

Integrating Technology Acceptance, Agency, and Systems Theories to Explain Digital Accounting's Impact on Financial Reporting Quality: A Mixed-Methods Study of Nigerian SMEs

Adeosun Akinwunmi Akande; Iornem Kohol; Michael A. Senkoya

Network Institute for Research and Data Analytics, Lagos, Nigeria

DOI: <https://doi.org/10.47772/IJRISS.2026.100900639>

Received: 26 September 2026; Accepted: 01 October 2026; Published: 19 October 2026

ABSTRACT

Purpose: This study integrates the Technology Acceptance Model (TAM), Agency Theory, and Systems Theory to examine how digital accounting system adoption relates to financial reporting quality in small and medium-sized enterprises (SMEs), with internal control effectiveness specified as a mediating mechanism. The study also develops three theory-informed propositions from the combined quantitative and qualitative evidence.

Design/methodology/approach: An explanatory sequential mixed-methods design was used. Quantitative data were obtained from 207 SME respondents in Lagos State, Nigeria. Of 480 questionnaires targeted, 230 were returned and 23 were excluded because of incompleteness or non-qualification, leaving 207 usable responses and an adjusted response rate of 43.1%. Mediation was examined using Hayes' PROCESS Macro Model 4 with 5,000 bootstrap resamples. Thirteen survey participants were subsequently interviewed purposively, and the interviews were analysed thematically using Braun and Clarke's six-phase approach.

Findings: The quantitative analysis found no significant total effect of digital accounting system adoption on financial reporting quality ($B = 0.031$, $p = 0.673$) and no significant effect on internal control effectiveness ($B = 0.029$, $p = 0.683$). Internal control effectiveness was negatively associated with self-reported financial reporting quality ($B = -0.159$, $p = 0.028$). The full-sample indirect effect was not significant ($B = -0.0046$, 95% CI $[-0.0334, 0.0155]$). An exploratory comparison among digital-system users found 68 basic-use respondents who reported Excel use and 118 more-extensive-use respondents who reported dedicated accounting software. The latter group reported higher ICE and FRQ, and the exploratory mediation effect was significant (indirect effect = 0.084, 95% CI $[0.021, 0.157]$). This subgroup analysis was not a formal test of moderated mediation and was not treated as confirmatory evidence. Qualitative findings consistently described audit trails, segregation of duties, approval workflows, and other controls as mechanisms through which participants perceived reporting improvements.

Originality/value: The study does not claim that the three established theories are empirically extended by the present data. Instead, it develops three provisional refinements for future testing: distinguishing operational usefulness from control usefulness in TAM; treating the negative ICE - FRQ association as a possible critical self-assessment or measurement phenomenon rather than established 'suppressed reporting'; and specifying affordance actualisation as a possible condition for productive interaction between technology and control subsystems.

Keywords: Technology Acceptance Model; Agency Theory; Systems Theory; digital accounting; internal control effectiveness; financial reporting quality; SMEs; Nigeria; mixed methods

INTRODUCTION

Digital accounting systems are increasingly used by small and medium-sized enterprises (SMEs), yet adoption does not necessarily produce better organisational outcomes. Prior accounting research shows that information technologies can support accounting processes, while the value obtained from those

technologies depends on how they are implemented and used (Moll & Yigitbasioglu, 2019). The theoretical literature remains fragmented because technology acceptance, agency relationships, and organisational systems are often examined separately.

This fragmentation matters in SMEs. Owners and managers may adopt accounting technology because it improves transaction processing, invoicing, or record keeping. These operational benefits, however, do not guarantee that audit trails, access restrictions, approval workflows, reconciliations, or other control capabilities are configured and used. The distinction between acquiring technology and using its control capabilities therefore deserves closer attention.

Three theoretical perspectives are particularly relevant. TAM explains behavioural beliefs surrounding technology acceptance (Davis, 1989; Venkatesh & Davis, 2000). Agency Theory explains why monitoring, controls, and financial reporting are important when interests and information are not perfectly aligned (Jensen & Meckling, 1976). Systems Theory explains organisations as interacting systems whose outputs depend on relationships among their subsystems (von Bertalanffy, 1968). Used together, these perspectives provide a useful framework for examining why digital accounting adoption may or may not translate into reporting outcomes.

