
STRATEGIC DETERMINANTS OF MOBILE BANKING APPS UPTAKE IN SELECTED BANKS IN NAIROBI CENTRAL BUSINESS DISTRICT KENYA

***¹Martha Mokeira, ²Dr Paul Gesimba & ³Prof Lily Njanja**

***Email of the Corresponding Author: nyaawo@yahoo.com**

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ABSTRACT

Statement of the Problem: The banking industry has made remarkable improvements in digital banking to provide user-friendly, fast, and efficient financial transactions arising from the evolution of information and communication technologies. Smartphones represent one of the major technological advancements enabling customers to carry out financial transactions remotely. However, as customers increasingly rely on mobile banking apps, various challenges including security concerns, cost barriers, complexity issues, network limitations, and motivational factors influence adoption and sustained usage. Understanding these strategic determinants is crucial for financial institutions to maximize mobile banking app uptake and build strong customer relationships.

Purpose of the Study: The study examined factors influencing mobile banking app uptake in Nairobi CBD banks, guided by TAM and UTAUT. Objectives focused on security, cost, complexity, network availability, and hedonic motivation.

Results: The study found that while banks have implemented functional mobile banking apps earning customer trust, adoption challenges persist including smartphone replacement cost barriers, psychological security concerns despite technical protections, ongoing assistance needs revealing incomplete complexity reduction, persistent network connectivity problems, and hedonic factors operating as supplementary rather than primary drivers.

Recommendation: Banks should optimize costs with transparent fees and device programs, invest in resilient networks and efficient apps, simplify interfaces with customer education, strengthen security via multi-factor authentication, and enhance engagement through referrals. Policymakers should set fee standards, promote digital literacy, and foster public-private partnerships to expand mobile banking access and inclusion in Kenya.

Keywords: *Strategic Determinants, Mobile Banking Apps, Uptake, Selected Banks, Nairobi Central Business District*

INTRODUCTION

The proliferation of the internet, social media, and smartphones has transformed how organizations engage with customers, prompting banks to replace traditional transaction channels such as ATMs and over-the-counter banking with mobile applications accessible at the click of a button (Zalloum, Alghadeer & Nusairat, 2019). This mirrors a global pattern in which smart banking applications have matured into essential service delivery channels, with adoption exceeding 70% in economies such as the United Kingdom, the United States, and Canada (Alam, Bose & Peulee, 2025). Kenya trails this trend considerably: a Kenya Bankers Association survey places local mobile banking app adoption at only 26%, a gap that motivates this study's inquiry into what drives, or constrains, uptake among Kenyan bank customers. Beyond convenience, digital finance has been credited with increasing the speed and lowering the cost of transactions, enhancing transparency and security, and drawing previously excluded populations into the formal financial system (Mothobi & Kebotsamang, 2024). Advances in cloud computing, blockchain, and artificial intelligence have further enabled banks to personalize customer experience while reducing operating costs (Shetty & Nikhitha, 2022). The COVID-19 pandemic accelerated this shift, pushing millions of customers in low- and middle-income countries toward mobile money and digital financial services for daily transactions, a trend that continued even after pandemic restrictions eased (Awanis et al., 2023).

Mobile banking applications represent a more demanding channel within this broader shift: unlike basic mobile banking, which can run on any handset without an internet connection, banking apps require both a smartphone and internet access, which limits their reach where connectivity is uneven (Mustafa, 2021; Ntisiful, Kwarteng, Jibril & Poesko, 2020). In Kenya, where smartphone penetration stands at 56.4% of the population (Communications Authority of Kenya, 2022/2023), banking apps have nonetheless become customers' most preferred digital banking feature, cited by 26% of respondents to a Kenya Bankers Association survey ahead of any other channel (Dyastiarini et al., 2023). Where adopted, these apps have advanced financial inclusion, convenience, and cost efficiency for previously unbanked populations, who use them for account management, bill payment, and money transfer; uptake nonetheless remains tempered by recurring system glitches, transaction delays, and security concerns, which carry real financial stakes given the sensitivity of the transactions involved (Asher, Jan, Tsramirsis & Khan, 2021).

