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Exploring the Challenges of Customer Adoption of Digital Banking Solutions at Natsave Bank in Lusaka

Taonga Mweene[1]*, Mukelabai Mukelabai[1]

[1] *Graduate School of Business, University of Zambia, Lusaka, Zambia*
* Corresponding Author

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Abstract

The banking industry is undergoing a digital transformation, integrating online and mobile banking to enhance customer service delivery. While digital banking offers numerous advantages, like 24/7 availability and reduced costs, its adoption in Zambia is low compared to the bank targets, with many customers preferring traditional teller services. Hence, this study explored the specific challenges faced by Natsave Bank customers in adopting digital banking solution in Lusaka. The study employed a concurrent mixed-methods approach, combining qualitative and quantitative techniques to gather data and insights. The study was conducted at three Natsave Bank branches located in Lusaka. The study population consisted of bank management personnel and customers of Natsave Bank. A total of 96 customers selected using convenience sampling participated in the quantitative study, while ten customers and two bank management personnel participated in the qualitative study. The results reveal that a majority of participants (72.9%) currently use digital banking services offered by Natsave Bank. Slow internet connection was identified as the primary barrier to digital banking adoption (42.5%), followed by security concerns (25.5%). However, experiences with technical issues were common, with 24.2% encountering them frequently and 49.5% sometimes. Participants prioritised faster transaction processing (60.6%) and enhanced security features (40.4%) as key areas for improvement. Qualitative results revealed that the primary difficulties include insufficient support for customers navigating digital platforms, a lack of self-service options, poor network, and the need for substantial customer education. The study highlights that poor internet connection, security concerns, and technical issues remain major impediments to adoption and active usage of digital, highlighting the need to address these challenges to improve adoption.

Keywords: Digital banking, Natsave bank, Challenges, Barriers, Customers

1. Introduction

As digital technology continues to advance, the banking industry is transforming by integrating digital technology into the delivery of services to its customers. The transformation of banking has led to the adoption of digital banking services to improve customer service delivery. Digital banking is an umbrella term that refers to both online banking, where users access features and services through their bank's website, and mobile banking, where users access these features through apps on smartphones or tablets (Napoletano 2021). Digital banking offers customers an easy and convenient way to carry out various transactions (Haralayya 2021). The use of digital banking brings several benefits, such as availability of services 24 hours a day, accessibility, time savings, ease of access to services, autonomy in the relationship with the bank, reduction in prices of banking services and increase in interest rates on deposits, online payments of bills, knowledge about banking products, non-discrimination of technology and friendly environment (Gargouri 2023).

However, despite the potential benefits, the implementation of digital banking solutions is not without its challenges, one of the key challenges banks encounters in implementing digital banking solutions is the customer adoption and acceptance of digital banking services (Indriasari et al. 2022). In India, a study reported low usage of digital banking service with only 35% in the country using such services (Ali 2023). Another study from Saudi Arabia reported that about 51.5% adopted digital banking services (Alnemer 2022). A study conducted in Zambia revealed a strong preference for teller deposits, with only 10.83% of participants reporting comfort using automated teller machines for deposits (Katuta and Kachamba 2024). Another study in Zambia found that approximately 65% of Stanbic bank customers do not use the bank's internet banking services (Sambaombe and Phiri 2022). This highlights a clear disparity in the adoption of digital banking services across different regions, with some countries like Saudi Arabia showing higher acceptance rates than Zambia.

Banks in low-income countries continue to struggle to offer digital banking services compared to banks in high-income countries. According to (Liu 2021), banks in high-income countries have made substantial advancements in digital financial services, becoming the dominant players offering digital financial services. In contrast, lower-income countries, including Zambia, often see non-bank institutions leading digital innovations. The lack of adoption of digital banking is attributed to a lot of factors including lack of human contact, complexity, fear of insecurity, no or slow Internet connectivity, restricted range of services, unnecessary messages and notifications, and high cost of use (Gargouri 2023). Additionally, literacy-related issues have been cited as key barriers hindering the adoption of digital banking services (Fetu 2019; Pankomera and van Greunen 2018). In that regard, banks ought to prioritise improving and delivering services from a customer perspective to increase the adoption of digital banking (Mehdiabadi et al. 2020).

