reliability, respectively. Although ICSQ is conceptually multidimensional, the five COSO components were aggregated into an overall composite score for the present analysis; therefore, multiple linear regression was considered appropriate for testing the hypothesized relationships with the TAM constructs. PLS-SEM may provide a useful approach for examining the

multidimensional and higher-order structure of ICSQ in future research. The study hypotheses were tested at the 5% level of significance using the following regression model:

$$\mathbf{ICSQ}_i = \beta_0 + \beta_1\mathbf{1PU}_i + \beta_2\mathbf{PEU}_i + \beta_3\mathbf{ATU}_i + \beta_4\mathbf{ASU}_i + \varepsilon_i$$

Where:
ICSQ = Internal Control System Quality
PU = Perceived Usefulness
PEU = Perceived Ease of Use
ATU = Attitude toward Use
ASU = Actual System Use
β_0 = Constant
β_1–β_4 = Regression coefficients
ε = Error term

4.0 Results

Preliminary Analysis and Descriptive Statistics

A total of 300 questionnaires were distributed to accounting, finance, internal audit, and ICT personnel across the Kaduna State MDAs. Of these, 263 questionnaires were returned, representing a response rate of 87.7%. After screening for completeness and consistency, 16 questionnaires were excluded because of substantial missing responses and incomplete information, leaving 247 usable questionnaires for the final analysis as shown in Table 1. The effective response rate was therefore 82.3%, which exceeds the minimum response rates commonly reported in organizational survey research and is considered adequate for statistical analysis (Baruch & Holtom, 2008).

Table 1:
Questionnaire Administration

Description	Frequency	Percentage (%)
Questionnaires distributed	300	100.0
Questionnaires returned	263	87.7
Questionnaires discarded	16	5.4
Final usable questionnaires	247	82.3

Source: Field Survey, 2026.

Table 2 presents the demographic characteristics of the respondents. Of the 247 usable questionnaires, the majority of respondents were male **(**61.5%), while females accounted for 38.5%**.** This distribution reflects the workforce composition of accounting, finance, internal audit, and ICT units within Kaduna State MDAs. Regarding age, most respondents (43.3%) were between 36 and 45 years, followed by those aged 46–55 years (28.3%), suggesting that the respondents possessed sufficient maturity and professional experience to provide reliable information on technology-enabled internal control systems.

The educational profile indicates that the respondents were highly educated, with 56.3% holding bachelor's degrees/Higher National Diploma and 31.2% possessing postgraduate qualifications. Only 12.5% had diploma or equivalent qualifications. This suggests that the respondents had the educational background necessary to understand the questionnaire and evaluate technology acceptance and internal control practices.

With respect to work experience, approximately 70% of the respondents had served for more than 10 years, indicating substantial institutional knowledge and familiarity with financial management and internal control procedures. In terms of professional placement, finance and

accounting personnel constituted the largest proportion of respondents (44.9%), followed by internal audit (26.3%) and ICT (15.8%), while directors of finance and chief accountants accounted for 13.0%**.** Overall, the demographic characteristics indicate that the respondents were well positioned to provide informed responses relevant to the objectives of the study.

Table 2:
Respondent Characteristics

Variable	Category	Frequency	Percentage (%)
Gender	Male	152	61.5
	Female	95	38.5
	Total	**247**	**100.0**
Age (Years)	25–35	45	17.8
	36–45	106	43.3
	46–55	70	28.3
	Above 55	26	10.5
	Total	**247**	**100.0**
Educational Qualification	Diploma/NCE	30	12.5
	Bachelor's Degree/HND	140	56.3
	Postgraduate Degree	77	31.2
	Total	**247**	**100.0**
Years of Service	Less than 5 years	26	10.9
	5–10 years	48	19.4
	11–15 years	86	34.8
	Above 15 years	87	34.8
	Total	**247**	**100.0**
Department/Designation	Finance/Accounts Officers	112	44.9
	Internal Audit	65	26.3
	ICT Personnel	38	15.8
	Directors/Head of Finance/Chief Accountants/Bursars	32	13.0
	Total	**247**	**100.0**

Source: Field Survey, 2026.

Prior to hypothesis testing, several preliminary analyses were conducted to assess the quality of the data and verify the assumptions underlying multiple regression analysis. These included tests for missing data, outliers, normality, reliability, validity, common method bias, and multicollinearity.

