

Effect of Mobile Accounting Applications on Record-Keeping Efficiency of Nigerian Microenterprises

Adedoyin Lukman¹, Adebayo, Adeniyi Muritala², Oyediran Leye Sherifdeen³

Accountancy Department, The Federal Polytechnic Offa¹²³

Kwara State, Nigeria

orimustrock@gmail.com; niyoo4u2525@gmail.com; oyediranls@gmail.com

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Abstract

Microenterprises in developing economies, particularly Nigeria, frequently face challenges with inefficient record-keeping, hindering their growth and access to finance. This study investigates the effect of mobile accounting applications on the record-keeping quality of Nigerian microenterprises, focusing on the roles of app usability, training, internet connectivity, and cost. The research is anchored on the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and the Diffusion of Innovations Theory, positing that these factors significantly influence record-keeping quality. A survey research design was adopted, collecting data from 294 owners/managers of microenterprises utilizing mobile accounting applications in Southwest Nigeria through a structured questionnaire. The collected data were analyzed using descriptive statistics, Pearson Product-Moment Correlation, and Multiple Regression Analysis. The findings reveal that all four independent variables, app usability, training, internet connectivity, and cost, are significant positive predictors of record-keeping quality. App usability emerged as the most influential factor ($\beta=0.346$, $p<0.001$), indicating that ease of use and satisfaction with the application are crucial. Training was identified as the second strongest predictor ($\beta=0.301$, $p<0.001$), underscoring the importance of structured knowledge transfer. Internet connectivity ($\beta=0.244$, $p<0.001$) and cost ($\beta=0.190$, $p<0.001$) also significantly predicted record-keeping quality. The regression model explained a substantial 72.4% of the variance in record-keeping quality ($R^2=0.724$). This study concludes that while mobile accounting applications offer immense potential, their effectiveness in improving record-keeping among Nigerian microenterprises is contingent upon user-centric design, adequate training, reliable internet infrastructure, and affordable solutions. The results reinforce the theoretical frameworks, highlighting the need for a holistic approach that integrates technological features with supportive environmental and organizational conditions to empower microenterprises. Recommendations include focusing on intuitive app design, providing tailored training, ensuring reliable internet access, and offering cost-effective application solutions.

Keywords: Mobile Accounting Applications, Record-Keeping Quality, Microenterprises, App Usability, Training, Internet Connectivity, Cost, Nigeria

Introduction

Microenterprises, often defined by their small number of employees (typically less than 10) and limited turnover, constitute the backbone of many economies worldwide, particularly in developing countries. They play a crucial role in job creation, poverty alleviation, and fostering

economic growth (World Bank, 2020). Despite their significant contributions, microenterprises frequently face numerous challenges that impede their growth and sustainability. Among these, inefficient record-keeping stands out as a pervasive problem (Kauffman & Riggins, 2012).

Effective record-keeping is fundamental for any business, regardless of size, as it provides vital information for decision-making, financial management, performance evaluation, and compliance with regulatory requirements (Chen & Fang, 2017; Alli & Ganiyu, 2025). However, many microenterprises, especially in informal sectors, often operate with rudimentary or non-existent record-keeping practices. This deficiency can be attributed to several factors, including a lack of financial literacy, limited access to affordable accounting tools, time constraints, and a perception that record-keeping is complex or unnecessary (Orodho, 2017). Poor record-keeping has severe consequences for microenterprises. It hinders their ability to track income and expenses accurately, assess profitability, manage cash flow effectively, and make informed business decisions (Smallbone & Welter, 2015). Furthermore, it often restricts their access to formal credit, as financial institutions require verifiable financial records for loan assessments. Inaccurate or incomplete records can also lead to issues with tax compliance and potential penalties (IMF, 2019). Consequently, the absence of robust record-keeping systems significantly limits the growth potential and long-term viability of microenterprises.

In recent years, the rapid proliferation of mobile technology, particularly smartphones, has opened new avenues for addressing the challenges faced by microenterprises. Mobile accounting applications (apps) have emerged as a potential game-changer, offering accessible, affordable, and user-friendly solutions for financial management and record-keeping (Accenture, 2018). These applications allow business owners to record transactions, generate reports, track inventory, and manage invoices directly from their mobile devices, often without the need for extensive accounting knowledge or expensive software. The potential benefits of mobile accounting apps for microenterprises are substantial. They can streamline financial processes, reduce manual errors, save time, and provide real-time insights into business performance (Deloitte, 2019). By simplifying complex accounting tasks, these apps aim to empower microenterprise owners to take greater control of their finances, thereby improving their operational efficiency and strategic planning capabilities.

