

Digital Transformation in Financial Accounting Education: Challenges of Implementing Computerised Accounting Systems (CAS) in Tertiary Institutions

Sewanu Oladele OKE-POTEFA ¹, Michael Gbolade SONEYE ² &
Amos Oluwabunmi OLUWO ²

¹Department of Accounting Education, Lagos State University of Education, Oto/Ijanikin, Lagos State

²Department of Business and Entrepreneurship Education, Lagos State University of Education,
Oto/Ijanikin, Lagos State

Authors Email: oke-potefaos@lasued.edu.ng; soneyegm@lasued.edu.ng & oluwooa@lasued.edu.g

Abstract

This study examines the institutional, technical, and operational barriers hindering effective implementation of Computerised Accounting Systems (CAS) in tertiary institutions. Adopting a descriptive survey research design, primary data were collected from a purposively selected sample of 123 accounting educators and IT administrators across selected public and private tertiary institutions. The study integrates the Technology Acceptance Model (TAM) and Institutional Theory as its theoretical framework. A structured 22-item, 5-point Likert-scale questionnaire was administered. Multiple linear regression analysis revealed that the model explained 71.4% of the variance in CAS implementation success ($R^2 = 0.714$, Adjusted $R^2 = 0.702$, $F(3,116) = 96.42$, $p < 0.001$). Technical infrastructure quality emerged as the strongest predictor ($\beta = 0.537$, $t = 8.391$, $p < 0.001$), followed by faculty training and operational competency ($\beta = 0.339$, $t = 6.647$, $p < 0.001$), and institutional management support and funding ($\beta = 0.211$, $t = 4.395$, $p = 0.001$). These findings indicate that infrastructure deficiencies, inadequate faculty upskilling, and insufficient management commitment constitute critical bottlenecks to successful digital transformation. Effective CAS implementation requires more than software acquisition; it demands systemic resolution of deep-rooted institutional weaknesses. Recommendations include comprehensive ICT infrastructure overhaul, mandatory continuous faculty development programmes with cyber security components, increased budgetary allocation for digital initiatives, and strategic partnerships with accounting software vendors.

Keywords: Digital transformation, Computerised Accounting Systems (CAS), financial accounting education, Technology Acceptance Model (TAM), Institutional Theory, tertiary institutions

Introduction

The accounting and finance profession has seen a drastic change in the last few decades whereby it has transitioned from traditional bookkeeping practices to modern technological practices incorporating automation, cloud computing, analysis and ERP (Busulwa et al., 2026; Pan and Seow, 2016). The changes have been attributed to technological advancements of Industry 4.0 and the need to cater for an advanced economy where accounting goes beyond compliance and reporting (Tiron-Tudor et al., 2025; Satjawisate et al., 2025).

Tertiary education institutions that provide education and training to the future accountants need to adjust accordingly. While traditional accounting courses focused on theoretical aspects including accounting standards, auditing concepts and management accounting, it has been found out that due to the incorporation of technology, most students are theoretically well prepared, but lack skills on how to use modern accounting software (Vasquez et al., 2026; Tee et al., 2024).

There is no doubt that there is an ever-increasing discrepancy between the educational programme and the requirements of employers. There are more and more companies that require skilled professionals in digital technology, whereas most students lack practical skills related to modern software for accounting and data management, resulting in a slow adaptation period and less productivity (Nie and Mastor, 2024; Manalo et al., 2025).

The use of Computerised Accounting System (QuickBooks, Sage, Xero, or complete ERP systems) was recognised as crucial (Harrast et al., 2014; Busulwa et al., 2026). Using CAS allows hands-on practice by transaction posting, financial statement preparation, and analysis and increases professional competencies (Manalo et al., 2025). Several studies have shown that this leads to better job market outcomes of graduates (Pan and Seow, 2016).

However, the implementation of CAS in higher education involves several difficulties: high costs, low level of preparedness of educators, limitations of the curriculum, constant changes in the software, data security problems, uneven resources availability, and the need to integrate digital literacy into accounting (Satjawisate et al., 2025; Tee et al., 2024; Nie and Mastor, 2024; Busulwa et al., 2026). There are also some human aspects to consider.

The present research focuses on investigating the factors that inhibit or facilitate the successful implementation of Computerised Accounting Systems in higher education accounting courses.