This study addresses that issue through an explanatory sequential mixed-methods investigation of SMEs in Lagos State, Nigeria. The quantitative phase tests a simple mediation model in which internal control effectiveness (ICE) mediates the relationship between digital accounting system adoption (DASA) and financial reporting quality (FRQ). The qualitative phase then explores how participants understand the mechanisms behind the quantitative findings.

The study makes a deliberately cautious theoretical contribution. It does not claim that combining established theories automatically constitutes a new theory. Instead, the empirical findings motivate three propositions for future testing. First, perceived usefulness in digital accounting may have an operational dimension and a control dimension. Second, the negative association between ICE and self-reported FRQ may reflect a critical self-assessment process, reverse causality, measurement artefacts, or other omitted explanations. Third, the value of technology and control subsystems may depend on whether relevant technological affordances are actually used.

The remainder of the paper reviews the three theoretical perspectives, presents the integrated framework and propositions, describes the mixed-methods study, reports the quantitative and qualitative evidence, and discusses the implications and limitations.

THEORETICAL FOUNDATIONS

Technology Acceptance Model

TAM explains technology acceptance through beliefs such as perceived usefulness and perceived ease of use (Davis, 1989). Later developments retained these core ideas while expanding the model to account for additional determinants and usage contexts (Venkatesh & Davis, 2000). In accounting research, TAM is useful for explaining why users accept accounting technologies, but it is less explicit about how different forms of use generate organisational outcomes.

Grande et al. (2011) examined accounting information systems in Spanish SMEs and focused on relationships between AIS use, performance indicators, and productivity. The study is therefore relevant to the broader value of accounting systems, but it should not be presented as evidence for particular TAM coefficients or as a study of financial reporting quality. The present study uses TAM more narrowly to explain adoption beliefs and to motivate a distinction between operational and control-related usefulness.

The central limitation for the present study is that adoption beliefs and actual system use are conceptually different. Perceived usefulness and perceived ease of use are normally antecedents of acceptance, whereas

extent and depth of use describe behaviour. Treating them as a single reflective adoption construct can therefore obscure how particular features are used.

Agency Theory

Agency Theory explains relationships in which principals delegate responsibilities to agents while facing information asymmetry and potentially divergent interests (Jensen & Meckling, 1976). Monitoring and control mechanisms can reduce opportunities for opportunistic behaviour and improve the information available to decision makers.

The theory is relevant to SME financial reporting because internal controls can constrain unauthorised transactions, strengthen accountability, and reduce opportunities for manipulation. However, the present study measures FRQ through respondent perceptions rather than independent audit evidence. Consequently, the relationship between ICE and reported FRQ cannot automatically be interpreted as the relationship between controls and objective reporting quality.

The negative ICE - FRQ association observed in the data is therefore treated as an empirical anomaly requiring competing explanations. It may reflect greater awareness among respondents with stronger controls, reverse causality, coding or measurement problems, common-method effects, or omitted variables. The term 'suppressed reporting' is retained only as a provisional theoretical possibility and is not presented as an established mechanism.

Systems Theory

Systems Theory conceptualises organisations as open systems consisting of interacting components (von Bertalanffy, 1968). Accounting information systems similarly depend on interactions among transaction processing, reporting processes, people, procedures, and controls (Romney & Steinbart, 2018). The framework is useful because a digital accounting application can exist without being configured to support the control processes needed for reliable reporting.

The systems perspective therefore shifts attention from technology presence to interaction. A digital system can generate invoices and reports efficiently while leaving approval, access, reconciliation, or audit-trail capabilities unused. The outcome depends partly on whether the relevant capabilities are incorporated into organisational routines.

Integration of the Three Perspectives

The three theories address complementary questions. TAM addresses why users accept technology. Agency Theory addresses why controls and monitoring matter. Systems Theory addresses how technological and organisational components interact. The integrated framework therefore treats DASA as the technology-side construct, ICE as the principal control mechanism, and FRQ as the organisational reporting outcome. The integration is explanatory rather than additive. The study does not claim that the combination itself proves a theoretical extension. Rather, the quantitative and qualitative findings identify areas where the established theories may require more precise operationalisation in digital accounting contexts.

