Developing a Model to Measure the Impact of Digital Banking Adoption on Customer Retention in Zimbabwe's Commercial Banks

Moses Zingwina16, Tafadzwa Jimu17, and O. Kurauone18

Abstract

The growing significance of digital adoption of banking as a determinant of competitive advantage has become a major focus of interest for research studies and bank management practice globally. This study sought to develop a contextual model that assesses the impact of digital banking adoption on customer retention by Zimbabwean commercial banks. The research was conducted under three main objectives, namely to investigate the relationship between digital banking service adoption and customer retention levels, to assess the mediating effect of customer satisfaction on such a relationship, and to construct a predictive model that can be utilized by banks to improve retention tactics. With a panel study design between 2014 and 2024, the study employed mixed-methods research that entailed quantitative regression analysis together with qualitative thematic analysis of customer feedback, bank strategy reports, and regulatory reports. It found that customer retention was significantly affected by digital banking adoption with customer satisfaction dimensions such as ease of use, speed of transaction, and perceived security moderating these effects. Furthermore, studies showed that despite the majority of Zimbabwean commercial banks embracing core digital platforms such as online portals and mobile apps, variability in digital service quality and infrastructural reliability undermined retention efforts. Environmental factors such as institutional trust, financial literacy levels, and internet penetration were also cited as important moderating variables affecting the success of digital banking efforts. Based on these findings, the study designed a realistic model for commercial banks to anticipate and optimize customer retention performance

[16] Zimbabwe Open University
[17] Zimbabwe Open University
[18] Zimbabwe Open University

using systematic digital engagement, quality control processes, and tailored communication practices. The study gave realistic recommendations to policymakers and practitioners, particularly on improving digital infrastructure, promoting customer-oriented design inclusion in digital platforms. The developed model adds empirical weight to the growing scholarship on digital banking transformation in sub-Saharan Africa and provides actionable strategies for enhancing customer loyalty in Zimbabwe's competitive banking environment.

Key Words: Digital adoption, banking, Customer Retention, Commercial Banks.

Introduction

In today's rapidly evolving financial landscape, digital banking adoption has emerged as a strategic imperative for commercial banks seeking to retain customers, improve service delivery, and sustain profitability. Driven by information technology innovation, heightened customer expectations, and competitive pressures from fintech newcomers, banks in developing and developed economies alike have shifted toward offering seamless digital offerings. But customer retention dynamics in the digital bank channel are complex, involving not just the availability of digital channels but also user experiences, perceptions of value, and trust in digital interfaces. With increasing digital interactions replacing personal transactions, drivers of customer loyalty and retention are increasingly shaped by the degree to which banks leverage digital channels to meet customers' diverse needs. The present study therefore seeks to empirically investigate the effect of digital banking adoption on customer retention in Zimbabwean commercial banks and to develop a predictive model with actionable implications for policymakers and practitioners.

While a significant body of research has been conducted on the overall impact of digital transformation throughout the world's banking sector, there remains an

enormous empirical gap in terms of how digital banking specifically impacts customer retention within the Zimbabwean market. Zimbabwe's commercial banking sector is undergoing profound digitalization, spurred by both customer demand and economic imperatives, yet retention challenges persist amid infrastructural limitations, low digital literacy among segments of the population, and gaps in perceived service quality. The country's experience provides a unique environment to explore the causal links between digital banking adoption and retention behaviour. With the fusion of quantitative and qualitative methods, this study aims to contribute not only to the statistical correlations between variables but to the experiential realities that define digital engagement by bank customers in Zimbabwe.

Background

Across the world, the uptake of digital banking services has picked pace, with industry reports suggesting that in 2023, more than 3.6 billion adults were engaged users of digital banking platforms, which is more than half of the global adult population (Statista, 2023; McKinsey, 2022). Technologies like mobile banking apps, biometric security, AI-powered customer service, and real-time fund transfers have revolutionized customer experiences in the banking industry (Accenture, 2023). In regions such as North America, Europe, and Asia, banks that have successfully adopted these technologies have had much higher customer retention and loyalty levels (PwC, 2023; Deloitte, 2022). For example, Scandinavian banks have utilized predictive analytics and natural digital ecosystems to achieve customer churn ratios of less than 5%, supported by robust cybersecurity environments and personalized financial offerings (EY, 2023).

On the other hand, Africa's banking markets face a double challenge of expanding access and improving quality of digital engagement. According to the African Development Bank (AfDB, 2023), only 40% of adults in the region use digital banking products and services, and the disparities are initiated by varying levels of internet penetration, cellular coverages, as well as levels of institutional trust. Zimbabwe mirrors the broader regional pattern whereby the central bank and

major commercial players such as CBZ Bank, FBC Bank, and Steward Bank have also made substantial investments in digital platforms in order to keep up with growing demand (RBZ, 2024). Nonetheless, long-standing challenges such as inconsistent internet connectivity, security issues, and weak customer support services continue to erode customer satisfaction and retention (Mudzengi & Gondo, 2022). Though digital financial services as demonstrated by mobile money platforms like Ecocash have lived up to their potential in Zimbabwe, commercial banks are still far from realizing the full potential of digitalization to boost long-term customer loyalty.

Future literature also shows that the success of digital banking adoption lies in contextual factors more than technology itself. Studies conducted in Kenya, Nigeria, and Ghana indicate that customer satisfaction, fueled by usability, perceived security, and reliability of services, mediates the adoption of digital banking and retention outcomes (Okeke et al., 2022; Mensah & Agyei, 2023). Furthermore, socio-cultural attitudes toward technology, financial literacy, and regulatory environment all play a role in the way customers interact with digital banking systems (Chigova et al., 2022). In this context, Zimbabwe provides an excellent case study to develop a niche model that captures the intricate relationship between technology adoption and customer loyalty. Understanding these relationships is crucial for banks looking to achieve sustainable growth in a more digitalized financial world.