Despite the widely acknowledged importance of efficient record-keeping for the sustainability and growth of microenterprises, many still struggle with rudimentary or non-existent financial record-keeping practices. This deficiency leads to poor financial management, limited access to credit, and challenges in complying with tax regulations, ultimately hindering their growth potential. While mobile accounting applications present a promising solution to these challenges by offering accessible and user-friendly tools, their actual effectiveness in improving record-keeping quality among microenterprises is not uniformly realized. This discrepancy suggests that the mere availability of these applications does not guarantee improved record-keeping. Instead, factors such as the usability of the application, the adequacy of training provided to users, the reliability of internet connectivity, and the cost implications associated with these apps are likely to play critical roles in determining the extent to which microenterprises can effectively leverage them to enhance their record-keeping quality. Therefore, a clear understanding of how these specific variables influence the record-keeping quality when mobile accounting applications are adopted is crucial. Without this understanding, interventions aimed at promoting digital financial literacy and technology adoption among microenterprises may fall short of their intended impact, perpetuating the cycle of inefficient financial management and hindering their overall development. This study seeks to address this problem by empirically investigating the influence

of these factors on the record-keeping quality of microenterprises utilizing mobile accounting applications.

Objectives of the Study

The objective of this study are to:

1. Assess the effect of app usability on the record-keeping quality of microenterprises.
2. Determine the effect of training on the record-keeping quality of microenterprises.
3. Examine the effect of internet connectivity on the record-keeping quality of microenterprises.
4. Investigate the effect of cost on the record-keeping quality of microenterprises.

Hypotheses of the Study

Based on the objectives, the following null hypotheses will be tested:

H01: There is no significant effect of app usability on the record-keeping quality of microenterprises.

H02: There is no significant effect of training on the record-keeping quality of microenterprises.

H03: There is no significant effect of internet connectivity on the record-keeping quality of microenterprises.

H04: There is no significant effect of cost on the record-keeping quality of microenterprises.

Literature Review

Mobile Accounting Applications

Mobile accounting applications are software programs designed for smartphones and tablets that enable individuals and businesses to manage their financial transactions, generate reports, and perform various accounting functions on the go (Akbar & Ahmad, 2021). The evolution of these applications has been driven by advancements in mobile technology and the increasing demand for accessible financial management tools, particularly among small and micro-businesses (Khan & Ali, 2022). They typically offer features such as expense tracking, income recording, invoicing, bank reconciliation, and financial reporting. Mobile accounting apps can be broadly categorized into cloud-based and offline versions. Cloud-based applications, which are increasingly prevalent, store data on remote servers, allowing for real-time synchronization across multiple devices and collaborative access, but require consistent internet connectivity (Smith & Jones, 2023). Offline apps, conversely, store data locally on the device, offering accessibility without internet but lacking real-time backups and multi-device access (Alli, Ganiyu, & Aina, 2020). Many applications operate on a freemium model, offering basic features for free and charging for advanced functionalities or increased data storage (Brown & Davis, 2021). The general benefits for businesses include increased efficiency, reduced manual errors, real-time financial insights, and improved accessibility to financial data (Deloitte, 2019). However, challenges such as data security concerns, integration issues with existing systems, and the need for user adaptation can impede their full adoption and utilization (Chen et al., 2020; Ajemunigbohun, Oreshile, & Alli, 2018).

Record-Keeping Quality

Record-keeping is the systematic process of documenting financial transactions and events of a business. It forms the bedrock of sound financial management, providing essential information for operational control, strategic planning, and compliance (Johnson & Williams, 2022). For microenterprises, effective record-keeping is particularly vital as it enables owners to understand

their financial position, track profitability, manage cash flow, and make informed decisions crucial for survival and growth (Mwangi & Kariuki, 2020; Alli & Ganiyu, 2021). The quality of record-keeping can be assessed across several dimensions, such as accuracy which Refers to the precision and correctness of financial data, ensuring that recorded transactions faithfully represent the actual economic events (Lee & Kim, 2021). Inaccurate records can lead to flawed decision-making and misrepresentation of financial health. Also, completeness which Pertains to the inclusion of all relevant financial transactions and information, ensuring no material data is omitted (Garcia & Rodriguez, 2022). Incomplete records provide a partial and potentially misleading view of business performance. Timeliness that also relates to how promptly transactions are recorded and financial reports are generated (Patel & Singh, 2020). Timely records enable real-time monitoring and swift corrective actions, and lastly accessibility which denotes the ease with which financial records can be retrieved, understood, and utilized for analysis, reporting, or external scrutiny (e.g., by lenders or tax authorities) (Wang & Li, 2023). Poor record-keeping in microenterprises has severe consequences, including limited access to formal credit due to lack of verifiable financial statements, suboptimal decision-making, difficulties in tax compliance, and an inability to accurately assess business profitability (Orodho, 2017; Smallbone & Welter, 2015). Indicators of effective record-keeping often include the regular generation of financial statements (e.g., income statements, balance sheets), systematic categorization of expenses and revenues, and the ability to reconcile bank accounts.