Integrated Theoretical Framework and Propositions

Framework Overview

The proposed framework specifies DASA as the predictor, ICE as the mediator, and FRQ as the outcome. TAM provides the behavioural foundation for DASA. Systems Theory provides the interaction logic between the technology and control subsystems. Agency Theory provides the incentive and monitoring logic connecting internal controls with reporting.

The empirical model is intentionally simple: $DASA \rightarrow ICE \rightarrow FRQ$, with a direct $DASA \rightarrow FRQ$ path. The qualitative phase is used to explain why this statistical model may produce weak or divergent results.

Proposition A: Operational and Control Usefulness

Digital accounting systems can be useful for operational tasks such as transaction entry, invoicing, calculation, and report generation. They can also be useful for control tasks such as maintaining audit trails, enforcing approval limits, restricting user access, and supporting segregation of duties. These functions are related but not necessarily perceived in the same way by users.

Proposition 1: Perceived usefulness of digital accounting systems may comprise distinguishable operational-usefulness and control-usefulness dimensions.

Proposition 2: Control usefulness may be associated with the activation and routine use of control-related system capabilities.

These propositions are post-hoc theoretical refinements. The original survey did not contain a separate validated control-usefulness scale. The present data therefore cannot establish the propositions statistically.

Proposition B: Critical Self-Assessment as a Possible Explanation

The quantitative analysis produced a significant negative association between ICE and self-reported FRQ. This direction is inconsistent with the conventional expectation that effective controls should support better reporting. One possible explanation is that respondents with stronger controls have greater visibility of deficiencies and therefore provide more critical assessments.

Proposition 3: The association between internal control effectiveness and self-reported financial reporting quality may differ from the association between internal control effectiveness and objectively assessed reporting quality.

This proposition should not be confused with evidence that controls suppress reporting manipulation. Competing explanations include reverse causality, greater expertise, common-method bias, measurement error, and omitted variables. Future research should compare self-reported FRQ with audit adjustments, restatements, external assessments, or other independent indicators.

Proposition C: Affordance Actualisation

Systems Theory explains interaction among subsystems but does not by itself identify the conditions under which technological capabilities are translated into organisational routines. Affordance Actualization Theory distinguishes between the action possibilities offered by technology and their actualisation through use (Strong et al., 2014). Effective-use research similarly distinguishes system use from use that actually achieves organisational goals (Burton-Jones & Grange, 2013).

Proposition 4: The contribution of digital accounting systems to internal control and reporting may depend on the actualisation of relevant control affordances. This proposition provides a more cautious explanation of shallow adoption. A firm may use an accounting system frequently while leaving important control features dormant. The present study can provide suggestive evidence for this proposition, but it cannot establish a causal moderation or moderated-mediation effect.

Framework Summary

Theory	Role in the framework	Observed limitation	Provisional refinement
TAM	Explains adoption beliefs and acceptance.	Does not distinguish operational benefits from control-related use.	Operational usefulness and control usefulness.
Agency Theory	Explains monitoring, information asymmetry and the role of controls.	Self-reported FRQ may not represent objective reporting quality.	Critical self-assessment / possible divergence between reported and objective quality.
Systems Theory	Explains interaction between technology and control subsystems.	Does not specify when technological capabilities become organisationally effective.	Affordance actualisation as a condition for productive interaction.

METHODOLOGY

Research Design

The study used an explanatory sequential mixed-methods design (QUAN → qual). The quantitative phase tested the hypothesised DASA - ICE - FRQ relationships. The qualitative phase followed the quantitative analysis and was used to explore participants' explanations of the observed results. Integration occurred through purposive selection of interview participants, joint display, and narrative interpretation.

Study Context and Population

The study was conducted among SMEs in Lagos State, Nigeria. The intended eligibility range was 10 - 199 employees. The sampling frame was based on registered SMEs and relevant business directories. The final dataset nevertheless contained a small proportion of micro-enterprises. This was acknowledged in the thesis as a sampling limitation and is retained here rather than being concealed.

Sample Size and Sampling

The study used Yamane's formula with an assumed population of approximately 350,000 SMEs and a 5% margin of error. The resulting minimum sample was approximately 400. This was increased by 20% to a target of 480 to allow for non-response and incomplete questionnaires.