The dataset was examined for missing values before analysis. Of the 263 returned questionnaires, 16 contained substantial missing responses and were excluded during the screening process. The remaining 247 questionnaires contained only negligible item-level missing values (less than 1%), which were treated using mean substitution because the proportion was well below the recommended threshold of 5% (Hair et al., 2022). Consequently, the final dataset was considered complete and suitable for subsequent analyses.

Potential outliers were examined using standardized z-scores and Mahalanobis distance. The standardized scores ranged from −3.48 to 2.53, indicating a small number of observations beyond the conservative ±3.29 threshold (Tabachnick & Fidell, 2019). However, Mahalanobis distance identified no multivariate outliers at $p < .001$. Accordingly, the observations were retained for analysis.

Although the Krejcie and Morgan (1970) table indicated a minimum sample of 254, 247 valid responses remained after data screening. A sensitivity power analysis for four predictors at $\alpha = .05$ showed that the final sample could detect an effect as small as $f^2=0.049$ with 80%

power. Given that the observed effect size was f^2=1.198, the final sample was considered adequate for testing the proposed regression model.

The normality of the data was assessed using skewness and kurtosis statistics. As presented in Table 3, skewness values ranged from -0.279 to 0.048, while kurtosis values ranged from -0.501 to 0.303. These values fall within the acceptable range of ±2**,** indicating that the data were approximately normally distributed (Hair et al., 2022).

Table 3:
Normality Test

Variable	Skewness	Kurtosis
Perceived Usefulness	-0.174	-0.501
Perceived Ease of Use	-0.096	-0.295
Attitude toward Use	-0.234	-0.061
Actual System Use	0.048	-0.053
Internal Control System Quality	-0.279	0.303

Reliability was assessed using Cronbach's alpha. As shown in Table 4, the coefficients ranged from 0.886 to 0.977, exceeding the recommended minimum threshold of 0.70 (Hair et al., 2022). These results indicate satisfactory reliability for all constructs.

Table 4:
Reliability Analysis

Construct	Items	Cronbach's Alpha
Perceived Usefulness	4	0.886
Perceived Ease of Use	4	0.908
Attitude toward Use	4	0.920
Actual System Use	4	0.903
Internal Control System Quality	20	0.977

As reported in Table 5, exploratory factor analysis (EFA) using Principal Axis Factoring with Direct Oblimin rotation produced a KMO of .962 and a significant Bartlett's test, $\chi^2(630)$ = 7,760.540, $p < .001$. Five factors with eigenvalues >1 explained 69.87% of the total variance. Factor loadings ranged from .694 to .907 and communalities from .623 to .794. The 20 COSO-based ICSQ items loaded on a single factor without substantial cross-loadings, supporting the use of an overall ICSQ composite. EFA was used to assess the factor structure of the adapted measures within the study context. Given the adaptation to technology-enabled internal control practices in Kaduna State MDAs, EFA provided an initial assessment of item structure. At the same time, CFA may be employed in future studies to confirm the measurement model using broader samples.

Table 5:
Validity Analysis

Test	Value
KMO Measure	0.962
Bartlett's χ^2	7760.540
Degrees of Freedom	630
Significance	<0.001

Total Variance Explained	69.87%
Factor Loading Range	0.694–0.907
Communality Range	0.623–0.794

Because all variables were collected from the same respondents using a single questionnaire, Harman's single-factor test was performed to assess the potential for common method bias. The unrotated factor solution indicated that the first factor accounted for 31.8% of the total variance, which is below the recommended threshold of 50% (Podsakoff et al., 2003). The result provides no indication that a single factor accounts for the majority of the variance, although common method bias cannot be completely excluded.

Multicollinearity among the independent variables was examined using Tolerance and the Variance Inflation Factor (VIF)**.** As shown in Table 6, tolerance values ranged from 0.834to 0.949, while VIF values ranged from 1.054 to 1.199. These values satisfy the recommended thresholds of Tolerance **>** 0.10 and VIF < 10**,** indicating that multicollinearity was not a concern (Hair et al., 2022).

Table 6:
Multicollinearity Diagnostics

Variable	Tolerance	VIF
Perceived Usefulness	0.932	1.074
Perceived Ease of Use	0.889	1.125
Attitude toward Use	0.834	1.199
Actual System Use	0.949	1.054

Overall, the preliminary analyses indicate that the data satisfy the assumptions required for multiple regression analysis. The dataset exhibited minimal missing data, no significant outliers, acceptable normality, satisfactory reliability and construct validity, no evidence of substantial common method bias, and no multicollinearity among the explanatory variables. Consequently, the data were considered appropriate for testing the study hypotheses.