Strategic determinants are the internal and external factors, ranging from organizational resources and culture to competitive and economic conditions, that shape how a strategy is formulated and implemented; identifying them matters because even a well-formulated strategy delivers little value if poorly executed. Intensifying competition, evolving customer expectations, and shifting demographics have pushed commercial banks to continually revisit their competitive strategies and build new competencies to safeguard their financial soundness. Within mobile banking specifically, banks and mobile network operators approach this pressure from different strengths and pursue a shared goal by different means: banks bring financial expertise but depend on operators' technological infrastructure, while operators hold the technology but lack financial-sector depth, making each simultaneously a partner and a rival to the other in the race to grow its mobile banking customer base (Mothobi & Kebotsamang, 2024).

The strategic determinants most consistently linked to mobile banking app adoption include perceived usefulness, perceived ease of use, perceived risk, social influence, and subjective norms. This study narrows its focus to five factors identified as most relevant to the Kenyan context, namely cost, security, complexity, hedonic motivation, and network availability, examined here in relation to app uptake among customers of selected banks. Cost carries particular weight among these and operates along three dimensions: the opportunity cost of foregoing alternative payment channels or investments, the upfront cost of an internet-capable smartphone, and the cost of individual transactions, any of which can draw customers toward mobile banking apps or push them back toward cash and conventional banking. This tension is especially pronounced in lower-income settings, where the price of a compatible smartphone remains a barrier to entry even when the app's long-run savings and convenience are well understood, making the cost-uptake relationship a central concern of this study.

PROBLEM STATEMENT

Growing and retaining customers is the key goal of commercial banks. Since 1999 when the first mobile telecommunication companies set up in Kenya, phones were used for making calls and sending messages but later the popular M-pesa service was launched in 2007 and banks partnered with this money transfer system to offer convenience to their customers. M-pesa was introduced to fill a gap for the unbanked and its rapid uptake made it a household name in Kenya. The strategic partnership between banks and M-pesa enabled banks to use the network of the mobile phone

service provide to reach customers. Unfortunately, compared to the potential benefits for the banking industry and the customers, the adoption of m-banking applications is not as high as one would expect. The uptake of mobile banking services is influenced by the rapid growth in the population of mobile phone users.

A study carried out by Kenya bankers in 2022 revealed that 26% of the respondents identified banking apps as their preferred banking feature. Despite being the most preferred channel of transacting, bank apps are used by less than half of the population with smartphones. According to the Banking Industry Customer Satisfaction Survey (2022), various financial service providers have introduced versatile banking software that has driven the preference for Apps, presiding over transactions that were previously carried out through internet and mobile banking channels. A study by Communications Authority of Kenya showed that the penetration rate of smartphones stood at 54% as at 2022. The percentage of people who use mobile banking apps is 26% hence there is a wide discrepancy. Other studies show that individuals using smartphones are already accustomed to mobile lifestyle and can easily use applications but that is not the case in Kenya. This is an indication that the banking applications continue to struggle to find customer acceptance. Growth seems to be slow in a high potential market. This study sought to ascertain to what extent cost affects the uptake of mobile banking apps.

The research concentrated exclusively on selected banks in Nairobi Central Business District, potentially overlooking adoption dynamics in rural banking environments, microfinance institutions, and mobile money platforms. Geographical limitation to Nairobi may restrict generalizability to other Kenyan regions with different infrastructure conditions, digital literacy levels, and smartphone penetration rates. The study's emphasis on five strategic determinants may not capture all factors influencing mobile banking adoption, potentially excluding variables such as trust in banking institutions, previous technology experiences, and cultural attitudes toward digital financial services. Moreover, reliance on perceptual data from management respondents introduced potential response bias, particularly regarding sensitive customer adoption information and competitive positioning. The study's focus on managerial perspectives may not fully capture actual customer experiences, adoption barriers, and usage patterns directly from end users.

To address these limitations, several mitigation strategies were applied throughout the study. The researcher ensured that the selected commercial banks represented diverse categories, including

both large and medium-sized institutions, to enhance the representativeness of findings within the Nairobi Central Business District. Although the study was geographically confined to Nairobi, the use of institutions with national operations helped capture perspectives reflective of broader market dynamics across Kenya. To minimize the exclusion of other influencing factors, the study incorporated open-ended questions that allowed respondents to highlight additional determinants beyond the five main variables. Potential response bias from management participants was mitigated through the assurance of confidentiality and anonymity, encouraging honest and objective responses. Furthermore, triangulation was achieved by comparing responses across marketing, ICT, and customer service departments, thereby improving data credibility. While customer-level perspectives were beyond the study's direct scope, managers selected for participation were those who interacted frequently with customers, ensuring that their views were grounded in actual client experiences.