This study examines the challenges faced by the National Savings and Credit Bank (Natsave), a Zambian government-owned financial institution, in implementing digital banking solutions. The bank aims to grow its physical and digital distribution channels to enhance customer transactions and make banking more accessible to a broader population. Despite Natsave's expansion of digital services (ATMs, mobile app, USSD, e-wallet, agency banking), adoption remains low. This study investigated the challenges hindering customer adoption of digital banking services at Natsave bank, gathering perspectives from both bank managers and customers to inform strategies for improving digital banking services and increasing adoption.

1.2 General Objectives

To explore the challenges associated with customer adoption of digital banking solutions at Natsave Bank in Lusaka.

1.3 Research Objectives

a) To identify the barriers to adopting digital banking solutions among Natsave Bank customers in Lusaka.
b) To explore the strategies that can improve the customer experience of digital banking at Natsave Bank in Lusaka.
c) To determine customer perceptions regarding digital banking services at Natsave Bank in Lusaka.

2. Literature Review

2.1. Empirical Review

Barriers to adopting digital banking solutions among customers

The adoption of digital banking solutions is associated with a range of factors. A literature review study reported that perceptions of ease of use, perceptions of usefulness, perceptions of risk, perceptions of security, perceptions of credibility, perceptions of trust, self-efficacy and perceptions of compatibility were the most important factors (Almuraqab and Cruz 2024). The study conducted in Nepal highlighted some critical factors influencing the adoption of internet banking, with security and trust emerging as key elements (Ghimire, Rai, and Dahal 2022). In a study from Vietnam, the study revealed that trust and risk levels do not significantly influence customers' attitudes towards digital banking, while ease of use and usefulness significantly influence their attitudes and intention to use digital banking (Pham 2023). In Serbia, a study revealed that time saving, flexibility, and user-friendly applications are the primary reasons for the use of digital banking products and services in Serbia, with costs having a lower influence. Generally, consumers' satisfaction with digital banking services is high (Barjaktarović Rakočević, Milošević, and Rakić 2023).

A systematic review of 14 existing studies in Africa revealed that mobile banking adoption in low-income countries faces several challenges, including poor network infrastructure, lack of awareness of mobile banking services, high illiteracy levels, and lack of trust because of perceived security risks (Pankomera and van Greunen 2018). Poor mobile signals in rural areas negatively affect communication and transaction quality, while illiteracy limits understanding and interpretation of mobile banking services (Pankomera and van Greunen 2018). In Ethiopia, banking faces significant obstacles in fully adopting E-banking, primarily because of the high illiteracy rate. Major challenges include a lack of customer awareness about E-banking products, low levels of computer literacy among customers, insufficient demand for these services, and customers' inability to access internet-banking services. These literacy-related issues were key barriers hindering the adoption of internet-banking services (Fetu 2019).

A case study from Stanbic Bank in Zambia found that network problems, particularly for male customers, and processing times for reversals, particularly for women, led to customer frustration and dissatisfaction, suggesting that online banking platforms are not very reliable (Malambo 2022). Another study in Zambia found that several factors hinder the growth of corporate online banking platforms in Zambia, including cyber theft and fraud, internet challenges, lack of trust and

unstable systems (Kasonde and Phiri 2022).