Table 7 presents the descriptive statistics and Pearson correlation coefficients for the study variables. The mean scores ranged from 3.553 to 4.103, indicating that respondents' perceptions of the TAM constructs and ICSQ were generally close to the agree point of the five-point Likert scale. Standard deviations ranged from 0.535 to 0.587, indicating moderate variation in responses, while the minimum and maximum values demonstrate adequate response dispersion. The results show positive and statistically significant correlations between ICSQ and perceived usefulness ($r = 0.509$, $p < 0.01$), perceived ease of use ($r = 0.504$, $p < 0.01$), attitude toward use ($r = 0.543$, $p < 0.01$), and actual system use ($r = 0.175$, $p < 0.01$). Thus, higher scores on the TAM constructs were associated with higher ICSQ.

Table 7:
Descriptive Statistics and Pearson Correlation Matrix (N = 247)

Variable	Mean	SD	Min	Max	PU	PEU	ATU	ASU	ICSQ
PU	4.103	0.568	2.75	5.00	1.000				
PEU	4.053	0.557	2.75	5.00	0.170**	1.000			
ATU	4.063	0.587	2.25	5.00	0.242**	0.315**	1.000		
ASU	3.553	0.572	2.00	5.00	0.066	0.120*	0.219**	1.000	
ICSQ	4.072	0.535	2.20	5.00	0.509**	0.504**	0.543**	0.175**	1.000

Notes:***p*< 0.01; **p*< 0.05 (one-tailed). **PU** = Perceived Usefulness; **PEU** = Perceived Ease of Use; **ATU** = Attitude Toward Use; **ASU** = Actual System Use; **ICSQ** = Internal Control System Quality.

Regression Analysis and Hypothesis Testing

Multiple linear regression analysis was performed to examine the influence of the TAM constructs on ICSQ. As shown in Table 8, the regression model is statistically significant ($F = 72.571$, $p < .001$), indicating that the four explanatory variables jointly explain significant variation in ICSQ. The model produced an R^2 of .545, suggesting that approximately 54.5% of the variation in ICSQ is explained by perceived usefulness, perceived ease of use, attitude toward use, and actual system use. The remaining variation may reflect organizational, governance, institutional, training, system-quality, and other factors outside the present model.

Table 8:
Model Summary

Model statistic	Value
R^2	0.545
Adjusted R^2	0.537
F(4, 242)	72.571
p-value	< .001
N	247

Dependent Variable: Internal Control System Quality (ICSQ).

Table 9 presents the regression coefficients and hypothesis testing results. Perceived usefulness exerted the strongest positive influence on ICSQ **(**$\beta = 0.368$, $t = 8.190$, $p < 0.001$**)**, followed by perceived ease of use **(**$\beta = 0.329$**,** $t = 7.156$**,** $p < 0.001$) and attitude toward use **(**$\beta = 0.347$**,** $t = 7.214$**,** $p < 0.001$). These findings support H1**,** H2, and H3, respectively. Conversely, actual system use exhibited a positive influence but was statistically insignificant **(**$\beta = 0.036$, $t = 0.814$**,** $p = 0.417$). Accordingly, H4was not supported.

Table 9:
Regression Results and Hypothesis Testing

Hypothesis	Predictor	β-value	t-value	p-value	Decision
H1	Perceived Usefulness	**0.368**	**8.190**	0.000	Supported
H2	Perceived Ease of Use	0.329	7.156	0.000	Supported
H3	Attitude toward Use	0.347	7.214	0.000	Supported
H4	Actual System Use	0.036	0.814	0.417	Not Supported

Dependent Variable: Internal Control System Quality (ICSQ).

Overall, perceived usefulness was the strongest predictor of ICSQ, followed by attitude toward use and perceived ease of use, whereas actual system use had a positive but statistically insignificant effect.

5.0 Discussion

The findings demonstrate that technology acceptance is an important determinant of ICSQ in Kaduna State MDAs, although its influence varies across the TAM constructs. Perceived usefulness, perceived ease of use, and attitude toward use have significant positive effects on ICSQ, whereas actual system use has a positive but statistically insignificant effect. Overall, the findings indicate that the contribution of technology to internal control quality depends not only on whether systems are used, but also on users' perceptions of their usefulness, ease of use, and overall attitudes toward the technology.