LITERATURE

The study was anchored by Technology Acceptance Model that supports the dependent variable and the Unified Theory of Acceptance and Use of Technology model which supported the independent variables. The technology acceptance model suggests that perceived ease of use and perceived usefulness predict the information technology adoption by customers. TAM was first proposed by Fred Davis (1985) as a Massachusetts Institute of Technology doctoral thesis. Current literature points to the direction that TAM is a commonly cited model.

The high acceptance of is due to the fact that the model has a practical effectiveness and a strong theoretical assumption. The way customers come to adopt, use and accept a technology forms the illustration of the TAM model. The suggestion of the theoretical basis is that when customers are faced with a new invention, three main things determine their decision on when and how they will apply it. The determinants include user attitude towards usage, its perceived usefulness (PU), and perceived ease of use (PEOU). In addition, both perceived ease of use and perceived usefulness are influenced by some critical variables.

Different scholars have given their suggestions on the variables that determine the usefulness and ease of use of a technology. While investigating the implementation of Learning Management systems at the University of Saudi Arabia, Asiri, Mohamud, Abu-Bakar and Ayub in Alharbi and

Steve proposed two categories of such variables: - internal variables and external variables. Internal

variables consist of factors such as the attitude of the user, their pedagogical beliefs towards, and level of competency. The authors confirmed that a positive attitude towards technology will likely compel a customer to use the technology. Further, along similar lines with other studies, beliefs about e-learning were found to be important in determining the use of a technology. The study noted that the use of technology could be predicted by competency level, meaning that having the skills and knowledge to use a system will affect its utilization. On the other hand, external variables include those external barriers faced by users during utilization. Such factors are inclusive of social barriers, technological barriers and organizational barriers. Similarly, demographical factors like gender, computer self-efficacy, and levels of training (competency) are also used to predict technological usage. (Mugo, Njagi, Chemwei & Motanya., 2017).

However, TAM has limitations like neglecting crucial external factor like cost, structural barriers and social influence. Other factors not related to the theoretical model, including computer anxiety, enjoyment, compatibility, system quality, experience and computing support were incorporated due to the increased application and evolution of TAM.

Scholars Venkatesh, Morris, Dordon and Davis have put together UTAUT alongside other theoretical models to examine technology use and acceptance and related issues. The practical application of technology is influenced by actual intention as the theoretical model of UTAUT found out. The model suggests that four key factors affect the probability of using a technology. The four key factors, namely performance expectancy, effort expectancy, social influence and facilitating conditions moderated by experience, age, voluntariness of use and gender. The level of predictors on intention defines the moderation effects of gender, experience, age and voluntariness of use. Age has an effect on all the four predictors while gender moderates the relationships between social influence, effort expectancy and performance expectancy. On the other hand, experience affects the level of the relationships between facilitating conditions, social influence and effort expectancy. Voluntariness of use is an exclusive moderating effect for the relationship between behavioral intention and social influence (Marikian & Papagiannidis 2023).

However, in 2012, Venkatesh and his colleagues modified the UTAUT to UTAUT2 by including new constructs: price value, habit, and hedonic motivation, and dropped the voluntariness of use as a moderator and concluded that UTAUT2 better explain consumer intention. The study design is in line with the UTAUT2 but adopts specifically the cost, security, complexity and hedonic motivation (HM). Limitations of UTAUT include: it focuses on intention rather than actual use, it is overly complex and has context blindness.

A study carried out in Ghana found out that overall, perceived transaction cost is a major obstacle to the adoption of mobile banking technology. By venturing into the financial markets, mobile network operators employ the strategy of lateral diversification which is among the list of ventures that are very risky and costly. For the strategy to work they require financial products knowledge like customer behavior, regulation and infrastructure, and should also have a strategy to attract customers. Mobile network operators have a major synergy at the strategy which is knowing their current customers well and the customers also know them. This serves as a big advantage because it helps them avoid the asymmetric information problem.