A multi-stage approach was used for the quantitative phase. Sampling was stratified by location and sector, followed by selection from available SME directories and registration lists. The qualitative participants were purposively selected from survey respondents to provide variation in digital-system use, firm characteristics, and reporting experiences.

Data Collection and Response Rate

Questionnaires were administered online through Google Forms and in person. The collection period lasted five weeks. A total of 230 questionnaires were returned. Twenty-three were excluded because of incomplete responses to the principal constructs or because the respondent did not meet the study's qualification requirements. The final analytical sample was therefore 207, representing an adjusted response rate of 43.1% (207/480).

Thirteen participants were subsequently selected for semi-structured interviews. Interviews lasted approximately 30 - 45 minutes, were audio-recorded with consent, transcribed verbatim, and anonymised using respondent codes. Saturation was reported after the thirteenth interview.

Measures and Scoring

DASA was measured using 15 Likert-scale items covering perceived usefulness, perceived ease of use, and extent of use. Responses used a five-point agreement scale from 1 = strongly disagree to 5 = strongly agree. For the quantitative analysis, item scores were aggregated to form the DASA construct. The study recognises that PU and PEOU are normally antecedent beliefs in TAM and that their inclusion within a broader adoption score is a measurement limitation.

ICE was measured using 25 items aligned with the five COSO internal-control components: control environment, risk assessment, control activities, information and communication, and monitoring. Items were scored on the same five-point scale and aggregated into an ICE score.

FRQ was measured using 18 items reflecting the IASB qualitative characteristics of relevance, faithful representation, comparability, verifiability, timeliness, and understandability. Items were scored on the five-point scale and aggregated into an FRQ score.

The questionnaire contained 58 Likert-scale items and eight demographic questions. The complete questionnaire and interview guide formed part of the doctoral research materials. For this manuscript, the principal scoring rules are reported so that the analytical constructs can be independently understood.

Validity, Reliability and Trustworthiness

Content validity was assessed by three experts, comprising two accounting academics and an experienced SME accountant. The reviewers assessed clarity, relevance, and comprehensiveness. The reported Content Validity Index was 0.92.

The revised study reports internal-consistency coefficients of Cronbach's $\alpha = 0.87$ for DASA, 0.91 for ICE, and 0.86 for FRQ. These values exceed the commonly used 0.70 threshold. The constructs were treated as scale scores for the regression and mediation analyses.

Construct validity was considered through the theoretical mapping of the items to TAM, COSO, and IASB dimensions. The original research protocol specified CFA assessment of convergent and discriminant validity. Because the retained thesis output does not provide a complete CFA results table, this manuscript does not report fit indices or factor loadings. This limitation is explicitly acknowledged.

Qualitative trustworthiness was addressed through purposive variation in participants, transcript verification, coded identifiers, comparison across interviews, and integration with the quantitative findings. Thematic analysis followed Braun and Clarke's six phases. The interpretation also considered contradictory or alternative explanations rather than treating qualitative agreement as statistical proof.

Quantitative Data Analysis

Quantitative analyses were conducted using SPSS and Hayes' PROCESS Macro. Descriptive statistics and Pearson correlations were first examined. The mediation model specified DASA as X, ICE as M, and FRQ as Y. PROCESS Model 4 was estimated with 5,000 bootstrap resamples. The indirect effect was considered statistically significant when its 95% bootstrap confidence interval excluded zero.

The thesis methodology specified firm size, years of operation, industry sector, owner's education, electricity reliability, and internet reliability as potential covariates. However, the retained SPSS/PROCESS output available for the reported main results is the unadjusted simple-regression/mediation output. The manuscript therefore reports the actual estimates rather than incorrectly describing them as covariate-adjusted. This distinction is important for reproducibility.

Qualitative Data Analysis and Integration

Interview transcripts were analysed using Braun and Clarke's six-phase thematic approach: familiarisation, initial coding, theme development, theme review, theme definition, and reporting. The qualitative phase was intended to explain the quantitative pattern, particularly the absence of a significant full-sample mediation effect and the unexpected negative ICE - FRQ association.

Integration was achieved through a joint display and narrative synthesis. Qualitative statements were treated as participant-reported experiences. They were not treated as independent external validation because the study did not independently examine auditors' working papers, bank records, or other external evidence.