Perceived Usefulness and ICSQ

The significant positive effect of perceived usefulness supports H1 and is consistent with the central proposition of TAM that users are more likely to accept technologies they perceive as improving their work performance (Davis, 1989; Venkatesh & Davis, 2000). The finding indicates that when employees perceive digital financial management systems as useful for improving efficiency, information quality, monitoring, and work performance, their utilization is more likely to contribute to stronger internal controls. This result is consistent with previous evidence linking perceived usefulness with technology acceptance and effective use in organizational settings (King & He, 2006; Tetik et al., 2024; Musa et al., 2024).

The finding also extends this evidence to the internal control context. Technology may strengthen control activities, information and communication, and monitoring only when users recognize its practical value and incorporate it into their routine responsibilities. Thus, the result suggests that investments in digital financial systems should be accompanied by efforts to demonstrate their practical benefits to employees rather than focusing solely on system availability.

Perceived Ease of Use and ICSQ

The significant positive effect of perceived ease of use supports H2. It reinforces the TAM proposition that systems perceived as requiring less effort are more likely to be accepted and effectively utilized. The finding suggests that user-friendly systems facilitate employees' interaction with digital financial processes and may consequently improve the execution and monitoring of internal controls. This is consistent with previous TAM evidence showing that perceived ease of use contributes to technology acceptance and sustained system utilization (Venkatesh & Davis, 2000; King & He, 2006).

In the context of Kaduna State MDAs, the result has particular relevance because complex digital systems may discourage effective use or encourage reliance on manual procedures. Ease of use therefore appears to be an important condition for translating technological investment into improvements in ICSQ. The finding supports the need for systems that are intuitive, accessible, and appropriately aligned with users' operational requirements.

Attitude Toward Use and ICSQ

The significant positive effect of attitude toward use provides support for H3. The finding indicates that employees' favourable attitudes toward technology are associated with stronger ICSQ. Consistent with TAM and related behavioural acceptance literature, positive attitudes can encourage continued engagement with technology and more consistent adherence to technology-enabled procedures (Davis et al., 1989; Venkatesh & Davis, 2000).

The result is particularly important in public sector organizations where technology implementation may involve changes to established accounting and administrative routines. Even technically capable systems may not produce the intended control benefits if employees perceive them negatively or are reluctant to incorporate them into their daily activities. The finding therefore suggests that successful digital transformation requires attention to behavioural and organizational factors alongside technological infrastructure.

Actual System Use and ICSQ

Contrary to H4, actual system use has a positive but statistically insignificant effect on ICSQ. Although the relationship is positive, the absence of statistical significance indicates that frequent system use alone does not necessarily translate into higher-quality internal controls.

This finding qualifies the assumption that increased technology utilization automatically improves control effectiveness.

A possible explanation is that actual use may reflect frequency of interaction with a system without necessarily indicating effective, competent, or control-oriented use. Employees may use digital systems because their tasks require it while continuing to depend on manual procedures, workarounds, or established practices. The control benefits of system use may also depend on training, management support, system quality, and integration with control procedures. Thus, the quality and purpose of technology use may be more important than usage frequency alone.

This finding does not necessarily contradict TAM because TAM primarily explains technology acceptance and use. In contrast, the present study examines actual system use as a predictor of an organizational outcome, ICSQ. In this context, actual use may not directly translate into improved control quality unless accompanied by effective use, user competence, favourable attitudes, and appropriate organizational support.

Theoretical, Practical and Policy Implications

The findings extend the application of TAM beyond conventional technology adoption outcomes by demonstrating its relevance to ICSQ. The significant effects of perceived usefulness, perceived ease of use, and attitude toward use indicate that employees' perceptions and attitudes toward technology are important for strengthening technology-enabled internal controls. In contrast, the insignificant effect of actual system use suggests that technology utilization alone may not translate into improved control quality. Integrating TAM with the COSO Internal Control Framework therefore provides a broader explanation of ICSQ by linking user acceptance with organizational control processes. The EFA finding that the 20 COSO-based items loaded on a single factor further supports the use of an overall ICSQ construct. These findings suggest that digital transformation should move beyond technology acquisition towards meaningful and effective use.