According to Namumwa (2019), Kenya tops the continent when it comes to internet usage and smartphone penetration. The phone is important to most activities and transactions. Active mobile (SIM) subscriptions as at 31st March 2023, increased from 65.7million to 66.1 million reported in the final quarter. This translated to a mobile (SIM) penetration rate of 130.5 percent (data from communication authorities Kenya).

METHODOLOGY

A cross-sectional study design was used where data was collected from multiple individuals at one place. In a cross-sectional study participant were selected based on particular variables. The researcher aimed to understand the prevalence of characteristics and assessed the distribution of certain factors within a population, and explored the relationship between variables at a single point in time. The study did not involve variables manipulation and was carried out at a particular point in time and it often looked at the prevailing characteristics in a given population. The cross-sectional study approach acted as a glimpse of a homogenous population at a given point in time and did not involve longitudinal tracking of individuals. The selection method used in the study was nonprobability method, in which respondents were selected based on subjective judgment,

that is from commercial banks. The population was key because the researcher needed to get accurate information from the sub divisions. The marketing manager, the customer relation manager and the ICT manager interacted with the mobile banking app platform frequently thus making them the target population in the study. The study targeted a population of 60 respondents from commercial banks in Nairobi central business district. Collection of primary data was carried out through questionnaires that were emailed to the respondents.

The correlation between the dependent variable and the independent variables was determined in the study. The researcher analyzed descriptive statistics using correlation and inferential statistics using multiple regression. Regression analysis examined the relationship a dependent variable and one or more independent variables. Correlation was an assessment tool that measured the correlation between items to determine the relationship among them. Correlation determined the degree of the relationship among variables. It measured the direction and strength of the linear relationship between two variables. The values of the correlation coefficient ranged from -1 to +1, with 1 depicting a very strong, weak negative relationship and +1 indicating a very strong positive relationship

FINDINGS AND DISCUSSION

This section presents the quantitative findings of the study on the strategic determinants of mobile banking app uptake in selected banks in Nairobi Central Business District, Kenya. The findings are organized sequentially to cover demographic characteristics of respondents, descriptive statistics for the independent and dependent variables, correlation analysis, and multiple linear regression analysis, each of which is discussed in relation to the study objectives and existing empirical literature.

DEMOGRAPHIC INFORMATION

The study targeted marketing managers, ICT managers, and customer relations managers in selected banks in Nairobi CBD, who were identified as most knowledgeable about mobile banking app adoption given their regular interaction with customers. Table 1 presents the demographic characteristics of the 58 respondents who participated in the study.

Table 1: Demographic Characteristics of Respondents

Demographic Variable	Category	Frequency	Percent (%)
Gender	Female	23	39.7
	Male	35	60.3
	Total	58	100.0
Position in the Bank	Customer Relations Manager	21	36.2
	ICT Manager	13	22.4
	Marketing Manager	24	41.4
	Total	58	100.0
Duration in Current Position	Less than 5 years	17	29.3
	More than 5 years	41	70.7
	Total	58	100.0
Supervisory Responsibilities	No	10	17.2
	Yes	48	82.8
	Total	58	100.0

The results in Table 1 show that 35 respondents (60.3%) were male while 23 (39.7%) were female, reflecting the current composition of managerial positions in Kenya's banking sector, though the near-40% female representation indicates growing gender diversity in these roles. Regarding position, marketing managers constituted the largest group at 41.4% (n = 24), followed by customer relations managers at 36.2% (n = 21) and ICT managers at 22.4% (n = 13), a distribution that ensured the study captured technical, marketing, and customer-facing perspectives simultaneously. The majority of respondents, 41 (70.7%), had served in their current positions for more than five years, indicating a sample with substantial institutional experience and direct exposure to the evolution of mobile banking services over time, while the remaining 17 (29.3%) brought more contemporary perspectives on current adoption trends. Finally, 48 respondents (82.8%) held supervisory responsibilities, confirming that the study successfully reached senior-level managers with strategic oversight and decision-making authority over mobile banking initiatives within their respective banks.