RESULTS

Response and Respondent Profile

Of the 480 questionnaires targeted, 230 were returned and 207 were retained. The final sample comprised 118 males (57.0%) and 89 females (43.0%). Respondents aged 25 - 34 years represented 36.2%, while those aged 35 - 44 represented 33.8%. Bachelor's degree holders represented 48.3% and master's degree holders

21.7%. Accountants represented 31.4% of respondents, managers 30.0%, finance officers 20.3%, and owners 14.5%.

Characteristic	Category	n	%
Gender	Male	118	57.0
	Female	89	43.0
Age	Below 25	29	14.0
	25 - 34	75	36.2
	35 - 44	70	33.8
	45 and above	33	15.9
Education	Secondary	15	7.2
	Diploma	40	19.3
	Bachelor's	100	48.3
	Master's	45	21.7
	Other	7	3.4
Position	Owner	30	14.5
	Manager	62	30.0
	Accountant	65	31.4
	Finance officer	42	20.3
	Other	8	3.9

Descriptive Statistics and Correlations

Variable	Mean	SD	Minimum	Maximum	Skewness	Kurtosis
DASA	3.8593	0.3504	2.80	4.67	-0.412	0.023
ICE	3.8925	0.3532	2.96	4.76	-0.287	-0.115
FRQ	3.9577	0.3685	2.83	4.83	-0.513	0.188

The three constructs had means above the midpoint of 3.0. The relatively small standard deviations indicate limited dispersion in the self-reported scores. Pearson correlations showed no significant association between DASA and ICE ($r = 0.029$, $p = 0.683$) and no significant association between DASA and FRQ ($r = 0.029$, $p = 0.673$). ICE was negatively associated with FRQ ($r = -0.153$, $p = 0.028$).

Variable	DASA	ICE	FRQ
DASA	1.000	0.029 ($p=.683$)	0.029 ($p=.673$)
ICE	0.029 ($p=.683$)	1.000	-0.153 ($p=.028$)
FRQ	0.029 ($p=.673$)	-0.153 ($p=.028$)	1.000

Mediation Analysis

Effect	B	SE	t	p	95% CI
Path a: DASA → ICE	0.0288	0.0704	0.4094	0.6827	[-0.1099, 0.1676]
Path b: ICE → FRQ	-0.1604	0.0722	-2.2225	0.0273	[-0.3027, -0.0181]
Direct effect c': DASA → FRQ	0.0356	0.0728	0.4899	0.6248	[-0.1078, 0.1791]
Total effect c: DASA → FRQ	0.0310	0.0734	0.4225	0.6731	[-0.1137, 0.1758]
Indirect effect a × b	-0.0046	0.0119	—	—	[-0.0334, 0.0155]

The total effect of DASA on FRQ was not significant. Path a was also not significant. Path b was statistically significant but negative. Most importantly, the bootstrap confidence interval for the indirect effect included zero. The full-sample quantitative evidence therefore does not support mediation.

The result is important because it prevents the study from claiming statistical mediation simply because the qualitative participants described a mechanism. The qualitative findings are used to interpret the quantitative result, not to replace the statistical test.

Exploratory Comparison of Basic and More Extensive Users

Among the 207 respondents, 186 (89.9%) reported using a digital accounting system. Within these users, 68 (36.6%) reported Excel and 118 (63.4%) reported dedicated accounting software, including QuickBooks, Sage, and other systems. For exploratory comparison, the Excel group was labelled basic use and the dedicated-software group more extensive use. This classification is based on reported software category; it does not prove that every dedicated-software user activated every available control feature.

Software category	n	% of users	Exploratory group
Excel	68	36.6	Basic use
QuickBooks	58	31.2	More extensive use
Sage	45	24.2	More extensive use
Other	15	8.1	More extensive use
Total	186	100.0	—

Outcome	Basic use (n=68)	More extensive use (n=118)	t	p
ICE	3.71 (0.38)	3.99 (0.31)	5.42	<.001
FRQ	3.82 (0.41)	4.04 (0.32)	4.12	<.001

The more extensive-use group reported higher ICE and FRQ than the basic-use group. These are associations between software category and reported outcomes and should not be interpreted as causal effects.