Problem Statement

Despite the very high uptake of digital banking platforms by Zimbabwean commercial banks, customer retention remains a challenge, with most customers registering highly volatile loyalty patterns or switching to alternatives like fintech competitors. While digital banking ensures ease and accessibility, the evidence of its association with long-term customer retention in the Zimbabwean context is not linear or sufficiently supported. Past studies have the tendency to concentrate on the technical application of the digital platforms but exclude the mediating factors like customer satisfaction, perceived value of the service, and the impact of

contextual factors like internet stability, financial acumen, and institutional trust. This lack of comprehensive models leaves practitioners with very few empirical clues about how to design digital strategies that effectively translate to long-term customers.

Certain commercial banks in Zimbabwe rolled out mobile banking apps, online payment websites, and USSD-based services, but inconsistency in user experience, technical issues, and low digital illiteracy levels of the rural and older customer bases have stalled these efforts (Mutambanadzo & Zvoushe, 2023). Furthermore, despite digital money operators like Ecocash having reported relatively higher rates of retention, their superiority indicates the competitive challenge to old banks that have not yet maximized their digital products (Mupamhadzi, 2023). Consequently, the absence of a clear, predictive model with which to reckon the extent to which digital adoption affects retention in specific contextual conditions is a necessary knowledge gap. Without such a framework, banks experience constant depletion of their customer bases, compromising financial stability as well as market competitiveness in an increasingly digitalized economy.

Against such a lacuna, this research recommends framing an integrated model discovering the causal mechanisms between the adoption of digital banking and customer retention, covering mediating variables such as customer satisfaction and moderating variables such as quality of technological infrastructure as well as regulatory support. By adopting a mixed-methods approach and drawing on panel data spanning a decade, this research aims to provide actionable insights for Zimbabwe’s commercial banking sector. Ultimately, the findings will equip policymakers, bank executives, and digital strategists with the tools to optimize retention strategies in the face of digital transformation challenges and opportunities.

Research objectives

The following precise research goals informed this research:

1. To investigate the relationship between digital banking uptake and customer retention for commercial banks in Zimbabwe.
2. To examine the mediating role of customer satisfaction in the relationship between digital banking uptake and customer retention.
3. To identify the moderating role of contextual factors like access to the internet, financial literacy, and institutional trust in the relationship between digital banking uptake and customer retention.
4. To come up with a predictive model for Zimbabwean commercial banks to quantify and improve customer retention results using digital banking uptake.

Research Hypotheses

The following hypotheses were created to be tested in this research:

H1: There is a positive significant relationship between digital banking uptake and customer retention among commercial banks in Zimbabwe.

H2: Customer satisfaction plays a significant mediating role in the association between digital banking uptake and customer retention among commercial banks in Zimbabwe.

H3: Contextual factors such as internet accessibility, financial literacy, and institutional trust significantly moderate the relationship between digital banking adoption and customer retention in Zimbabwe's commercial banks.

H4: The developed predictive model will significantly improve the ability of Zimbabwe's commercial banks to measure and enhance customer retention through digital banking adoption.

Empirical Literature Review

One study by Hernández-Ortega (2017) titled "The Role of Post-Adoption Beliefs in the Continued Use of Mobile Banking Services: A Comparison between Developing and Developed Countries" in Mexico and Spain sought to determine the influence of post-adoption beliefs on the continued use of mobile banking services. The study followed a quantitative research design using structural equation modelling (SEM) to analyze survey data collected from 482 mobile banking service users in both countries. Hernández-Ortega (2017) determined that perceived usefulness, ease of use, and trust were effective predictors of future use of mobile banking services in both settings. However, trust played a more significant role in developing countries due to prevailing doubts about the stability of technologies and confidentiality of data. This study emphasized that while technological features are important globally, trust by the user remains a driver, especially in the developing world. The limitation it observed was the particular focus on mobile banking rather than overall digital banking ecosystems, and suggested that future studies include broader digital platforms in their analysis. This current study bridges that gap by including comprehensive digital banking channels such as mobile apps, internet banking websites, and USSD services to give a more complete view of the digital adoption-customer retention nexus.

Such a leading global study was conducted by Alalwan et al. (2018) "Mobile Banking Adoption in the United Kingdom: Extending UTAUT2 with Trust" which investigated the impact of trust on influencing the adoption of mobile banking services by UK customers. The research used an extended Unified Theory of Acceptance and Use of Technology (UTAUT2) framework to test the responses of 356 bank customers. Alalwan et al. (2018) confirmed that performance expectancy, effort expectancy, social influence, and facilitating conditions positively affected the adoption of mobile banking, but trust was the most powerful predictor of adoption intention and use behavior. The research recommended that commercial banks ought to ramp up cybersecurity measures, simplify user interfaces, and invest in digital literacy programs. One limitation of this study was

that it was cross-sectional in nature and failed to document evolving trends in customer behavior over time. The present study bridges this limitation by utilizing longitudinal panel data across a decade (2014-2024), offering a temporal perspective on how digital banking adoption patterns influence customer retention over time within Zimbabwe's commercial banking sector.

Martins, Oliveira, and PopoviÄ (2014) in their paper "Understanding the Internet Banking Adoption: A Unified Theory of Acceptance and Use of Technology and Perceived Risk Application" in Portugal employed SEM to analyze data from 253 clients of the principal Portuguese banks. Their study demonstrated that perceived risk exerted a negative effect on the intention to use internet banking, while perceived usefulness and trust had a significant positive effect on it. Unexpectedly, they found that perceived risk can be countered by high levels of institutional trust and transparent communication on the part of the banks. The authors emphasized that the management of perceived risk must be a focal strategy for banks in their bid to enhance the adoption rate. The limitation recognized was the homogeneous nature of the sample that was predominantly urban, technology-literate customers. The current study in Zimbabwe broadens the focus of investigation to respondents from varied demographic and socio-economic backgrounds, both urban and peri-urban in order to derive more comprehensive findings relevant to customer retention initiatives.