INFLUENCE OF COST ON UPTAKE OF MOBILE BANKING APP

The second objective sought to evaluate the influence of cost on the uptake of mobile banking apps in selected banks in Nairobi CBD. Respondents rated seven cost-related statements on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Table 2 presents the descriptive statistics for these statements.

Table 2: Descriptive Statistics (Influence of Cost on Uptake of Mobile Banking App)

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Dev.
Mobile banking app is cost saving than conventional banking.	3.40	8.60	5.20	70.70	12.10	3.79	0.89
Mobile banking App transactions are affordable.	1.70	10.00	3.40	52.10	32.80	4.24	0.68
Using mobile banking apps eliminates the need for physical visits to the bank, saving transportation costs.	0.00	3.40	19.00	50.00	27.60	4.02	0.78
Customers can afford to replace a smartphone as soon as they lose or damage it.	6.90	19.00	8.60	43.10	22.40	3.55	1.23
Affordable smartphones make it easier for customers to access mobile banking apps.	0.00	8.60	1.70	67.20	22.40	4.03	0.77
Transacting on mobile banking app saves time taken to travel to the bank.	6.90	5.20	10.30	63.80	13.80	3.72	1.01
Mobile banking App is the most affordable alternative channel of transacting.	1.70	3.40	6.90	55.20	32.80	4.14	0.83
Aggregate Score						3.93	0.88

The findings in Table 2 show that cost exerts a strong positive influence on mobile banking app uptake, with an aggregate mean of 3.93 (SD = 0.88). The highest-rated statement was that mobile banking app transactions are affordable, where 84.90% of respondents agreed or strongly agreed (mean = 4.24, SD = 0.68), indicating that banks have successfully minimized or eliminated transaction fees to position their apps as the most cost-effective channel available. Similarly,

89.60% agreed that affordable smartphones make it easier for customers to access mobile banking apps (mean = 4.03, SD = 0.77), reflecting the positive impact of Kenya's expanding budget smartphone market on adoption. The statement that using mobile banking apps eliminates the need for physical bank visits thereby saving transportation costs was agreed to by 77.60% of respondents (mean = 4.02, SD = 0.78), underscoring the opportunity cost savings that are particularly valued in a congested urban environment like Nairobi CBD. The most contentious finding concerned smartphone replacement affordability, where only 65.50% agreed that customers can readily replace a lost or damaged device (mean = 3.55, SD = 1.23); this item's highest standard deviation reflects significant income heterogeneity across customer segments, pointing to device replacement as the single most unresolved cost barrier to sustained mobile banking app use among lower-income users.

DESCRIPTIVE STATISTICS OF UPTAKE OF MOBILE BANKING APP

This section examines the dependent variable, measuring the extent to which customers have adopted and are actively using mobile banking apps. Respondents rated seven uptake-related statements on a five-point Likert scale. Table 3 presents the descriptive statistics for these statements.

Table 3: Descriptive Statistics (Uptake of Mobile Banking App)

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Dev.
Customers trust the mobile banking App to handle their financial transactions securely.	5.80	8.60	3.80	31.60	50.20	4.10	0.52
Customers find the mobile banking App useful for meeting their banking needs.	3.20	17.60	3.20	40.10	35.90	3.97	1.06
The mobile banking App is compatible with customers' smartphones and lifestyles.	7.00	15.50	8.00	28.90	40.60	3.85	1.13
Customers are satisfied with the overall performance of the mobile banking App.	6.40	8.60	6.40	27.30	51.30	4.18	0.84
The number of customers actively using the mobile banking App is increasing.	3.20	11.30	2.10	33.70	49.70	4.09	0.68

Customers frequently use the mobile banking App for various banking transactions.	1.60	9.10	3.70	16.60	69.00	3.79	0.99
Customers prefer the mobile banking App over other banking channels.	9.10	7.00	6.10	22.40	55.40	4.14	0.77
Aggregate Score						4.02	0.85