An exploratory PROCESS Model 4 analysis restricted to the more extensive-use group produced an indirect effect of 0.084 with a 95% confidence interval of [0.021, 0.157]. This subgroup contained 118 respondents. The analysis was exploratory and was not preregistered. A significant indirect effect in one subgroup and a nonsignificant effect in another does not by itself demonstrate that the indirect effects differ statistically. A formal moderated-mediation test would be required for that claim.

Qualitative Findings

Thirteen interviews were analysed to explain the quantitative findings. Four connected themes were identified.

Theme 1: Operational use and perceived usefulness. Participants described digital accounting systems as useful for transaction processing, invoicing, calculations, and faster reporting. These accounts support the operational-usefulness component of the proposed TAM refinement. One participant explained: “The system helps us generate invoices faster. That was the main reason we bought it.”

Theme 2: Control capabilities and internal control. Participants described audit trails, user permissions, segregation of duties, approval workflows, and validation procedures as important control capabilities.

A participant stated: “Once we set up user permissions, everything changed. Junior staff cannot approve payments anymore. The system enforces the separation of duties.”

Another participant reported: “The audit trail is automatic. Every edit is logged. That discourages manipulation.”

Theme 3: Shallow use and barriers to deeper use. Participants described limited digital literacy, training costs, software costs, and lack of awareness of embedded features. These accounts provide contextual support for the idea that technology presence does not guarantee control-feature use.

One participant explained: “We only learned about the approval workflow feature after a consultant showed us. Before that, we were using the system like Excel.”

Theme 4: Perceived reporting improvements. Participants associated stronger controls with more accurate, timely, reliable, and consistent reports. These are participant-reported perceptions rather than independently verified outcomes.

A participant reported: “We now produce management accounts by the 5th working day of the next month, compared to the 15th before.”

Another participant stated: “Our external auditors have noted fewer adjustments during audits.” This statement is reported only as a participant account; the study did not independently inspect audit records. It is therefore described as participant-reported corroboration, not external validation.

Joint Display and Integration

Finding	Quantitative evidence	Qualitative evidence	Interpretation
DASA → FRQ	Not significant; $B=0.031$, $p=.673$	Participants described operational and reporting benefits.	Adoption alone may be insufficient; depth and type of use may matter.
DASA → ICE	Not significant; $B=0.029$, $p=.683$	Participants described audit trails, permissions and approvals.	The aggregate DASA measure may not capture control-feature use.
ICE → FRQ	Significant negative association; $B=-0.159$, $p=.028$	Participants associated stronger controls with better reporting.	Possible measurement or self-assessment phenomenon; competing explanations remain.
DASA → ICE → FRQ	Indirect effect -0.0046 ; CI includes zero	Participants described a pathway through controls.	Qualitative accounts explain a perceived mechanism but do not establish statistical mediation.
User-group comparison	More extensive users reported higher ICE and FRQ; exploratory indirect effect $=.084$, CI $ [.021, .157]$	Participants described deeper use of control features.	Suggestive evidence requiring formal moderated-mediation testing.

DISCUSSION

Interpreting the Quantitative - Qualitative Divergence

The central result is a divergence between the full-sample statistical model and participant accounts. The quantitative analysis did not establish mediation. The interviews nevertheless described a coherent mechanism involving technology, internal controls, and reporting. This divergence should not be resolved by simply declaring the qualitative evidence more valid than the quantitative evidence.

One plausible explanation is measurement mismatch. DASA combined usefulness beliefs, ease of use, and extent of use, while the qualitative accounts focused strongly on control-feature activation. A respondent can therefore score highly on general adoption while using only a limited subset of system capabilities.

A second explanation concerns self-reported FRQ. Respondents with more developed controls may have greater visibility of reporting weaknesses and may therefore assess FRQ more critically. This interpretation is consistent with the negative ICE - FRQ coefficient, but it remains provisional.

A third explanation is the composition of the digital-user group. More than one-third of digital-system users reported Excel. The exploratory comparison indicates that software category was associated with differences in ICE and FRQ. However, software category is an imperfect proxy for depth of use and should not be treated as proof that control features were activated.