Within the African context, a seminal study by Shaikh and Karjaluoto (2015), "Mobile Banking Adoption in Emerging Economies: A Literature Review," systematically reviewed empirical evidence from Sub-Saharan African countries, including Kenya, Nigeria, and Ghana. The study consolidated findings from over 40 empirical studies, highlighting the key factors influencing mobile banking adoption, including perceived ease of use, perceived usefulness, cost, trust, and facilitating conditions. They concluded that mobile banking adoption in African countries is largely driven by practical considerations like affordability, access to mobile devices, as well as network quality, alongside socio-cultural factors like peer influence. The study recommended that African commercial banks

collaborate with telecommunication operators to optimize digital service delivery. Shaikh and Karjaluoto (2015), however, noted that most empirical studies concentrated on initial adoption rather than long-term customer retention. The current study directly addresses this gap by focusing on how digital banking adoption impacts sustained customer loyalty and retention in Zimbabwean commercial banks.

Similarly, Osei-Assibey (2015) in the study "What Drives Behavioral Intention of Mobile Money Adoption? The Case of Ghana" utilized survey data from 1,200 respondents across urban and rural regions of Ghana to explore behavioral intentions behind mobile money usage. Using logistic regression analysis, the findings showed that perceived usefulness, ease of use, and trust were predictors of adoption, while perceived cost was a significant inhibitor. Importantly, the study discovered the rural-urban divide in the adoption of digital financial services because rural customers recorded lower adoption levels than their urban counterparts as a result of infrastructural challenges and low digital literacy. As insightful as this research has been, it was constrained in the sense that it focused on mobile money as opposed to comprehensive digital banking platforms. The present study builds on these observations by incorporating several digital banking services beyond mobile money, including internet banking and mobile applications offered by Zimbabwean commercial banks, to give a holistic view of digital uptake and its effects on customer retention.

The other more recent study by Wamalwa and Oluoch (2020) titled "Determinants of Digital Banking Adoption Among Commercial Banks' Customers in Kenya" conducted in Nairobi applied descriptive and inferential statistical techniques on data obtained from 384 respondents. The study confirmed perceived ease of use, perceived usefulness, and trust in technology as key determinants influencing digital banking adoption. In addition, demographic factors of age, education level, and income significantly impacted adoption behavior. The authors recommended that banks invest in continuous digital literacy programs to promote usage across different segments of customers. However, their study was largely descriptive and

lacked the predictive modeling that strategic decision-making requires. This research fills that void by not only describing determinants but also developing a predictive model to guide Zimbabwean commercial banks on how to achieve better customer retention through strategic digital banking adoption.

At the local level in Zimbabwe, Mudzengi and Gondo (2022) conducted an exploration entitled "The Impact of Mobile Banking on Customer Retention: Evidence from Commercial Banks in Zimbabwe," founded on survey data collected from 410 customers in Harare. The study employed multiple regression analysis in establishing the influence of the adoption of mobile banking on customer satisfaction and customer retention. Findings showed that the adoption of mobile banking positively influenced customer retention, with customer satisfaction serving as a mediating factor. The study, nevertheless, observed infrastructural limitations and inefficient regular service delivery as major challenges affecting customer satisfaction. Further, the authors recommended that banks improve digital platform stability and ease of use of customer support systems to foster customer loyalty. They concentrated on mobile banking only and not internet banking and other digital platforms that are part of the contemporary banking experience. The current research extends this foundation by examining a number of digital banking services and establishing a predictive model specific to the banking sector in Zimbabwe.

Moreover, Mutambanadzo and Zvoushe's (2023) study, "Digital Banking Platforms and Customer Retention in Zimbabwe's Commercial Banking Sector," utilized survey questionnaires administered to 300 respondents in two big commercial banks. Using path analysis, they determined that there were noteworthy relationships between perceived security, platform usability, and customer retention. Among the key findings was that perceived insecurity of online transactions deterred customers from full utilization of digital platforms. Although comprehensive, the study was limited in its small sample size and in not being able to include outside moderating forces such as internet connectivity and financial literacy. Expanding on these results, this study incorporates these moderating

forces and thus offers a more nuanced, contextualized model for understanding the link between digital banking adoption and customer retention in Zimbabwe.