The findings in Table 3 reveal a positive uptake trend across the selected banks, as reflected by an aggregate mean of 4.02 (SD = 0.85). The highest mean score was recorded for overall performance satisfaction (mean = 4.18, SD = 0.84), with 78.60% of respondents in agreement, indicating that banks have broadly succeeded in delivering fast, reliable, and functional mobile banking experiences. Trust in the app's ability to handle transactions securely was agreed to by 81.80% of respondents and recorded the lowest standard deviation of the section (mean = 4.10, SD = 0.52), confirming strong consensus that security trust is a foundational prerequisite for adoption. The growing user base was acknowledged by 83.40% of respondents (mean = 4.09, SD = 0.68), while 77.80% agreed that customers prefer mobile banking apps over alternative channels such as ATMs, branch banking, and USSD services (mean = 4.14, SD = 0.77), suggesting that apps have established clear channel preference among current users. The lowest mean was recorded for compatibility with customers' smartphones and lifestyles (mean = 3.85, SD = 1.13), where 22.50% of respondents disagreed, pointing to residual adoption barriers related to older device models, insufficient storage, and operating system limitations that continue to exclude some potential users from the mobile banking app ecosystem.

CORRELATION ANALYSIS

Pearson correlation analysis was conducted to examine the direction and strength of the linear relationships between the five strategic determinants cost, security, complexity, hedonic motivation, and network availability and the dependent variable, uptake of mobile banking apps. Table 4 presents the correlation matrix.

Table 4: Pearson Correlation Analysis

Variable	Uptake	Cost	Security	Complexity	Hedonic Motivation	Network Availability
Uptake of Mobile Banking Apps	1.000					
Cost	.587**	1.000				
Security	.467**	.319*	1.000			
Complexity	.396**	0.053	0.025	1.000		
Hedonic Motivation	.454**	0.244	.339**	0.178	1.000	
Network Availability	.540**	.370**	0.233	0.228	0.231	1.000
Sig. (2-tailed)	.000	.000	.000	.002	.000	.000

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

The results in Table 4 show that all five strategic determinants are positively and significantly correlated with uptake of mobile banking apps. Cost recorded the strongest correlation ($r = .587$, $p = .000$), confirming that improvements in transaction affordability, smartphone accessibility, and overall cost-effectiveness are the most powerful drivers of adoption. Network availability was the second strongest predictor ($r = .540$, $p = .000$), indicating that reliable connectivity, minimal downtime, and prompt transaction processing are critical technical enablers of sustained use. Security followed ($r = .467$, $p = .000$), reflecting customer sensitivity to PIN protection, authentication robustness, and protection against financial loss from device compromise. Hedonic motivation ($r = .454$, $p = .000$) demonstrated that enjoyment, social influence, and the pleasurable aspects of the user experience meaningfully complement functional benefits in driving adoption decisions. Complexity recorded the weakest but still significant relationship ($r = .396$, $p = .002$), indicating that reduced interface difficulty, simplified registration, and accessible in-app support incrementally widen the adoption base, particularly among less digitally literate customer segments. These findings align with Hakimi, Jaffar and Aziz (2023), who identified perceived transaction cost as the primary obstacle to mobile banking adoption, and with Ntisiful, Kwarteng, Jibril and Poesko (2020), who found that inconsistent internet connectivity in less digitized environments constrains app-based mobile banking uptake.

REGRESSION ANALYSIS

Multiple linear regression was conducted to determine the predictive contribution of each strategic determinant to the uptake of mobile banking apps while controlling for the other variables. Tables 5, 6, and 7 present the model summary, ANOVA results, and regression coefficients respectively.

Table 5: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.804	0.646	0.612	0.186

^a Predictors: (Constant), Network Availability, Complexity, Security, Hedonic Motivation, Cost.

Table 6: ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.299	5	0.660	19.013	.000
Residual	1.804	52	0.035		
Total	5.103	57			

^a Dependent Variable: Uptake of Mobile Banking Apps. ^b Predictors: (Constant), Network Availability, Complexity, Security, Hedonic Motivation, Cost.

Table 7: Regression Coefficients

Variable	B	Std. Error	Beta (β)	t	Sig.
(Constant)	-0.271	0.460		-0.589	0.559
Cost	0.308	0.078	0.365	3.951	.000
Security	0.180	0.073	0.225	2.468	.017
Complexity	0.213	0.065	0.282	3.291	.002
Hedonic Motivation	0.147	0.073	0.181	2.001	.041
Network Availability	0.221	0.083	0.246	2.666	.010

^a Dependent Variable: Uptake of Mobile Banking Apps.