The opportunities to improve the customer experience with digital banking

Improving the customer experience through digital banking offers banks a variety of opportunities and various recommendations and strategies are documented in the literature. These approaches aim to address the current challenges faced by banking institutions in implementing digital banking and maximise the use of digital banking among customers. A study in Bangladesh suggested that banks need to integrate Information and Communication Technology into their financial products and services to reduce costs, increase efficiency and improve customer service. This requires having a sound technical infrastructure, an efficient workforce and being able to interact with technological advances to ensure reliability, security and safety (Bhuiyan, Imran, and Rahid 2022). Pavithra (2021) suggested that digital banking solutions should aim at enhancing marketing and advertising strategies to attract customers and educate them about the convenience, benefits, and advantages of using online banking services.

A study in Ghana reveals that customers are not fully embracing online banking, highlighting the need for a "hybrid banking" model that combines face-to-face interactions with online services. The study suggests banks should avoid high technology costs and adopt a gradual approach, enhancing customer experience with digital services while maintaining traditional banking methods until customers fully adapt to digital banking (Ofosu-Ampong 2021). A systematic review of 14 existing studies in Africa identified a common set of recommendations for improving the uptake of mobile banking. These included the need for policymakers to strive to create a conducive, competitive environment for the growth of mobile banking services among all major stakeholders, including telecom operators, internet providers, banks and non-governmental organisations (Pankomera and van Greunen 2018). In Zambia, a study highlighted that awareness-raising and advertising, good customer service, integrated user-friendly applications, loyalty programmes and ongoing customer training were some of the key factors that could be used rigorously to promote online banking (Kasonde and Phiri 2022).

2.2. Theoretical and Conceptual Framework

Technology Acceptance Model (TAM)

This study is underpinned by the Technology Acceptance Model (TAM) developed by Davis (1986), which is widely used to understand user adoption of technology-based systems. TAM has been regarded as being one of the most influential models within the information systems field, especially being very useful when investigating the users' acceptance and utilisation of technology-based services, i.e., electronic banking (Musa et al. 2024). The TAM model is a theoretically sound and empirically validated paradigm that has been widely adopted in the field of information systems. It has been employed to explain, predict and enhance user acceptance across a variety of technological implementations, thus demonstrating its utility and relevance (Davis and Granić 2024b). Following the introduction of TAM more than thirty years ago, a considerable number of extensions have been proposed, incorporating additional variables. These are collectively referred to as 'TAM++'. Nevertheless, the fundamental tenets of the TAM model, namely the concepts of perceived usefulness and perceived ease of use, have remained at the core of its theoretical framework (Davis and Granić 2024b). TAM claim that it is possible to predict, explain, and enhance user acceptance consistently. A major factor in predicting usage was attitude, which is causally related to intention and behaviour. However, determining relevant beliefs or perceptions was required in order for the model to explain why people form favourable or unfavourable attitudes towards system use (Davis and Granić 2024a). Perceived usefulness and perceived ease of use are two important but often disregarded factors that influence user acceptance, according to TAM. In the causal chain that connects system design features to user acceptance, these beliefs serve as determinants of attitude. They serve as the original model's central component (Davis and Granić 2024a).

Key Constructs of TAM:

- Perceived Usefulness (PU): This refers to the degree to which a person believes that using a particular system will enhance their job performance or overall effectiveness.
- Perceived Ease of Use (PEOU): This refers to the degree to which a person believes that using a particular system will be free from effort.
- Behavioural Intention (BI): This is the user's intention or likelihood of using the technology.
- Actual System Use: This is the real-world use of the technology.

TAM proposes that a user's acceptance of technology is primarily determined by their perceived usefulness and perceived ease of use. These perceptions influence their attitude toward using the technology, which, in turn, affects their behavioural intention and ultimately their actual system use (Figure 1).