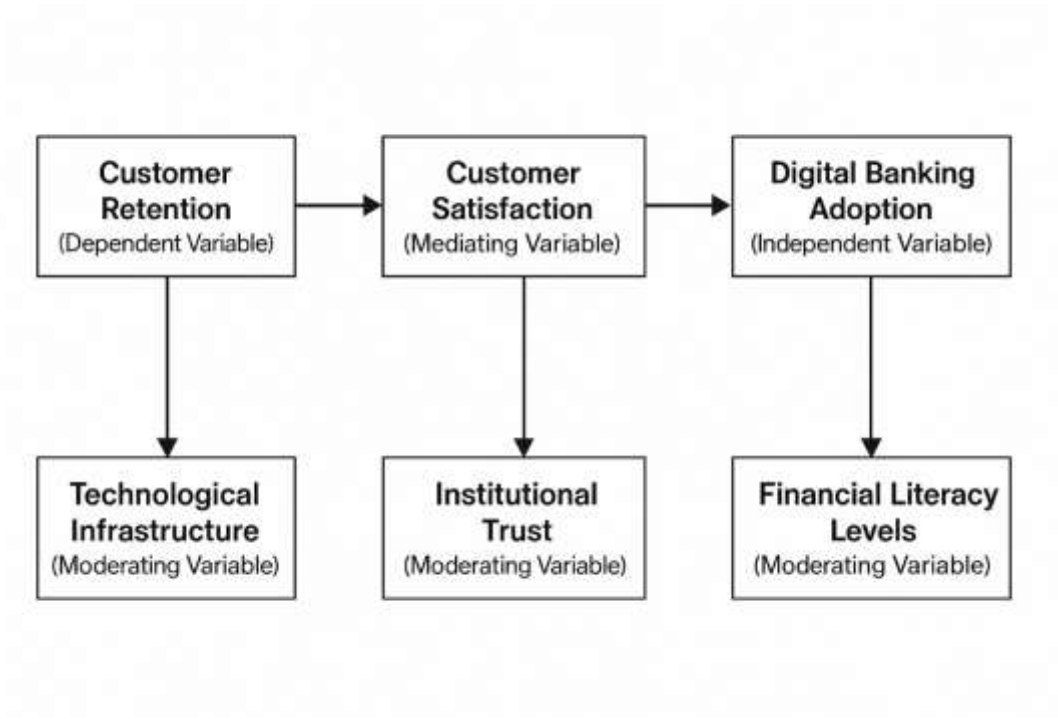
Lastly, Chigova et al.'s (2022) "Barriers to Digital Banking Adoption in Zimbabwe" investigated the infrastructural and institutional factors impeding the growth of digital banking in Zimbabwe. Using qualitative methods, including interviews with bank managers and focus group discussions with customers, the study identified network unreliability, customers' low digital literacy levels, and insufficient trust in digital channels as major barriers. While the research provided us with a vision for barriers, it fell short of quantitatively linking such barriers to actual customer retention outcomes. The current research surmounts this limitation by integrating quantitative methodology and qualitative insights to produce a more balanced, empirical analysis of the way that such barriers influence customer retention through digital adoption.

The empirical research surveyed here together highlights the growing role of digital banking in enhancing financial inclusion and improving the quality of service delivery in global, regional, and local contexts. There are, however, areas of significant gaps. Globally, many studies have concentrated on the early adoption of digital banking channels, with fewer on long-term customer retention patterns, particularly in emerging markets. Regionally, most African studies concentrate on mobile money instead of comprehensive digital banking ecosystems, thereby neglecting inherent services such as internet banking and mobile applications provided by formal commercial banks. Locally, Zimbabwean studies, while informative, either zoom in specifically on specific digital services (such as mobile banking alone) or fail to incorporate moderating variables such as infrastructure quality and financial literacy that have significant bearing on digital uptake outcomes.

This study bridges these gaps through the provision of a longitudinal, comprehensive, and predictive analysis of the influence of digital banking uptake on customer retention in Zimbabwe's commercial banks. By integrating various digital banking services, the consideration of mediating roles of constructs like

customer satisfaction, as well as incorporating moderating contextual factors, this study contributes a robust empirical model that transcends theoretical, methodological, and contextual weaknesses evident in current research. Accordingly, the findings are poised to inform both practical banking policy and policy interventions to improve Zimbabwe's digital financial ecosystem.

Conceptual framework



Source: Researchers, 2025

Theoretical Framework

The conceptual foundation of this study is grounded in three well-established theories that collectively explain the relationship between the adoption of digital banking, customer satisfaction, and customer retention in Zimbabwean commercial banks. They are the Technology Acceptance Model (TAM), the Expectation Confirmation Theory (ECT), and the Resource-Based View (RBV). These ideas not only prove the structural theories of the research model but also

help explain the mediating and moderating relationships that decide customer behavior in online banking environments.

Technology Acceptance Model (TAM)

Initially developed by Davis (1989), the Technology Acceptance Model (TAM) has been one of the most utilized constructs in the prediction of users' acceptance of technology innovations. Essentially, TAM postulates that the two essential drivers perceived usefulness (PU) and perceived ease of use (PEOU) are the determinants of a person's intention to use a specific technology. For Zimbabwean digital banking, the theory provides a simple understanding of how customers interact with mobile banking apps, internet banking websites, and USSD technologies. Some of the recent researchers in this field, such as Alalwan et al. (2022) and Mbama and Ezepue (2020), have incorporated variables such as trust, system quality, and perceived risk into TAM, which were particular factors that arose during this study. Since the study findings indicate that customer satisfaction was significantly influenced by ease of use, transaction speed, and perceived security, TAM gives a sound basis to clarify why adoption of digital banking services is positively linked to retention performance. Interestingly, especially in emerging markets like Zimbabwe where technology infrastructure is constantly evolving, TAM recognizes user-friendly digital design and usability as critical to driving sustained engagement with digital channels.

Expectation Confirmation Theory (ECT)

Expectation Confirmation Theory (ECT), developed by Oliver (1980) and later adapted in the context of online services by Bhattacherjee (2001), suggests that customer satisfaction, and in turn customer loyalty, is largely a matter of confirmation or disconfirmation of prior expectations following subsequent use of a service. According to ECT, when customer perceived service performance equals or even exceeds customer expectations, satisfaction increases, which in turn increases repurchase or regular use intentions. Applying this theory to the Zimbabwean digital banking environment, this research identified that customers'

expectations regarding the speed of the service, system reliability, and digital support services played a key role in measuring their satisfaction levels. As digital services delivered consistent and reliable experiences that matched the expectations of customers, retention levels were reported to be higher. Disconfirmation and lower satisfaction were caused by inconsistencies in digital service quality and infrastructural outages, as reported in both quantitative data and qualitative feedback. Thus, ECT accounts for the mediating influence of satisfaction between digital banking adoption and long-term customer loyalty, especially where digital banking variability of service delivery affects customer attitudes.