A fourth explanation is statistical power and measurement variance. The full-sample indirect effect was very small, and the relatively restricted distribution of the three self-reported constructs may have reduced the ability to detect small relationships. These possibilities motivate more precise measurement in future studies.

Theoretical Implications

For TAM, the findings suggest that perceived usefulness may need to be examined more closely in accounting settings. Operational usefulness and control usefulness may lead users toward different patterns of feature use. The present survey did not measure control usefulness separately, so this is a proposition rather than an empirical test.

For Agency Theory, the negative ICE - FRQ relationship should not be interpreted as evidence that stronger controls reduce actual reporting quality. Instead, the finding raises a measurement question: reported quality and objectively assessed quality may diverge. Objective indicators are needed to test this proposition.

For Systems Theory, the evidence reinforces the importance of interaction between technological and control components. Affordance actualisation offers a useful specification of when technological capabilities may become organisationally consequential. Again, the present data do not constitute a formal test of moderated mediation.

The combined contribution is therefore a more carefully bounded framework rather than a claim that three established theories have been conclusively extended. The propositions provide testable directions for subsequent research.

Practical Implications

For SME owners and managers, the findings suggest that purchasing or accessing accounting software is only one step. Relevant control capabilities should be configured, users should be trained, and approval and access rules should be incorporated into daily accounting routines.

For software vendors and consultants, implementation should include practical demonstrations of audit trails, role-based access, approval workflows, reconciliation tools, and other control features. Training focused only on transaction entry may encourage shallow use.

For policymakers and SME-support agencies, programme evaluation should distinguish software acquisition from effective use. Support packages may be more useful when software assistance is combined with training, configuration support, and monitoring of control practices.

Limitations

First, the quantitative design is cross-sectional and cannot establish temporal precedence or causal mediation. Second, DASA, ICE, and FRQ were self-reported, creating risks of common-method and social-desirability bias. Third, the study is confined to Lagos State and may not generalise to other Nigerian settings. Fourth, the intended eligibility range was 10 - 199 employees, but a small number of micro-enterprises were retained in the final dataset. Fifth, the DASA measure combined adoption beliefs and use and did not independently measure control-feature activation. Sixth, the subgroup analysis was exploratory and based on software category rather than a validated depth-of-use scale. Seventh, the main reported PROCESS output is unadjusted; the thesis methodology identified potential covariates, but the retained output does not provide complete covariate-adjusted estimates. Finally, qualitative reports of audit adjustments or lending outcomes were participant accounts rather than independently verified records.

CONCLUSION

This study integrated TAM, Agency Theory, and Systems Theory to examine the relationship between digital accounting system adoption, internal control effectiveness, and financial reporting quality among Nigerian SMEs. The full-sample quantitative analysis did not support the proposed mediation model. DASA was not significantly related to ICE or FRQ, while ICE showed a significant negative association with self-reported FRQ.

The qualitative evidence provided a different perspective. Participants consistently described how digital accounting systems can strengthen controls through audit trails, access restrictions, approval workflows, and other capabilities, and how these controls can support more accurate and timely reporting. The exploratory comparison between basic and more extensive users also showed meaningful differences, although these results cannot establish causality or formal moderated mediation.

The main contribution is therefore not a claim that adoption automatically improves reporting. Rather, the findings point to the importance of how technology is used. Future research should separate adoption beliefs from actual use, measure control-feature activation directly, test objective reporting-quality indicators, and formally examine whether adoption depth moderates the DASA - ICE - FRQ pathway. The study consequently offers a cautious theoretical framework for future research: technology acceptance may explain entry into digital accounting, agency mechanisms may explain the importance of controls, and systems and affordance perspectives may explain why benefits emerge only when relevant capabilities become part of organisational practice.

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Appendix A. Measurement and Scoring Summary

Construct	Items	Basis	Scoring
DASA	15	TAM-related perceived usefulness, perceived ease of use and extent of use	Five-point Likert; item scores aggregated
ICE	25	COSO five components	Five-point Likert; item scores aggregated
FRQ	18	IASB qualitative characteristics	Five-point Likert; item scores aggregated

The complete questionnaire and interview guide were included in the doctoral research materials. The present manuscript reports the item counts and scoring rules needed to understand the analyses. The separate control-usefulness construct was not measured in the original survey and was not reconstructed from existing data.