Statement of the Problem

While there is governmental backing for digitalisation of curricula, implementation of Computerised Accounting Systems (CAS) in accounting departments continues to remain inconsistent and inefficient. Ineffective ICT infrastructure, regular system downtime, poor technical support, and failure to integrate technology and accounting knowledge continue to

hamper the process. The financial accounting lecturers often lack necessary technological skills that will assist them in integrating the CAS platforms and IFRS. Cost of software licenses and cybersecurity concerns pose additional challenges, especially to public institutions.

The ideal situation is one in which modern CASs are integrated into the tertiary accounting curriculum to give students relevant digital skills while ensuring that the curriculum meets industry needs and closes the theory-practice gap. However, much of the current literature focuses on investigating individual barriers without looking at how all three of these barriers (infrastructure, faculty training, and management support) act together. Very few pieces of literature utilise statistical methods backed by theoretical concepts of TAM and institutional theory in tertiary institutions that are resource limited.

Objectives of the Study

The main aim will be an assessment of the factors and challenges associated with the adoption of Computerised Accounting Systems (CAS) in financial accounting education at tertiary level institutions. Specific objectives include:

- i. To assess the effect of the quality of technical infrastructure (hardware, software, stability of networks) on the effective adoption of CAS.
- ii. To identify the effect of training of teachers and their operational proficiency on the successful adoption of CAS.
- iii. To examine the effect of management support and funding for digitalisation in accounting departments.

Research Hypotheses

H₀1: Quality of technical infrastructure has no significant effect on the effective adoption of CAS in tertiary institutions.

H₀2: Training and operational proficiency of teachers have no significant effect on the adoption of CAS.

H₀3: Management support and funding has no significant effect on the digitalisation of accounting education.

Literature Review

Conceptual Review

Financial accounting education digital transformation is associated with the holistic incorporation of digital technologies aimed at changing instructional approaches, course development, and processes. A Computerised Accounting System (CAS) is the use of integrated software incorporating digital technology, processors, and databases to enter, process and analyse financial transactions (Aziz et al., 2026). In tertiary institutions, CAS serves as both

administrative tools and educational platforms that move accounting education from theoretical knowledge to actual data entry, reporting, and internal control assessment (Ojedele, 2023).

However, empirical evidence shows contradictory results. According to Machera and Machera (2017), university education programmes suffer from criticisms from employers due to the inability of graduates to apply their skills in practice due to non-computerised programmes. Digital transformation negatively impacted the quality of accounting information systems in emerging economies for a certain period (Hamdy et al., 2025). Insufficient upskilling, poor cybersecurity practices and lack of vendor assistance were the major barriers (Miller, 2025). On the other hand, investigations conducted in well-resourced settings (Alenezi, 2023; Al-Fraihat et al., 2020) have revealed that upon meeting certain threshold levels, adoption becomes much easier. Such contradictory evidence demonstrates the significance of conducting context-based multidimensional analysis in poorly resourced environments.

Theoretical Review and Conceptual Framework

The research will be based on the Technology Acceptance Model (TAM) and Institutional Theory.

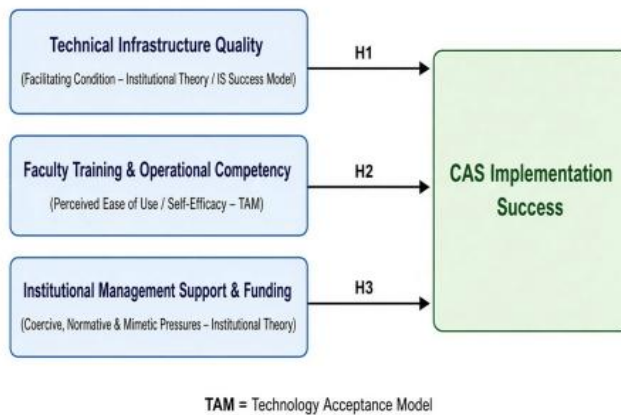
According to Davis (1989) TAM's usefulness and ease of use determine the users' intention to use a certain technology. In the context of education, faculty training and operational competency determine PEOU and computer self-efficacy; thus, if lecturers find it difficult to use CAS or do not see a link between it and learning outcomes, their intention to use it will be low (Fathema et al., 2015; Aziz et al., 2026).