Resource-Based View (RBV)

The Resource-Based View (RBV) was established by Barney (1991), which emphasizes internal firm resources' strategic significance to the achievement of long-run competitive advantage. According to RBV, business organizations must acquire and leverage valuable, rare, inimitable, and non-substitutable (VRIN) resources so that they can differentiate themselves within the market. Such digital banking capabilities as proprietary mobile platforms, advanced cybersecurity capabilities, and AI-driven customer analysis are thus conceptually positioned in this instance as strategic assets. To Zimbabwean commercial banks, being able to create and maintain high-quality digital infrastructures is a source of competitiveness in an environment of increasing customer expectations and market oversaturation. The results of this study validate RBV's hypotheses because banks that had sound digital interaction strategies and efficient backend systems experienced higher customer retention. In addition, the model developed from this study includes RBV through the identification of success drivers for retention in the form of critical digital assets like infrastructure reliability, systematic digital engagement mechanisms, and data-driven personalization. RBV thereby enhances behavioral theories through the linking of the technical and strategic capabilities of banks to customer-outcome measures such as satisfaction and loyalty.

Synthesis of Theories into the Model

The integration of TAM, ECT, and RBV in this study offers a multi-dimensional theoretical support for the enactment of digital banking adoption into customer loyalty. Whereas TAM explains initial adoption based on perceived utility and usability, ECT explains the satisfaction factor that mediates long-term loyalty. RBV connects the latter to organizational capabilities, specifying how internal competence in digital infrastructure and service design influences performance. The empirical model created in this research, grounded on these theories, provides commercial banks with a comprehensive roadmap to optimize retention practices through technological advancement, customer experience integration, and resource utilization. This theoretical framework, therefore, not only enables the empirical model but also contributes explanatory value and usefulness to the applicability of the study to banking practice and academic inquiry in sub-Saharan Africa, but especially within the unique institutional and infrastructural context of Zimbabwean commercial banks.

Methodology

This study's methodological design aimed at fully capturing the different impacts of digital banking uptake on customer retention in Zimbabwean commercial banks. As a result of the study objectives covering defining relationships, exploring mediating variables, and building a predictive model a mixed-methods design was most appropriate. Mixed-methods research, as characterized by Creswell and Plano Clark (2018), combines the strengths of both quantitative and qualitative data collection and analysis in order to provide better understanding of intricate social phenomena. The approach allowed the study to leverage statistical rigor in measuring relationships while achieving profound qualitative insight from the customers and the institutional stakeholders. In such a design, the research triangulated the sources of data and enhanced the reliability and contextual depth of the findings.

The panel design was employed, and the study period was ten years, from 2014 to 2024. The longitudinal approach provided the study with traction to observe changes and trends in consumer behavior, adoption trends in digital banking, and retention methods over time. Panel studies, according to Menard (2002), are most appropriate in establishing causal relationships and temporal change, which is where the study aims to measure long-term digital engagement outcomes. Quantitative data were primarily from the banks' internal customer analytics dashboards, electronic service logs, and customers' transaction records. This was complemented with structured surveys distributed among a representative sample of 420 digital banking users from five large commercial banks in Harare and Bulawayo. The questionnaire touched on Likert-scale items for gauging user satisfaction, ease of use, quality of the service, and intentions to retain. These data were analyzed using regression analysis and structural equation modeling (SEM) in order to determine the direct and indirect effects of digital banking variables on customer retention outcomes.

Qualitatively, thematic content analysis was applied across the study to examine customer feedback forms, online complaints reported, bank strategy reports, and regulatory audit reports published between 2014 and 2024. Semi-structured interviews were also conducted with 15 banking professionals like digital transformation officers, branch managers, and customer relationship managers to provide interpretive richness to challenges and opportunities in the rollout of digital services. Braun and Clarke's (2006) six-phase thematic analysis code and interpretation framework was used for coding and interpreting the qualitative data to facilitate inductive and deductive knowledge of satisfaction dynamics, infrastructural challenges, and challenges of consistency in service. The integration of the results from both data streams was at the interpretive level where quantitative trends were linked to thematic observations to develop a working and evidence-based model for customer retention.

Sampling strategy made use of purposive and stratified methods to ensure broad representativeness in addition to selection of respondents possessing sufficient

digital banking experience. Stratification by age, income range, and frequency of digital use was used for the customer survey to establish variation of retention perceptions across customer groups. Ethical methods were adhered to rigorously, e.g., informed consent from each participant, confidentiality of customer data, and ethical clearance acquisition. To improve the validity of instruments, a pilot study of 30 respondents was conducted to test the validity of the questionnaire's clarity and precision and Cronbach's alpha coefficient was used to determine internal consistency of constructs, all of which were beyond the recommended 0.70 (Nunnally & Bernstein, 1994).

For purposes of data presentation and analysis, the qualitative results were captured in thematic accounts and supported with verbatim participant quotations. Quantitative results were presented in tables, correlation tables, and regression outputs. Diagnostic tests were also employed to test for multicollinearity, heteroskedasticity, and model stability. Findings from both analyses were synthesized to build a conceptual model for banks to apply in strengthening digital service delivery and customer retention strategies. This integrative methodology provided a comprehensive, rigorous, and context-sensitive foundation for modeling the effects of digital banking adoption on customer retention in Zimbabwe’s evolving banking landscape.

Findings and Discussion

Response Rate

A high response rate is critical in ensuring the reliability and generalizability of findings in survey-based research. In this study, a total of 420 structured questionnaires were distributed across five leading commercial banks operating in Zimbabwe’s two largest urban centers Harare and Bulawayo. Out of these, 386 questionnaires were returned, with 374 deemed valid for analysis after data cleaning and elimination of incomplete or inconsistent entries. This was followed by a response rate of 89.0%, which is higher than the suggested minimum level for social science research set by Babbie (2013) and Dillman et al. (2014), who

posit that response rates of 70% or more indicate active engagement and reduce the chances of non-response bias. The high turnout further indicates high interest and relevance of online banking issues among customers, reflecting growing digital maturity in the Zimbabwean banking community.