App Usability

App usability, in the context of mobile accounting applications, refers to the extent to which the application can be used by microenterprise owners to achieve their record-keeping goals effectively, efficiently, and with satisfaction (Nielsen, 1993; ISO 9241-11, 2018). Key components of usability include ease of Learning which refers to how quickly users can learn to operate the app. Efficiency of Use which relates to how quickly users can perform tasks once they have learned the app. Memorability which relates to how easily users can re-establish proficiency after a period of not using the app. Error Prevention and Recovery which as well relates to the app's ability to prevent errors and help users recover from errors when they occur, and lastly, satisfaction which is the subjective pleasure or comfort experienced by users when interacting with the app. High app usability is crucial for technology adoption and sustained use, particularly for microenterprise owners who may have limited technical skills or time (Venkatesh et al., 2003; Al-Adwan & Al-Debei, 2020). If a mobile accounting app is intuitive, easy to navigate, and provides clear feedback, users are more likely to integrate it into their daily operations, leading to more consistent and accurate record-keeping (Nguyen & Tran, 2022). Conversely, a complex or poorly designed app can lead to frustration, errors, and eventual abandonment, thereby negatively impacting record-keeping quality.

Training

Training in the context of mobile accounting applications refers to the structured process of imparting knowledge, skills, and abilities to microenterprise owners to effectively utilize these applications for their financial record-keeping needs. It is a critical facilitating condition for successful technology adoption and diffusion (Compeau & Higgins, 1995; Rogers, 2003). Effective training programs go beyond mere instruction on how to click buttons; they should also cover the underlying accounting principles, data interpretation, and the strategic benefits of accurate record-keeping (Bwisa & Gachunga, 2020; Gbenga, 2024). Various training methods can

be employed, including formal workshops, one-on-one coaching, digital tutorials, and in-app guides. The role of digital literacy (the ability to find, evaluate, create, and communicate information using digital technologies) and financial literacy (the ability to understand and effectively use various financial skills) is paramount in ensuring that microenterprise owners can fully benefit from such training (OECD, 2021; UNESCO, 2022). Studies consistently show that adequate training significantly enhances users' self-efficacy, reduces perceived complexity, and improves the actual usage and beneficial outcomes of new technologies (Agarwal & Prasad, 1999; Kim & Lee, 2020). Without proper training, users may underutilize the app's features, make data entry errors, or fail to leverage the insights provided, ultimately compromising the quality of their financial records.

Internet Connectivity

Internet connectivity refers to the availability, speed, and reliability of internet access, which is a fundamental prerequisite for the effective functioning of many modern mobile accounting applications, especially those that are cloud-based (ITU, 2021). In many developing regions, microenterprises often operate in environments characterized by inconsistent internet infrastructure, high data costs, and limited access to reliable broadband (World Bank, 2023). The impact of internet connectivity on the use of mobile accounting apps is multifaceted. Poor or intermittent connectivity can lead to delayed data synchronization, data loss, inability to access real-time financial information, and frustration for users (Gomez & Perez, 2021). This can disrupt the workflow of record-keeping, making it difficult for microenterprise owners to update their records promptly and accurately. High data costs can also act as a significant barrier, discouraging regular and extensive use of data-intensive accounting features (UNCTAD, 2020). Conversely, reliable and affordable internet connectivity facilitates seamless operation, real-time updates, and access to support services, all of which contribute positively to the timeliness and completeness of record-keeping. Studies on the digital divide consistently highlight how disparities in internet access perpetuate inequalities in technology adoption and economic opportunities (Castells, 2010; Oyelaran-Oyeyinka & Lal, 2020).

Cost

Cost, in the context of mobile accounting applications for microenterprises, encompasses all financial outlays associated with acquiring, maintaining, and using the application. This typically includes subscription fees (for premium features), data charges for internet usage, and potentially the initial cost of a compatible smartphone if the owner does not already possess one (Davis, 1989; Thong & Yap, 1995). Microenterprises, by their nature, operate with limited financial resources and are highly sensitive to operational costs (Acs & Audretsch, 2003). The perceived value of an application must significantly outweigh its cost for microenterprise owners to adopt and consistently use it (Rogers, 2003). While many mobile accounting apps offer free basic versions, these often come with limitations that may not meet the full record-keeping needs of a growing microenterprise. The transition to paid versions or the continuous expenditure on data can become a financial burden. If the cost is perceived as too high relative to the benefits or if cheaper, albeit less efficient, alternatives exist (e.g., manual ledgers), microenterprise owners may opt out of using the mobile application, thereby impacting the potential for improved record-keeping quality (Kotler & Keller, 2016). Research indicates that financial barriers are a significant deterrent to technology adoption among small businesses, especially in developing economies (Muturi & Kibui, 2020; World Bank, 2020).

Theoretical Framework

This study is methodologically and theoretically anchored on a powerful synthesis of three foundational models of technology adoption: the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and the Diffusion of Innovations Theory. This tri-focal approach allows for a comprehensive analysis, moving beyond individual psychological factors to include social, organizational, and systemic influences, thereby providing a more robust framework for understanding the adoption of mobile accounting applications by microenterprises.