The Institutional Theory (DiMaggio and Powell, 1983) focuses on explaining the influence of external regulations, socio-economic conditions, and institutional management on the adoption of innovations. The coercive, normative, and mimetic pressures affect institutions' decisions to use and maintain CAS.

Both these theories complement each other: While TAM explains individual level acceptance, the Institutional Theory explains the organisational environment necessary for this acceptance to happen. Both of them are more suitable than UTAUT and TOE frameworks as the study tries to explain the acceptance of educators as well as the institutional barriers of public tertiary institutions in developing countries.

Figure 1

Figure 1: Conceptual Framework



Conceptual Framework of the Study

Figure 1 presents three independent variables, namely, Technical Infrastructure Quality, Faculty Training & Operational Competency, and Institutional Management Support & Funding, which point to the dependent variable CAS Implementation Success, where the theories of the variables are shown.

Research Gap

Table 1. Summary of Selected Prior Studies and Remaining Research Gaps

Study	Key Variables	Context	Method	Main Finding	Remaining Gap
Machera & Machera (2017)	Curriculum, software exposure	Botswana	Qualitative	Persistent skills gap	No multi-factor quantitative model
Hamdy et al. (2025)	Digital transformation, AIS quality	Developing countries	Survey	Negative short-term effect	Focus on infrastructure only; omits faculty & management
Miller (2025)	Upskilling, cybersecurity	South Africa (telecoms)	Case study	Training & support bottlenecks	Single industry; no integrated regression model
Present study	Infrastructure + Training + Management support	Nigerian tertiary institutions	Multiple regression	All three significant; infrastructure strongest	Integrated theory-driven model in accounting education

Few studies have simultaneously examined technical, human, and institutional predictors of CAS implementation success in tertiary accounting education using a theory-driven multiple-regression approach. This study fills that gap.

Methodology

Research Design

A descriptive survey research design was adopted to gather cross-sectional data on institutional readiness and technical challenges.

Population and Sampling

The target population consisted of about 180 lecturers of accounting, laboratory administrators, and IT staff from various public and private tertiary institutions in the study area. Using the Krejcie and Morgan (1970) sample-size table, a population of 180 at a 95% confidence level and a 5% margin of error yields a required sample of 123. For this study, a purposive (judgmental) sampling method with 123 subjects was used in order to include only those subjects who have firsthand knowledge of teaching financial accounting courses or administration of the laboratory system. The focus was on information richness rather than on statistical generalisability. Post hoc power analysis with G*Power 3.1 showed power greater than 0.99 for observed effect sizes.

Research Instrument

A structured questionnaire with 22 questions measuring on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) was formulated. The constructs and sources used are:

Tech_Inf (6 items): Adapted from Al-Fraihat et al. (2020), DeLone & McLean (2003). Sample item: "Network connectivity in the accounting laboratory is reliable during practical sessions."

Fac_Train (6 items): Adapted from Fathema et al. (2015). Sample item: "I have received adequate training to teach using modern CAS packages."

Inst_Sup (5 items): Taken from Institutional Theory and Venkatesh et al. (2003). Sample item: "Senior management allocates sufficient budget for CAS software licences and upgrades."

CASImp (5 items). Sample item: "CAS is successfully integrated into the financial accounting curriculum."

The content validity of the questionnaire was established by a panel of three accounting education experts and two IT experts. Face validity was confirmed through a pilot test involving 25 participants other than those in the main survey. Cronbach's alpha coefficients for Tech_Inf, Fac_Train, Inst_Sup, and CASImp were .87, .84, .81, and .86, respectively, all above the standard cut-off value of .70. Average Variance Extracted (AVE) values were greater than .50 for all constructs.

Data Analysis

The multiple linear regression model was specified as:

$$CAS_{Imp} = \beta_0 + \beta_1 Tech_Inf + \beta_2 Fac_Train + \beta_3 Inst_Sup + \epsilon$$

Where:

CAS_{Imp} = successful implementation of Computerised Accounting system (Dependant variable)

Tech_Inf = Technical infrastructural quality

Fac_Train = Faculty training and operational competency

Inst_Sup = Institutional management support and funding

β = Intercept parameter

$\beta_1, \beta_2, \beta_3$ = Regression coefficient of the independent variables

ϵ = Stochastic error term

Regression assumptions were tested and satisfied:

Multicollinearity: all Variance Inflation Factors (VIF) < 2.1 and tolerance > 0.48;

Normality of residuals: Shapiro–Wilk test $p > 0.05$ and acceptable Q–Q plots;

Homoscedasticity: Breusch–Pagan test $p > 0.05$;

Independence of errors: Durbin–Watson statistic = 1.92;

Linearity: residual plots showed no systematic patterns.