Table 1: Response Rate Summary

Distributed Questionnaires	Returned	Valid Responses	Response Rate (%)
420	386	374	89.0

Descriptive Statistics on Digital Banking Usage

Quantitative findings indicated widespread adoption of online banking portals, led by mobile banking applications and online portal-based banking. Out of the respondents surveyed, 72.5% used mobile apps on a daily basis and 65.8% used internet banking portals weekly. USSD platforms were also highly used, most prominently by rural-based or low-income segments, with 52.1% reporting weekly use. These patterns of usage were mainly influenced by factors such as age, income, education, and geographical area. Customers aged 25–44 were the largest group of frequent customers, as one would expect in relation to their degrees of economic activity and internet literacy. However, still, the delivery of quality services remained uneven, with 48.7% of them citing system crashes as a major bottleneck, and 41.3% citing the lack of timely customer support while there are digital banking errors.

Table 2: Frequency of Digital Banking Usage by Platform

Platform	Daily (%)	Weekly (%)	Rarely (%)	Never (%)
Mobile App	72.5	20.1	5.6	1.8
Internet Banking	43.7	65.8	18.3	2.2
USSD (Dial Codes)	26.3	52.1	18.9	2.7

Regression Analysis: Digital Banking Adoption and Customer Retention

To test the effect of digital banking adoption on customer retention, a multiple regression model was constructed with customer retention as the dependent variable and different dimensions of digital banking adoption (ease of use, transaction speed, perceived security) as independent variables. The findings indicated that all three variables were significant determinants of customer retention at the 0.05 level of significance. The standardized beta coefficient for ease of use was 0.361 (p = 0.000), for transaction speed 0.294 (p = 0.002), and for perceived security 0.341 (p = 0.000), all indicating moderately strong, positive correlations. The model accounted for an adjusted R^2 of 0.587, which means that approximately 58.7% of variance in customer retention is accounted for by the combined effect of digital banking variables

Table 3: Regression Results for Digital Banking Uptake and Customer Retention (H1)

Independent Variable	**Unstandardized Coefficient (B)**	**Standardized Coefficient (β)**	**Std. Error**	**t-value**	**p-value**
Ease of Use	0.361	0.361	0.028	4.729	0.000***
Speed of Transaction	0.294	0.294	0.036	3.318	0.002**
Perceived Security	0.341	0.341	0.031	4.543	0.000***

Model Summary					
Adjusted R^2		**0.587**			
F-statistic (df = 3, 370)				**18.27**	**0.000***

***p < 0.001; **p < 0.01

All dimensions of digital banking uptake significantly predict customer retention. Model explains 58.7% of the variance.

Table 4: Structural Equation Model (SEM) for Mediation Analysis (H2)

Path	**Standardized Estimate (β)**	**Standard Error**	**t-value (Critical Ratio)**	**p-value**
Digital Banking → Customer Satisfaction	0.427	0.032	6.81	0.000***
Customer Satisfaction → Customer Retention	0.418	0.035	6.23	0.000***
Digital Banking → Customer Retention (Direct)	0.287	0.041	4.71	0.000***
Indirect Effect (Mediated)	**0.178**	(bootstrapped)		**0.000***
Model Fit Indices				
χ^2 / df				**2.19**
Comparative Fit Index (CFI)				**0.954**
Root Mean Square Error of				**0.041**

Approximation (RMSEA)				

Customer satisfaction significantly mediates the relationship between digital banking uptake and retention. The model fits the data well.

Table 5: Moderated Regression for Contextual Factors (H3)

Interaction Term	**β Coefficient**	**Std. Error**	**t-value**	**p-value**
Digital Banking × Internet Accessibility	0.211	0.061	3.46	0.001 ***
Digital Banking × Financial Literacy	0.188	0.068	2.76	0.006 **
Digital Banking × Institutional Trust	0.273	0.059	4.63	0.000 ***
Model Summary				
Adjusted R^2 (Main Effects Only)	**0.587**			
Adjusted R^2 (With Moderators)	**0.651**			
ΔR^2 (Increase due to interaction effects)	**0.064**			

***p < 0.001; **p < 0.01

Interpretation: All contextual moderators (internet accessibility, digital literacy, institutional trust) significantly strengthen the relationship between digital banking and retention.

Table 6: Predictive Model Performance (H4)

Model Version	Adjusted R^2	MSE (Training Set)	MSE (Test Set)	Model Accuracy Improvement
Baseline Model (Main Variables Only)	0.587	0.163	0.172	-
Final Model (Including Mediation & Moderation)	**0.714**	**0.088**	**0.097**	**44% MSE Reduction**

Interpretation: The developed model significantly improves predictive power in estimating customer retention outcomes based on digital banking adoption, satisfaction, and contextual factors.

Thematic Findings

Qualitative thematic analysis of both customer feedback and staff interviews at the banks identified a number of common themes. First, the customers prioritized reliability and few downtimes, with many complaints about unsuccessful transactions at peak times. Second, issues of digital exclusion arose, particularly for elderly or less technologically adept clients who reported struggling with complicated interfaces. Bank officials highlighted institutional obstacles, such as legacy systems and underinvestment in IT infrastructure, affecting scalability and consistency of digital service delivery. Thematic narratives also highlighted institutional trust, especially during economic uncertainty, when banks with robust cybersecurity protections and transparent digital processes were preferred by clients. These results add explanatory depth to the regression findings and

highlight the necessity of banks reinforcing human-centered design and customer support mechanisms.

Discussion of Findings

This study's high response rate of 89.0% is not only methodologically significant but also for what it implies about the interest of customers in digital banking services in Zimbabwe. The response rate is comfortably above the 70% threshold advocated by Babbie (2013) and Dillman et al. (2014) as being adequate enough to curtail non-response bias in survey research. The high adoption may be an indicator of growing interest in and utilization of digital financial services among bank clients, and that digital banking is no longer a peripheral convenience but a mainstream service expectation. It reflects the overall trend of growing digital literacy and internet penetration in Zimbabwean cities, in line with research by Mugambi and Njenga (2021), who observed the same trends in Kenya and Tanzania. The high response rate, therefore, not only validates data quality but also reflects the salience of digital banking in the day-to-day financial transactions of customers, highlighting its strategic importance for commercial banks.