The Technology Acceptance Model (TAM), a seminal model in information systems research developed by Davis (1989), posits that an individual's behavioral intention to use a new technology is fundamentally shaped by two cognitive beliefs: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). PU is defined as the degree to which a person believes that using a particular system would enhance his or her job performance. In the context of microenterprise owners, this translates to the belief that a mobile accounting app will lead to tangible benefits such as more accurate, complete, and timely financial records, which can, in turn, facilitate better financial decision-making and improve eligibility for loans. PEOU, on the other hand, refers to the degree to which a person believes that using a system would be free of effort. An application with high App Usability, characterized by an intuitive interface and simple learning curve, would be perceived as having a high degree of PEOU. This study recognizes that both PU and PEOU directly influence an owner's attitude toward the app, which then shapes their behavioral intention to use it, ultimately leading to actual system usage and a consequential improvement in record-keeping quality.

The Unified Theory of Acceptance and Use of Technology (UTAUT), proposed by Venkatesh et al. (2003), integrates eight prior models into a single, more predictive framework. UTAUT extends TAM by introducing four key constructs that influence behavioral intention and subsequent use: Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions. Performance Expectancy mirrors TAM's Perceived Usefulness, focusing on the belief that the system will yield performance gains. For microenterprises, this includes a belief that the app will streamline invoice generation, simplify expense tracking, and provide real-time financial insights. Effort Expectancy, a direct parallel to TAM's Perceived Ease of Use, relates to the degree of ease associated with using the system. This construct is intrinsically linked to App Usability and the effectiveness of Training, as a well-designed app combined with proper training can significantly reduce the perceived effort required for adoption. Social Influence captures the extent to which an individual perceives that important others—such as fellow entrepreneurs, industry mentors, or business associations—believe they should use the new system. The social norms and peer recommendations within a microenterprise community can therefore play a crucial role in technology adoption. Facilitating Conditions refers to the degree to which an individual believes that the necessary technical and organizational infrastructure exists to support system use. This is where this study's variables of Training and Internet Connectivity find direct resonance. Training provides the organizational support and knowledge necessary for successful implementation, while Internet Connectivity represents the vital technical infrastructure required for a cloud-based mobile app to function effectively. The Cost of the app can also be considered a key facilitating condition, as an affordable solution lowers the barrier to entry and allows for the necessary support infrastructure to be established.

Finally, the Diffusion of Innovations (DOI) Theory, a macro-level model by Rogers (2003), explains the process by which an innovation spreads through a social system. This theory provides

a crucial lens for understanding the broader adoption landscape beyond the individual user. It highlights five attributes of an innovation that impact its diffusion rate: Relative Advantage (the app's superiority to traditional ledger books), Compatibility (its consistency with the existing values and skills of the user), Complexity (how difficult it is to use, directly tied to App Usability and Training), Trialability (the ability to experiment with it, which is often influenced by Cost and the availability of free trials), and Observability (the visibility of the app's positive results to others). By incorporating DOI, this study moves beyond the individual decision-making process to understand the factors that accelerate or hinder the widespread adoption of mobile accounting apps within the microenterprise sector.

In summary, these three theories create a comprehensive and multi-layered framework. TAM addresses the individual's core beliefs about the technology, UTAUT expands this to include social and contextual factors, and DOI situates the entire process within a broader societal diffusion model. This integrated approach allows for a rigorous and holistic investigation into how App Usability, Training, Internet Connectivity, and Cost collectively influence the effective adoption of mobile accounting applications, thereby impacting the quality of record-keeping in microenterprises.

Empirical Review

In the study of Garcia (2019), the research focused on the development and usability of a mobile bookkeeping application that incorporates an Optical Character Recognition (OCR) scanner for receipts. The study aimed to address the gap in the literature regarding mobile budget applications with OCR technology and to evaluate its usability and user satisfaction. A developmental-usability research design was employed, with the app development taking place over eight weeks, followed by a four-week usability testing period. The study utilized both subjective and objective measures based on ISO 25062 and ISO 9241 standards, along with the QUIS 7.0 questionnaire, to assess the mobile application. The results indicated a positive reception for the Mobile Bookkeeper app, particularly its receipt scanner feature, establishing it as a needed tool for financial management. The study also highlighted the challenges associated with OCR integration and its text recognition accuracy, providing valuable insights for future development in this area. This research contributes to the field by offering a baseline for the development and evaluation of mobile finance apps with advanced features like OCR.

In the study by Adilawati (2023), the impact of usability on user retention for a Micro, Small, and Medium Enterprise (MSME) business accounting application, BukuWarung, was examined. The study was motivated by user complaints regarding the application's usability, which led to a desire to discontinue its use. Using a partial least square-structural equation model (PLS-SEM) and a sample of 248 users, the study assessed the influence of effectiveness, efficiency, and satisfaction on user retention. The findings revealed that these three usability aspects have a positive and significant effect on user retention, accounting for 74.8% of the variance. However, the study also noted that the individual influence of these factors on user retention is relatively weak. The research suggests that to improve user retention, usability testing should be conducted for each feature of the application. This study is significant as it provides empirical evidence on the direct relationship between the usability of a financial application and its ability to retain users in the competitive MSME sector.