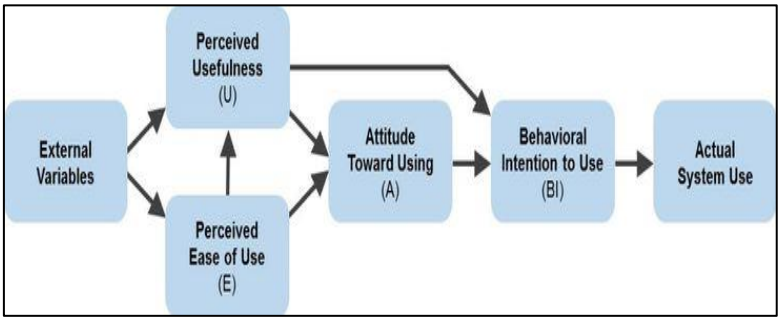

Figure 1: The Technology Acceptance Model

Conceptual Framework

The adoption of digital banking is influenced by six key factors. Service awareness is crucial, as users must be informed about the availability and features of digital banking services. Privacy and security are essential concerns, as users are more likely to engage with platforms if they trust their personal and financial information is protected. The quality of internet access affects usability, and perceived benefits like convenience, time savings, and lower transaction costs also influence a user's willingness to adopt these services. Technological awareness reflects users' familiarity with using digital tools and platforms, and trust and support, including customer service and institutional reliability, reinforce user confidence in using digital channels for financial transactions. These factors collectively form the basis for empirical investigation in this study.

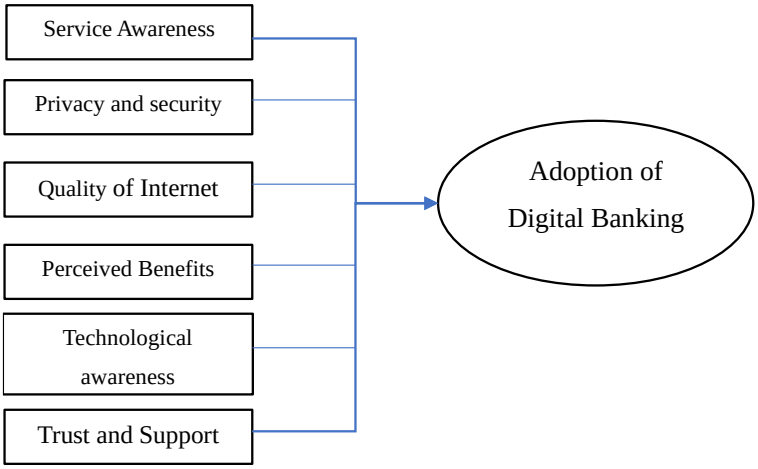

Figure 2: Conceptual framework of factors associated with Digital Banking (Adapted from Ahmad, Rashid, and Mujeeb (2012)).

3. Research Methodology

3.1. Research Design

The study used a concurrent mixed methods design, in which both qualitative (interviews) and quantitative data (cross-sectional survey) were collected simultaneously (Taherdoost 2022). This approach ensured a more robust and in-depth understanding of the research questions by combining both qualitative and quantitative research methods to extend the breadth and scope of the findings (Schoonenboom and Johnson 2017). Data from both qualitative and quantitative sources was integrated into interpretation and discussion (Taherdoost 2022).

3.2. Study Population and Sample Size

The study was conducted in three branches of Natsave Bank in Lusaka, Zambia. The study population consisted of bank customers and managers. The sample size was determined using Taro Yamane's formula (Yamane 1973). The sample size (n) is calculated using the formula for a 95% confidence level with a margin of error of 0.05.

$$n = \frac{N}{1 + N(e)^2}$$

Where N is the population size e is the margin error and n is the sample size.

$$n = \frac{200}{1 + 200\ (0.05)^2}$$

n=133.3
n=133

Therefore, the study aimed to recruit 133 participants in the study, however only 96 customers participated in the study. The study used non-probability convenience sampling technique to collect data for the quantitative component due to practical limitations and limited access to a large, well-organized sampling frame (Simkus 2022). To mitigate potential bias, a diverse cross-section of participants was recruited, and explicit inclusion criteria and standardised data collection methods were implemented.