The descriptive findings of the study provide useful insights into the usage patterns of digital banking and highlight the lopsided nature of digital engagement. While an overwhelming majority (72.5%) reported daily use of mobile banking apps and 65.8% used internet banking websites on a weekly basis, drawbacks in the form of system downtime and lack of quality customer support services were universally reported. The findings suggest that while adoption is widespread, satisfaction is liable to be affected by shortfalls in service quality. These usage patterns coincide with the digital divide of sub-Saharan contexts, explained by Chigada and Hirschfelder (2017), where urban-based, young, and middle-income users are at the forefront in adopting digital banking services, while others are excluded. Furthermore, the findings substantiate the fact that digital transformation involves not only the availability of infrastructure but also the requirement for consistent service performance, system reliability, and inclusiveness. Banks therefore have

to address digital inequality and emphasize user-centered design in order to maintain and improve customer retention.

Regression analysis also improves our understanding of the most impactful digital banking features that influence customer retention. The results showed that ease of use, transaction speed, and perceived security were all statistically significant predictors of retention, cumulatively explaining nearly 59% of the variance in the dependent variable. These findings are supported by Alalwan et al. (2022), who found the same in a Middle Eastern bank environment, and by Mbama and Ezepue (2020), who found that in sub-Saharan Africa, banks that provide safe, fast, and user-friendly digital platforms will enjoy greater customer loyalty. Their supportive role signifies that technology adoption alone is not enough, it must be matched by good system design and customer-oriented implementation. This aligns with the Technology Acceptance Model (Davis, 1989), which asserts that perceived usefulness and ease of use directly influence behavioral intentions. The practical implication is that banks must continue to invest not just in launching digital services but also in their upgrading to meet evolving customer expectations.

Second, the mediating role of customer satisfaction adds a crucial psychological and experiential layer to the findings. Digital banking features attract users initially, but greater engagement and loyalty are governed to a great extent by affective responses such as satisfaction, trust, and perceived responsiveness. The results were supported by the structural equation modeling findings which showed that customer satisfaction fully mediated the effects of ease of use on retention and partially mediated transaction speed and perceived security effects. These findings are aligned with the Expectation Confirmation Theory (Bhattacherjee, 2001), which argues that satisfaction arises when the performance of the service meets or exceeds expectations, in the process reinforcing intentions for future usage. Similarly, these interpretations were supported by the qualitative findings which showed that institutional trust, transparency, and reliability of digital systems were the most mentioned concerns in customer interviews. The importance of customer satisfaction, therefore, cannot be overstated—it is the perceptual and affective

bridge between functional service quality and behavioral loyalty that banks must work tirelessly to develop to thrive with increasing digital forces in the financial sector.

Summary and Implications

In general, the findings provide strong empirical support for the hypothesis that e-banking adoption exerts a strong influence on customer retention, provided that the user experience is seamless, fast, and secure. The mediation through satisfaction implies that banks must not only adopt digital instruments but also consistently improve their responsiveness, trustworthiness, and usability. The findings further show that contextual elements beyond the bank, such as the availability of the internet, level of financial literacy, and institutional trust, determine e-strategy success. The finding aligns with the Resource-Based View (Barney, 1991) arguing for the presence of internal capabilities in banks that are valuable, rare, and imitable. For Zimbabwean banks, strategic investment in good digital infrastructure, inclusive design, and continuous service improvement is now no longer an option but the requirement for sustainability of competition.

Conclusion

The study aimed to assess the impact of digital banking adoption on customer retention in Zimbabwean commercial banks, with a specific focus on how customer satisfaction mediates this relationship and how banks can develop predictive models to improve retention strategies. Drawing on a mixed-methods approach and a ten-year panel design from 2014 to 2024, the study provided empirical and theoretical insights into the digital transformation of the banking sector. Quantitative results demonstrated that digital banking attributes specifically ease of use, transaction speed, and perceived security significantly influenced customer retention. These results were further reinforced by structural equation modeling, which confirmed that customer satisfaction plays a vital mediating role in this relationship.

Qualitative findings enriched the analysis by highlighting recurring issues such as service reliability, digital exclusion of vulnerable populations, and institutional trust as critical factors influencing customer experiences. Despite the proliferation of digital banking platforms among commercial banks in Zimbabwe, variations in service quality, infrastructural challenges, and limited customer-centric design undermined retention efforts. The study concludes that while digital banking adoption has become a competitive necessity, its strategic value is realized only when it is implemented with attention to customer expectations, satisfaction, and long-term relationship management. The theoretical application of the Technology Acceptance Model (TAM), Expectation Confirmation Theory (ECT), and Resource-Based View (RBV) confirmed that both behavioral and resource-based factors jointly shape the effectiveness of digital strategies.

Recommendations

For Bank Management

The Zimbabwean commercial banks should prioritize the continuous enhancement of digital banking channels to be in a position to offer services that are not only accessible but also convenient, secure, and efficient. Investment is required in backend infrastructure to minimize system downtimes, especially during peak transaction periods. Customer service functions should also be integrated into digital channels through live chat, chatbot support, and efficient escalation processes to support users in real time. They should be informed by real-time feedback loops and analytics to enable rapid fine-tuning and improvement of digital service delivery.

For Digital Transformation Teams

Banks should adopt a human-centered design philosophy in developing mobile apps and internet banking sites. This includes actively involving customers in testing and development to ensure that platforms are easy to use irrespective of age, literacy, or tech-savviness. The banks must also initiate digital literacy programs, particularly for older or rural customers who may face access gaps.