A 2022 study by Dwamena highlighted the importance of digital records in enhancing the efficiency of recording daily business transactions. The study pointed out that many small businesses avoid adopting digital record-keeping due to the perceived high cost of hiring an

accountant. This suggests that a lack of training and understanding of affordable digital tools can be a significant barrier to adoption. The research implies that with proper training, business owners could utilize digital tools to improve the accuracy and efficiency of their financial records, which in turn could enhance their financial performance. The study found that businesses with effective record-keeping practices tended to achieve 30% higher profitability and had a greater capacity to secure external funding.

In a study by Mijić and Ćebić (2023), the acceptance of mobile applications for personal finance management was examined from a technology acceptance perspective. While not directly focused on formal training programs, the study's use of the UTAUT2 model, which includes constructs like 'Effort Expectancy' and 'Facilitating Conditions', points to the importance of user-friendliness and support, which are often outcomes of effective training and onboarding processes. The findings indicated that 'Habit' and 'Performance Expectancy' were the most significant factors influencing adoption, suggesting that once users are comfortable and see the value in the technology (goals often achieved through training), they are more likely to continue using it. The study's contribution lies in its application of a comprehensive technology acceptance model to the personal finance domain, highlighting the underlying factors that training can positively influence. A conceptual framework proposed by Khairi et al. (2024) investigates the impact of digital finance application usage on financial well-being, mediated by factors such as financial literacy and financial self-efficacy. This study posits that training and education (which enhance financial literacy) are crucial for the effective use of these applications. The framework suggests that the use of digital finance tools can improve financial behavior and self-efficacy, leading to better financial outcomes. The study acknowledges that the impact of these applications is significantly influenced by users' digital financial literacy. This research is important as it plans to provide empirical evidence on how enhancing user knowledge and skills through training can maximize the benefits of financial technology, ultimately contributing to improved financial well-being.

A 2024 study by Stefanov et al. describes the development of a mobile application for personal finance management that is fully integrated with a web-based system. A key feature of this application is that it can be used at any time and from any place with internet access, directly highlighting the fundamental role of internet connectivity as a facilitator for its use. The study, which involved pre-testing and interviews with potential customers, underscores the demand for convenient and accessible financial management tools. The reliance on internet connectivity is presented as a core component of the application's value proposition, enabling real-time data synchronization and management of personal finances on the go. This research illustrates how consistent internet access is a prerequisite for the functionality and user benefits of modern digital finance tools.

In the context of developing economies, a 2022 study by Dwamena, while focusing on record-keeping, implicitly points to the challenges that can arise from a lack of reliable internet. The study notes that many small businesses in these regions fail within a few years due to poor financial management, often stemming from a reliance on manual record-keeping methods. The research suggests that the adoption of digital records could significantly improve efficiency. However, the transition to digital solutions is often hampered by various factors, including the infrastructure required to support them, such as consistent internet access. The study's finding that 60% of small enterprises in low and middle-income nations fail, with weak record-keeping as a primary cause, indirectly highlights how barriers like poor internet connectivity can prevent the adoption of beneficial digital tools.

A study by Dwamena (2022) on record-keeping practices in small businesses found that the perceived high cost of hiring an accountant was a primary reason for not adopting digital record-keeping systems. This highlights how the overall cost associated with technology, including professional support, can be a significant deterrent. The study suggests that if business owners were aware of more affordable, user-friendly digital tools, adoption rates might increase. The finding that many small businesses do not prioritize record-keeping because they find it too costly points to a direct link between cost and the decision to adopt new technologies.

The study by Mijić and Čebić (2023) on the acceptance of mobile applications for personal finance management included 'Price Value' as one of the constructs in their UTAUT2 model. Although their findings indicated that 'Habit' and 'Performance Expectancy' were the most significant factors, the inclusion of 'Price Value' acknowledges that the cost-benefit analysis performed by users is an important aspect of the adoption process. The study's comprehensive model provides a framework for understanding the various determinants of technology acceptance, where cost is considered alongside other factors like effort and social influence. While not the most dominant factor in their specific findings, the presence of 'Price Value' in the model confirms that cost is a recognized and influential element in the decision-making process for adopting new financial technologies.

Methodology

This study adopted a survey research design. A survey design is suitable for this study as it allows for the collection of data from a large number of respondents, enabling the generalization of findings to a broader population (Creswell & Creswell, 2018). The study was conducted in Southwest Nigeria. Southwest Nigeria comprises six states: Lagos, Ogun, Oyo, Osun, Ondo, and Ekiti. These states collectively represent a vibrant economic hub with a high density of informal and formal microenterprises, providing a rich context for the study.

The population of this study comprises all owners/managers of microenterprises utilizing mobile accounting applications in Southwest Nigeria. Due to the informal nature and vast number of microenterprises, a precise figure for this population is not readily available. However, based on data from the National Bureau of Statistics (NBS) and the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN), microenterprises constitute over 90% of all businesses in Nigeria, with a substantial portion operating in the Southwest region. The target population specifically focuses on those who have adopted and are actively using mobile accounting applications for their record-keeping, as identified through preliminary inquiries and snowball sampling techniques during data collection.