Results

Table 2

Multiple Linear Regression Results Predicting CAS Implementation Success

Variable	Unstandardised B	SE	Standardised β	T	P	95% CI	VIF
Intercept	0.412	0.115	—	3.582	< .001	[0.184, 0.640]	—
Technical infrastructure (Tech_Inf)	0.537	0.064	0.498	8.391	< .001	[0.410, 0.664]	1.42
Faculty training (Fac_Train)	0.339	0.051	0.312	6.647	< .001	[0.238, 0.440]	1.38
Institutional support (Inst_Sup)	0.211	0.048	0.189	4.395	.018	[0.116, 0.306]	1.29

Model summary: $R = 0.845$, $R^2 = 0.714$, adjusted $R^2 = 0.702$, $F(3, 116) = 96.42$, $p < 0.001$.

All three null hypotheses are rejected.

Discussion of Findings

The model explains 71.4% of the variance in CAS implementation success. Although high for a survey-based study, this magnitude is comparable to those reported in analyses of coupled socio-technical systems (Al-Fraihat et al., 2020).

Quality of technical infrastructure was revealed to be the most powerful predictor ($\beta = 0.537$, $p < 0.001$). This finding supports the DeLone and McLean (2003) Information Systems Success Model, which suggests that system quality (reliability, performance and network robustness) is an important pre-condition of user satisfaction and system usefulness. Without robust hardware, software and connectivity, there would be no pedagogical gain. The finding is also consistent with Alenezi (2023) and Al-Fraihat et al. (2020), who have found that technical facilitating conditions are the main predictors of engagement with complicated learning applications. In low-resource tertiary institutions, this would be the most significant barrier.

Competency in faculty training and operations was the second important factor ($\beta = 0.339$, $p < 0.001$). Within the TAM context, systematic professional development positively contributes to the perception of ease of use and computer self-efficacy (Fathema et al., 2015). If instructors have no sufficient knowledge of automation tools and contemporary cybersecurity issues, the level of teaching is poor, and students are poorly prepared. This confirms Miller (2025) and Alenezi (2023), who point out that human competencies are what actually transform technological possibilities into educational outcomes.

Support from institutional management and financial resources, though important ($\beta = 0.211$, $p = 0.018$), had relatively low impact. This is supported by the findings in the UTAUT theory, where management support is a facilitating condition (Venkatesh et al., 2003). The persistent support from the management is vital to get constant licensing, technical personnel, and readiness to accept the change, thus avoiding post-implementation obsolescence (Al-Fraihat et al., 2020).

As a whole, the findings indicate that CAS adoption is indeed a socio-technical activity that demands equal emphasis on technology, people, and organisational aspects. Attempts at adopting CAS without considering all of these will most probably fail.

Conclusion

The results disprove all three null hypotheses and indicate that successful implementation of CAS is dependent on the interrelated influence of infrastructure, faculty training and management support. Good quality of infrastructure is the basic condition; professional training of teachers turns technical possibilities into educational opportunities; and management support is required for financial sustainability and acceptance. Digital transformation in accounting education thus requires an approach that is comprehensive as opposed to being fragmented.

This study provides a clear roadmap for academic deans, policymakers, and university administrators. Failure to address these infrastructural inadequacies and the skills deficit among teaching staff will result in poor learning conditions and wasted resources. On the other hand, having a dependable CAS infrastructure will prepare students with the necessary competencies needed by employers in contemporary times.

Recommendations

Based on the findings of the study, the following recommendations were made:

Institutions of higher learning need to upgrade their IT architecture, ensure dependable cloud connectivity and installation of backup power generators to prevent any disruptions in practical classes.

Continuous training programme for financial accounting teachers on new software versions and cyber security measures needs to be mandatory and made part of their KPIs.

Departments of accounting need to enter into alliance with software companies and professional bodies in order to get educational licenses and realistic cases from corporates.

Institutions need to allocate budget for sustained funding of digital accounting efforts and not let it become obsolete.

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