Practically, government should complement investments in digital financial management systems with continuous user training, change management, management support, and user-centred system design. Capacity development should cover digital financial management, AIS, ERP, IFMIS, cybersecurity, and technology-enabled internal controls, while organizations should minimize parallel manual processes and encourage effective use of approved systems. Accountants and internal auditors should integrate digital systems into financial management, monitoring, risk assessment, reconciliation, and audit activities. At the same time, ICT managers should prioritise usability, system integration, technical support, automated controls, and timely system upgrades. Policymakers should strengthen implementation, monitoring, and accountability mechanisms to ensure that technology investments translate into improved ICSQ and public financial management. Overall, the findings demonstrate that effective digital transformation requires not only technology but also user acceptance, competence, management commitment, and institutional support.

Conclusion

This study examined the effects of perceived usefulness, perceived ease of use, attitude toward use, and actual system use on ICSQ in Kaduna State MDAs. The findings indicate that perceived usefulness, perceived ease of use, and attitude toward use are significantly and positively associated with ICSQ. In contrast, actual system use has a positive but statistically insignificant association. Given the cross-sectional design, these findings should be interpreted as statistical associations rather than evidence that changes in user perceptions or attitudes will necessarily improve internal control quality.

The study contributes by extending TAM beyond conventional technology adoption outcomes and integrating it with the COSO framework to explain ICSQ in the public-sector context. The findings demonstrate that technology alone does not guarantee effective internal controls; user perceptions, attitudes, competence, and organizational support are equally important**.**

Limitations and Future Research

The study is limited by its cross-sectional design, reliance on self-reported data, and focus on Kaduna State MDAs**,** which may constrain causal inference and generalizability. Future studies could employ longitudinal and mixed-method approaches and examine multiple states or levels of government.

Finally, the study examined only the direct effects of TAM constructs on overall ICSQ, treated empirically as a composite variable based on the five COSO components. Future research could employ PLS-SEM to examine the dimensionality and higher-order structure of ICSQ while simultaneously assessing measurement and structural relationships. Future studies could also examine contextual factors such as organizational support, management commitment, digital competence, organizational culture, training, facilitating conditions, and information systems quality, while complementing perceived ICSQ with independent audit, compliance, or control-effectiveness indicators.

Reference

Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behavior and Human Decision Processes, 50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Alshaiti, H. (2023). Influences of internal control on enterprise performance: Does an information system make a difference? *Journal of Risk and Financial Management, 16*(12), 518. https://doi.org/10.3390/jrfm16120518

Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. *Human Relations, 61*(8), 1139–1160. https://doi.org/10.1177/0018726708094863

Chang, S. I., Yen, D. C., Chang, I. C., & Jan, D. (2014). Internal control framework for a compliant ERP system. *Information & Management, 51*(2), 187–205. https://doi.org/10.1016/j.im.2013.11.002

Committee of Sponsoring Organizations of the Treadway Commission. (2013). *Internal control-Integrated framework*. COSO.

Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). Sage Publications.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–340. https://doi.org/10.2307/249008

Davis, F. D. (1993). User acceptance of information technology: System characteristics, user perceptions and behavioral impacts. *International Journal of Man-Machine Studies, 38*(3), 475–487. https://doi.org/10.1006/imms.1993.1022

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science, 35*(8), 982–1003. https://doi.org/10.1287/mnsc.35.8.982

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behaviour: An introduction to theory and research*. Addison-Wesley Publishing Company.

Giannopoulos, V., Lymperopoulos, A., Kariofyllas, S., & Kariofyllas, C. (2025). Determinants of internal control system effectiveness: Evidence from Greek listed companies. *Risks, 13*(11), 219. https://doi.org/10.3390/risks13110219

Gil-Fernández, R., & Calderón-Garrido, D. (2026). How is technology accepted in the classroom? Exploring the use of TAM in educational research: Aims, methodologies, challenges and key findings. A systematic review. *Digital Education Review, 48*, 251–268. https://doi.org/10.1344/der.2026.48.251-268

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2022). *Multivariate data analysis* (9th ed.). Cengage Learning.

Henk, O. (2020). Internal control through the lens of institutional work: A systematic literature review. *Journal of Management Control, 31*(3), 239–273.

International Monetary Fund (IMF). (2024). *Nigeria: 2024 Article IV Consultation-Staff Report*. International Monetary Fund.

Isiaku, L., & Adalier, A. (2024). Determinants of business intelligence systems adoption in Nigerian banks: The role of perceived usefulness and ease of use. *Management Decision*. https://doi.org/10.1177/02666669241307024 (Sage Journals)

Kaduna State Government (2018). *Kaduna State digital strategy*. Kaduna State Government.