Table 5 shows that the five strategic determinants collectively explained 64.6% of the variance in mobile banking app uptake ($R^2 = 0.646$, Adjusted $R^2 = 0.612$, $R = .804$), indicating strong model explanatory power and confirming that the conceptual framework captures the dominant forces shaping adoption in Nairobi's banking sector. The standard error of estimate of 0.186 reflects good model precision with minimal prediction error. Table 6 confirms that the overall regression model was statistically significant ($F = 19.013$, $p = .000$), meaning that the five predictors jointly explain a real and non-random portion of the variation in mobile banking app uptake, and that the model is appropriate for drawing inferences about the determinants of adoption in the study population.

The individual regression coefficients in Table 7 reveal that cost was the strongest predictor of mobile banking app uptake ($B = 0.308$, $\beta = 0.365$, $t = 3.951$, $p = .000$), followed by network availability ($B = 0.221$, $\beta = 0.246$, $t = 2.666$, $p = .010$), complexity ($B = 0.213$, $\beta = 0.282$, $t = 3.291$, $p = .002$), security ($B = 0.180$, $\beta = 0.225$, $t = 2.468$, $p = .017$), and hedonic motivation ($B = 0.147$, $\beta = 0.181$, $t = 2.001$, $p = .041$). All five predictors were statistically significant at the 0.05 level, confirming that each determinant makes an independent contribution to adoption beyond the effects of the others. The ordering of the coefficients suggests that while emotional and experiential factors matter, Kenyan bank customers fundamentally make adoption decisions on economic and infrastructural grounds, with the cost-benefit calculus and network reliability acting as the gatekeepers to widespread mobile banking app uptake.

CONCLUSION

The study concludes that the uptake of mobile banking apps in selected banks in Nairobi Central Business District is significantly shaped by five strategic determinants cost, network availability, security, hedonic motivation, and complexity which together explain 64.6% of the variance in adoption ($R^2 = 0.646$, $F = 19.013$, $p = .000$). Cost emerged as the most powerful driver ($B = 0.308$, $p = .000$), as customers' adoption decisions are fundamentally anchored in the economic advantages that mobile banking apps offer relative to conventional banking, including reduced transaction fees, elimination of transportation costs, time savings, and the growing accessibility of affordable smartphones; however, the unresolved concern around smartphone replacement affordability (mean = 3.55, SD = 1.23) signals a persistent exclusion risk for lower-income segments that banks must address through deliberate affordability strategies. Network availability was the second strongest predictor ($B = 0.221$, $p = .010$), confirming that even a well-designed and

affordable app cannot sustain adoption where connectivity is unreliable, making investment in seamless transaction processing and minimal downtime a prerequisite for retention. Security ($B = 0.180$, $p = .017$) and complexity ($B = 0.213$, $p = .002$) further influence adoption by shaping customer confidence and usability perceptions respectively, while hedonic motivation ($B = 0.147$, $p = .041$) plays a supplementary role in reinforcing continued engagement once functional and economic thresholds are met. Taken together, the findings validate both the Technology Acceptance Model and the Unified Theory of Acceptance and Use of Technology as explanatory frameworks for mobile banking adoption in a developing economy context, and they underscore that achieving broad and sustained uptake requires banks to pursue holistic strategies that simultaneously address cost transparency, infrastructure reliability, security robustness, interface simplicity, and user experience quality.

RECOMMENDATIONS

Banks should prioritize cost reduction strategies by eliminating or substantially minimizing transaction fees on mobile banking apps, and should partner with device manufacturers and mobile network operators to introduce affordable smartphone financing or insurance schemes that lower the device replacement barrier for lower-income customers. Concurrently, banks and telecommunications providers should collaborate to invest in network infrastructure, particularly capacity upgrades during peak usage hours, to ensure transaction reliability and minimize downtime that erodes customer trust. Regular security audits, multi-factor authentication, and transparent communication of protective measures should be institutionalized to sustain the high levels of security trust identified in this study, while user interface teams should engage in continuous usability testing across diverse demographic segments including older users and those with limited digital literacy to iteratively reduce complexity and close the digital skills gap that limits adoption among the broader population.

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