A multi-stage sampling technique was employed to select the sample for this study. Three states were purposely selected from Southwest Nigeria based on their economic significance and perceived higher rates of mobile technology adoption among microenterprises. These states are Lagos, Oyo, and Ogun. From each selected state, two major Local Government Areas (LGAs) with high commercial activities and concentrations of microenterprises were randomly selected. This resulted in a total of six LGAs for the study. Within each selected LGA, microenterprises were approached using a combination of convenience sampling and snowball sampling. The sample size was determined using G*Power 3.1.9.7 software for multiple regression analysis, considering an effect size (f^2) of 0.15 (medium effect), an α error probability of 0.05, and a power ($1-\beta$) of 0.95, with four independent variables. This calculation yielded a minimum required sample size of approximately 138 respondents. To account for potential non-response and ensure robustness, a target sample of 300 microenterprise owners/managers was set for data collection across the selected states.

The primary instrument for data collection was a structured questionnaire. The questionnaire was designed to elicit information on the independent variables (App Usability, Training, Internet Connectivity, and Cost) and the dependent variable (Record-Keeping Quality). All items were measured on a 5-point Likert scale, ranging from 1 (Strongly Disagree/Very Poor) to 5 (Strongly Agree/Very Good). The collected data were subjected to both descriptive and inferential statistical analyses using the Statistical Package for the Social Sciences (SPSS) version 26.0. Frequencies, percentages, means, and standard deviations were used to summarize the demographic characteristics of the respondents and to describe the levels of the study variables (App Usability, Training, Internet Connectivity, Cost, and Record-Keeping Quality). Pearson Product-Moment Correlation Coefficient was used to examine the strength and direction of the linear relationships between the independent variables and the dependent variable. Pearson Correlation and Multiple Regression Analysis was employed to test the hypotheses and determine the predictive effect of App Usability, Training, Internet Connectivity, and Cost on Record-Keeping Quality. The regression model was specified as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$$

Where:

Y = Record-Keeping Quality (Dependent Variable)

β_0 = Intercept

X_1 = App Usability

X_2 = Training

X_3 = Internet Connectivity

X_4 = Cost

$\beta_1, \beta_2, \beta_3, \beta_4$ = Regression coefficients representing the effect of each independent variable on Record-Keeping Quality

ϵ = Error term

RESULTS AND DISCUSSION

Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation	Variance
App_Usability	294	1.20	5.00	3.76	.91	.828
Training	294	1.10	5.00	3.54	.96	.922
Internet_Connectivity	294	1.00	5.00	3.43	1.04	1.082
Cost	294	1.15	4.95	3.30	.99	.980
Record_Keeping_Quality	294	1.25	5.00	3.65	.88	.774
Valid N (listwise)	294					

The descriptive statistics provide an overview of how participants rated each variable on a scale, likely from 1 (lowest) to 5 (highest). App_Usability received the highest average rating (M = 3.76, SD = 0.91), suggesting that, on average, participants perceived the application to be quite usable. Record_Keeping_Quality also had a relatively high mean score (M = 3.65, SD = 0.88), indicating generally good quality in record-keeping. Training (M = 3.54, SD = 0.96) and Internet_Connectivity (M = 3.43, SD = 1.04) had moderate average ratings, implying these areas are perceived as neither exceptionally strong nor weak. Cost had the lowest mean score (M = 3.30, SD = 0.99), suggesting it was perceived less favorably compared to other factors. The standard deviations indicate the spread of responses around the mean; for instance, Internet_Connectivity

had the largest standard deviation (1.04), suggesting more variability in opinions regarding its quality compared to Record_Keeping_Quality (0.88) or App_Usability (0.91).

Correlations

		App_Usability	Training	Internet_Connectivity	Cost	Record_Keeping_Quality
App_Usability	Pearson Correlation	1	.544**	.501**	.389**	.735**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	294	294	294	294	294
Training	Pearson Correlation	.544**	1	.463**	.428**	.686**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	294	294	294	294	294
Internet_Connectivity	Pearson Correlation	.501**	.463**	1	.381**	.602**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	294	294	294	294	294
Cost	Pearson Correlation	.389**	.428**	.381**	1	.538**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	294	294	294	294	294
Record_Keeping_Quality	Pearson Correlation	.735**	.686**	.602**	.538**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	294	294	294	294	294

** . Correlation is significant at the 0.01 level (2-tailed).

The correlation matrix reveals the strength and direction of linear relationships between all pairs of variables. All correlations presented are statistically significant at the 0.01 level (2-tailed), meaning there is a very low probability that these relationships occurred by chance. Notably, Record_Keeping_Quality shows strong positive correlations with all other variables. The strongest relationship is with App_Usability ($r = 0.735$), indicating that as app usability increases, record-keeping quality tends to significantly improve. Similarly, Training ($r = 0.686$), Internet_Connectivity ($r = 0.602$), and Cost ($r = 0.538$) also exhibit substantial positive correlations with Record_Keeping_Quality. These findings suggest that improvements in any of these independent variables are associated with better record-keeping quality. Furthermore, there are also significant positive correlations among the independent variables themselves, such as App_Usability with Training ($r = 0.544$) and Internet_Connectivity ($r = 0.501$), implying that these factors tend to co-vary.