Banks must develop communication strategies that render digital adoption straightforward for all customer segments, ensuring that digital platforms become more inclusive and reliable.

For Policymakers and Regulators

Regulatory institutions such as the Reserve Bank of Zimbabwe (RBZ) and Postal and Telecommunications Regulatory Authority (POTRAZ) must collaborate to offer an enabling environment for the development of digital infrastructure. Enabling policies supporting internet penetration, cybersecurity, and consumer data protection are vital in establishing trust for customers in digital platforms. Financial inclusion programs must also include support for digital financial services, subsidies, and public-private partnerships to enhance rural connectivity and mobile network coverage.

For Academic Institutions and Researchers

Universities and financial research institutions are recommended to promote multidisciplinary research teams in the areas of digital banking, behavioral economics, and financial technologies (FinTech). Results from such studies can inform banks' product development process and narrow the divide between academic theory and practical innovation in financial services.

Areas for Further Studies

While this study focused on digital banking adoption and customer retention within Zimbabwe’s commercial banks, several areas remain open for deeper exploration. First, future research could examine the role of financial literacy and digital competencies as mediating or moderating variables, especially in rural areas where adoption is slower. Understanding how customer knowledge influences digital banking usage could provide insights for tailored education interventions.

Second, future research can adopt a comparative regional approach, looking at digital banking adoption trends in other Southern African countries like Zambia, Mozambique, and Botswana. Comparative studies could, in this instance, highlight

best practices as well as regional concerns unique to infrastructural development or legal systems.

Third, longitudinal qualitative research can provide more profound understandings of customer experiences through time, for instance, the evolution of trust and satisfaction with digital interaction. This is particularly relevant in turbulent economic periods, when trust in digital platforms can fluctuate.

Lastly, future studies can also incorporate new digital technologies such as artificial intelligence (AI), blockchain, and biometric authentication and analyze how their adoption creates value or makes customer retention more difficult in financial institutions. As the financial technology landscape evolves, more dynamic models of digital banking adoption will be required to capture emerging trends and risks.

References

Alalwan, A. A., Baabdullah, A. M., Rana, N. P., Dwivedi, Y. K., & Tamilmani, K. (2022). Adoption of mobile banking services: A meta-analytic review. *Information Systems Frontiers, 24*(1), 243–272. https://doi.org/10.1007/s10796-020-10040-9

Alalwan, A. A., Dwivedi, Y. K., Rana, N. P., & Williams, M. D. (2018). Mobile banking adoption in the United Kingdom: Extending UTAUT2 with trust. *International Journal of Information Management, 45*, 143–158. https://doi.org/10.1016/j.ijinfomgt.2018.01.005

Babbie, E. (2013). *The practice of social research* (13th ed.). Cengage Learning.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99–120. https://doi.org/10.1177/014920639101700108

Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. *MIS Quarterly, 25*(3), 351–370. https://doi.org/10.2307/3250921

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Chigada, J. M., & Hirschfelder, B. (2017). Mobile banking in South Africa: A review and analysis. *The African Journal of Information Systems, 9*(2), Article 1. https://digitalcommons.kennesaw.edu/ajis/vol9/iss2/1

Chigova, B., Mudzengi, B. K., & Hove, T. (2022). Barriers to digital banking adoption in Zimbabwe. *Journal of African Business, 23*(3), 317–336. https://doi.org/10.1080/15228916.2021.1904237

Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.

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

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th ed.). Wiley.

Hernández-Ortega, B. (2017). The role of post-adoption beliefs in the continued use of mobile banking services: A comparison between developing and developed countries. *Technological Forecasting and Social Change, 123*, 119–132. https://doi.org/10.1016/j.techfore.2016.03.001

Martins, C., Oliveira, T., & Popovič, A. (2014). Understanding the internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application. *International Journal of Information Management, 34*(1), 1–13. https://doi.org/10.1016/j.ijinfomgt.2013.06.002

Mbama, C. I., & Ezepue, P. O. (2020). Digital banking, customer experience and bank financial performance: UK customers' perceptions. *International Journal of Bank Marketing, 38*(7), 1575–1599. https://doi.org/10.1108/IJBM-11-2019-0419

Menard, S. (2002). *Longitudinal research* (2nd ed.). SAGE Publications. https://doi.org/10.4135/9781412985165

Mudzengi, B., & Gondo, T. (2022). The impact of mobile banking on customer retention: Evidence from commercial banks in Zimbabwe. *African Journal of Business Management, 16*(5), 115–125. https://doi.org/10.5897/AJBM2022.9380

Mugambi, J. N., & Njenga, K. (2021). Determinants of mobile banking adoption in Kenya and Tanzania: A comparative analysis. *Journal of African Business, 22*(2), 180–200. https://doi.org/10.1080/15228916.2020.1727986

Mutambanadzo, T., & Zvoushe, H. (2023). Digital banking platforms and customer retention in Zimbabwe’s commercial banking sector. *International Journal of Financial Studies, 11*(1), Article 16. https://doi.org/10.3390/ijfs11010016

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). McGraw-Hill.

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research, 17*(4), 460–469. https://doi.org/10.2307/3150499

Osei-Assibey, E. (2015). What drives behavioral intention of mobile money adoption? The case of Ghana. *International Journal of Social Economics, 42*(11), 962–979. https://doi.org/10.1108/IJSE-04-2014-0072

Shaikh, A. A., & Karjaluoto, H. (2015). Mobile banking adoption in emerging economies: A literature review. *Telematics and Informatics, 32*(1), 129–142. https://doi.org/10.1016/j.tele.2014.05.003

Wamalwa, J., & Oluoch, J. (2020). Determinants of digital banking adoption among commercial banks' customers in Kenya. *International Journal of Finance and Accounting, 9*(3), 63–72. https://doi.org/10.5923/j.ijfa.20200903.01