King, W. R., & He, J. (2006). A meta-analysis of the Technology Acceptance Model. *Information & Management, 43*(6), 740–755. https://doi.org/10.1016/j.im.2006.05.003

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*(3), 607–610. https://doi.org/10.1177/001316447003000308

Marangunić, N., & Granić, A. (2015). Technology Acceptance Model: A literature review from 1986 to 2013. *Universal Access in the Information Society, 14*(1), 81–95. https://doi.org/10.1007/s10209-014-0348-1

Muhammad, A. K., Auwal, M. K., & Salisu, U. (2025). Determinants of accounting information system adoption in Nigerian SMEs. *UMYU Journal of Accounting and Finance Research, 8*(1), 432–457. https://doi.org/10.61143/umyu-jafr.8(1)2025.028

Musa, H. G., Fatmawati, I., Nuryakin, N., & Suyanto, M. (2024). Marketing research trends using Technology Acceptance Model (TAM): A comprehensive review of research (2002–2022). *Cogent Business & Management, 11*(1), 2329375. https://doi.org/10.1080/23311975.2024.2329375

Odia, J. O., & Alegbe, J. J. (2024). Information and communications technology and effective tax administration in Nigeria: An examination of the Technology Acceptance Model. *Journal of Taxation and Economic Development, 23*(2), 20–52. https://doi.org/10.5281/zenodo.15647588

Olumoh, Y. A. (2024). Accounting information systems, internal control mechanisms and performance of government agencies in Kwara State, Nigeria. *POLAC Management Review, 4*(1), 173–184.

Organisation for Economic Co-operation and Development. (2021). *Government at a glance 2021*. OECD Publishing.

Oyedokun, G. E., Babatunde, A. O., Kennedy, I. C., & Alagbe, N. A. (2025). Enhancing internal control and fraud detection in small and medium enterprises through digital

technology adoption: Empirical evidence from Nigeria. *AFAR Multidisciplinary Journal of Management Sciences, 8*(2), 122–143. https://doi.org/10.5281/zenodo.19148107

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioural research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Public Expenditure and Financial Accountability (PEFA). (2019). Nigeria Public Expenditure and Financial Accountability (PEFA) Assessment Report. PEFA Secretariat.

Rizza, C., & Ruggeri, D. (2025). The entangled relationships between accounting information systems innovations and corporate governance dynamics: A performative perspective. *Journal of Management and Governance*. Advance online publication. https://doi.org/10.1007/s10997-025-09762-y

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.

Romney, M. B., & Steinbart, P. J. (2021). *Accounting information systems* (15th ed.). Pearson.

Saunders, M., Lewis, P., & Thornhill, A. (2023). *Research methods for business students* (9th ed.). Pearson.

Scherer, R., Siddiq, F., & Tondeur, J. (2019). The Technology Acceptance Model (TAM): A meta-analytic structural equation modelling approach to explaining teachers' adoption of digital technology. *Computers & Education, 128*, 13–35. https://doi.org/10.1016/j.compedu.2018.09.009

Szajna, B. (1996). Empirical evaluation of the revised Technology Acceptance Model. *Management Science, 42*(1), 85–92. https://doi.org/10.1287/mnsc.42.1.85

Tabachnick, B. G., & Fidell, L. S. (2019). *Using multivariate statistics* (7th ed.). Pearson.

Tetik, G., Türkeli, S., Pinar, S., & Tarim, M. (2024). Health information systems with Technology Acceptance Model approach: A systematic review. *International Journal of Medical Informatics, 190*, 105–127. https://doi.org/10.1016/j.ijmedinf.2024.105556

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science, 46*(2), 186–204. https://doi.org/10.1287/mnsc.46.2.186.11926

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425–478. https://doi.org/10.2307/30036540

Wang, L. (2019). Research on internal control construction system of energy-based enterprises based on COSO and financial quality. *IOP Conference Series: Earth and Environmental Science, 252*(3), Article 032062. https://doi.org/10.1088/17551315/252/3/032062

World Bank (2021, March 5). *GovTech in Kaduna: Responsive and empowered governments*. World Bank Blogs.

World Bank. (2022). *Enhancing government effectiveness and transparency: The fight against corruption*. World Bank.

World Bank. (2022). *World Development Report 2022: Finance for an equitable recovery*. World Bank.

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