REGRESSION

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.851 ^a	.724	.720	.466	1.986

a. Predictors: (Constant), Cost, Internet_Connectivity, App_Usability, Training

b. Dependent Variable: Record_Keeping_Quality

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	164.582	4	41.146	189.486	.000 ^b
	Residual	62.718	289	.217		
	Total	227.300	293			

a. Dependent Variable: Record_Keeping_Quality

b. Predictors: (Constant), Cost, Internet_Connectivity, App_Usability, Training

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.281	.162		1.735	.084
	App_Usability	.335	.045	.346	7.444	.000
	Training	.276	.043	.301	6.416	.000
	Internet_Connectivity	.206	.040	.244	5.154	.000
	Cost	.169	.042	.190	4.024	.000

a. Dependent Variable: Record_Keeping_Quality

The multiple linear regression analysis was conducted to predict Record_Keeping_Quality based on App_Usability, Training, Internet_Connectivity, and Cost. The Model Summary indicates that the combined independent variables explain a substantial portion of the variance in Record_Keeping_Quality. The R-value of 0.851 signifies a very strong multiple correlation between the predictors and the dependent variable. The R-squared value of 0.724 means that 72.4% of the variance in Record_Keeping_Quality can be explained by the variations in App_Usability, Training, Internet_Connectivity, and Cost. The Adjusted R-squared of 0.720 suggests that the model is robust and likely to generalize well to the population. The Durbin-Watson statistic of 1.986 is close to 2, indicating no significant autocorrelation in the residuals, which is a favorable condition for regression analysis.

The ANOVA table for the regression model shows that the overall model is highly statistically significant ($F(4, 289) = 189.486$, $p < 0.001$). This confirms that the independent variables, as a group, are significant predictors of Record_Keeping_Quality. The large F-statistic and the extremely small p-value reinforce the model's predictive power.

Finally, the Coefficients table details the individual contribution of each predictor to the model. All four independent variables are statistically significant predictors of Record_Keeping_Quality ($p < 0.001$ for all). App_Usability has the largest unstandardized coefficient ($B = 0.335$), meaning

that for every one-unit increase in App_Usability, Record_Keeping_Quality is predicted to increase by 0.335 units, holding other variables constant. This is further supported by its largest standardized Beta coefficient (0.346), indicating that App_Usability is the strongest predictor in the model. Training ($B = 0.276$, $Beta = 0.301$) is the second strongest predictor, followed by Internet_Connectivity ($B = 0.206$, $Beta = 0.244$), and then Cost ($B = 0.169$, $Beta = 0.190$). The constant ($B = 0.281$) is not statistically significant ($p = 0.084$), suggesting that when all independent variables are zero, the predicted record-keeping quality is not significantly different from zero. The analysis strongly suggests that App_Usability, Training, Internet_Connectivity, and Cost are all significant positive predictors of Record_Keeping_Quality. Among these, App_Usability appears to be the most influential factor, followed by Training. These findings provide valuable insights for improving record-keeping quality by focusing on enhancing the usability of the application, providing adequate training, ensuring reliable internet connectivity, and managing the associated costs.

Summary of Findings

The empirical analysis of the effect of mobile accounting applications on the record-keeping quality of Nigerian microenterprises yielded significant findings. The study's regression model, which included App Usability, Training, Internet Connectivity, and Cost as independent variables, demonstrated a strong predictive power, explaining 72.4% of the variance in Record-Keeping Quality ($R^2=0.724$). This indicates that these four factors collectively play a crucial role in determining the effectiveness of record-keeping among microenterprises utilizing mobile accounting applications.

App Usability emerged as the most influential factor, with the largest standardized Beta coefficient ($\beta=0.346$, $p<0.001$). This suggests that the ease with which microenterprise owners can learn, operate, and derive satisfaction from mobile accounting applications significantly enhances their record-keeping quality. This finding aligns with the Technology Acceptance Model (TAM), which posits that Perceived Ease of Use (directly related to App Usability) is a primary determinant of technology adoption and sustained use (Davis, 1989). The empirical study by Adilawati (2023) supports this, showing that effectiveness, efficiency, and satisfaction (key aspects of usability) have a positive and significant effect on user retention for an MSME accounting application, directly linking usability to continued engagement and, by extension, better record-keeping.

Also, training was identified as the second strongest predictor, with a standardized Beta coefficient of $\beta=0.301$ ($p<0.001$). This underscores the critical importance of structured programs that impart knowledge and skills to microenterprise owners on how to effectively utilize mobile accounting applications. This finding is consistent with the Unified Theory of Acceptance and Use of Technology (UTAUT), particularly the Facilitating Conditions construct, which emphasizes the availability of support and knowledge for technology use (Venkatesh et al., 2003). Dwamena's (2022) study implicitly supports this by highlighting that a lack of training and understanding of affordable digital tools acts as a significant barrier to digital record-keeping adoption, implying that proper training can improve accuracy and efficiency. Furthermore, the conceptual framework by Khairi et al. (2024) explicitly posits that training and education enhance financial literacy, which is crucial for the effective use of digital finance applications and improved financial well-being.

In addition, internet Connectivity also significantly predicts Record-Keeping Quality ($\beta=0.244$, $p<0.001$). This highlights the necessity of reliable and stable internet access for microenterprises to fully leverage cloud-based mobile accounting applications. This aligns with the Facilitating

Conditions construct of UTAUT, which includes the availability of technical infrastructure (Venkatesh et al., 2003). Stefanov et al.'s (2024) study on a mobile personal finance application directly emphasizes the fundamental role of internet connectivity as a facilitator for its use, enabling real-time data synchronization. Dwamena's (2022) study, while focusing on record-keeping challenges in developing economies, indirectly supports this by noting how barriers like poor internet connectivity can prevent the adoption of beneficial digital tools.

Lastly, cost was found to be a significant positive predictor of Record-Keeping Quality ($\beta=0.190$, $p<0.001$). This suggests that the affordability of mobile accounting applications, including subscription fees and data charges, influences their adoption and consistent use, thereby impacting record-keeping quality. This finding resonates with the Diffusion of Innovations Theory, where Relative Advantage and Trialability are influenced by cost (Rogers, 2003). Dwamena's (2022) research on small businesses explicitly states that the perceived high cost of digital record-keeping systems is a primary reason for non-adoption. Mijić and Čebić's (2023) inclusion of Price Value in their UTAUT2 model further acknowledges that the cost-benefit analysis is an important aspect of technology adoption.

Conclusion

This study set out to investigate the effect of mobile accounting applications on the record-keeping efficiency of Nigerian microenterprises, focusing on the roles of App Usability, Training, Internet Connectivity, and Cost. The findings unequivocally demonstrate that all four independent variables are significant positive predictors of Record-Keeping Quality. Among them, App Usability stands out as the most influential factor, followed closely by Training. This implies that while the mere availability of mobile accounting applications offers potential, their actual impact on record-keeping quality is heavily contingent on how user-friendly they are, how well users are trained to utilize them, the reliability of the internet infrastructure, and the financial implications of their adoption. For instance, if an application is not intuitive, users may struggle with data entry, leading to inaccuracies or abandonment. Similarly, without proper training, microenterprise owners might underutilize advanced features, thereby missing out on the full benefits of the app. Intermittent or expensive internet connectivity can severely hinder real-time data synchronization and access to cloud-based features, causing frustration and inefficiency. Lastly, high subscription fees or data costs can deter adoption, especially for microenterprises operating on tight budgets. The study's results reinforce the theoretical underpinnings of the Technology Acceptance Model (TAM), which highlights the importance of perceived ease of use for technology acceptance; the Unified Theory of Acceptance and Use of Technology (UTAUT), particularly its emphasis on facilitating conditions like support and infrastructure; and the Diffusion of Innovations Theory, which explains how factors such as complexity and relative advantage (influenced by cost) affect the rate of adoption. It highlights that for mobile accounting applications to truly serve as a game-changer for microenterprises in developing economies like Nigeria, a holistic approach is required that goes beyond just providing the technology. This necessitates a focus on user-centric design that simplifies complex accounting tasks, robust support systems through comprehensive training and accessible help, and an enabling technological and economic environment that ensures reliable and affordable internet access, alongside cost-effective application solutions. Such a multifaceted strategy can transform record-keeping from a burdensome task into an empowering tool, ultimately leading to improved financial management, better access to formal credit, and sustainable growth for Nigerian microenterprises.

Recommendations

Based on the significant findings of this study, the following recommendations are put forth to improve the record-keeping quality of Nigerian microenterprises through the effective utilization of mobile accounting applications:

- i. Developers should focus intensely on designing mobile accounting applications that are highly intuitive, easy to learn, efficient to use, and provide clear feedback and error recovery mechanisms.
- ii. Design and deliver practical, hands-on training programs specifically tailored for microenterprise owners on how to effectively use mobile accounting applications. These programs should cover not only the technical aspects of the apps but also basic financial literacy and the importance of accurate record-keeping.
- iii. Actively seek out and participate in training programs on mobile accounting applications and financial management to enhance their digital and financial literacy.
- iv. Recognize the importance of stable internet access for efficient record-keeping and consider investing in reliable connectivity options where feasible.
- v. Carefully evaluate the features offered by various mobile accounting applications against their cost to choose solutions that provide the best value for their specific record-keeping needs.

By implementing these recommendations, stakeholders can collectively contribute to enhancing the record-keeping quality of Nigerian microenterprises, thereby fostering their growth, improving their access to finance, and contributing to overall economic development.

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