Two managers in digital banking and call centres and ten customers from the Northend branch participated in qualitative in-depth interviews. The managers of the bank were purposively selected to gain more insights on the implementation of digital banking, while customers were selected based on their educational level and experience with digital banking.

3.3. Data Collection Instruments and Procedure

A survey questionnaire was developed after reviewing literature and distributed among customers. The questionnaire comprised four main parts: Socio-demographic characteristics (such as age, gender, income level, and educational background). Second part: Usage of digital banking: Assessing the frequency and manner in which customers utilize digital banking services, including online banking, mobile banking apps, and other digital platforms. The third part assessed barriers to digital banking: This section explored factors such as security concerns, technical difficulties, accessibility issues, and any other barriers perceived by the customers. The last part included strategies to improve the customer experience of digital banking.

For qualitative component, firstly, interviews were conducted with key informants (managers), to delve into the challenges associated with digital banking implementation and the strategies devised to address these challenges. These interviews provided valuable perspectives from within the bank. Secondly, in-depth interviews were conducted with customers to explore the barriers they encounter when utilizing digital banking services. These interviews captured the firsthand experiences and insights of customers, shedding light on areas for improvement.

3.4. Study Variables

The outcome variable was the use of digital banking among customers. Independent variables include age group, sex, education level, monthly income (zmw), comfort with technology for finance, trust in digital banking security, reliability of Natsave digital banking, experience with technical issues, and satisfaction with Natsave digital banking.

Pilot Study

The questionnaire was pilot-tested with a small sample (10% of the sample) to assess clarity, relevance and response time. To test the interview guide, a few pilot interviews (5) were conducted with bank managers and selected customers. The pilot study was conducted at other Natsave bank branches not included in the study.

3.5. Data Preparation and Analysis

Quantitative Component: The data from completed questionnaires were manually checked for completeness and consistency and then entered into Microsoft Excel. Data were imported into Stata version 17 for analysis. Data collected was sorted out and data cleansing was performed before analysis. First, descriptive statistics were analysed to observe the basic characteristics of the variables. Results for categorical variables were presented using frequencies and percentages. A Fishers' Exact test was performed to test the association between digital banking use and customer demographic and experiences. Univariate and multivariable logistic regression analysis was performed to identify customer demographic and experiences that are associated with digital banking use. All variables with P=0.100 in univariate analysis were included in the final multivariable model to control for confounding (Chowdhury & Turin, 2020). The Akaike Information Criteria (AIC) and the Bayesian Information Criteria (BIC) were used to determine the best-fit model. All forms of analysis in this study were performed at a 5% significance level and 95% confidence level.

Qualitative component: Atlas.ti version 24 software was used for analysis. Thematic analysis using an inductive methodology was used to allow the themes to be identified from the data. Audio recordings of key informants and in-depth interviews were transcribed and preliminary notes were made before data analysis. Codes were developed to describe the data after going through each interview transcript. The codes were used to generate themes and multiple codes were combined into a single theme. There was a review of the themes to ensure that they were accurate and practical summaries of the data. If there are problems with the themes, they were split, combined, or discarded or new themes were created to make them more accurate and useful.

3.6. Ethical Consideration

The research protocol was approved by the University of Zambia Humanities and Social Sciences Research Ethics Committee and Natsave bank management. Participants were informed of the study's objectives, rights, and confidentiality, and there were no known risks or drawbacks.

4. Research Results

4.1. Quantitative results

Demographic Characteristics

A total of 96 customers participated in the study. Forty-one per cent (41/96) were aged between 22 years and 31 years, while 26% (25/96) were aged between 32 - 41 years. Most participants were males 60% (58/96) and had tertiary education 62.5% (60/96). Table 1 shows the use of digital banking stratified by participants' demographics and experiences. A significant association was found between experience with technical issues and digital banking usage as the rate of digital banking adoption was higher among those that experienced technical issues compared to those who have never experienced issues (95% vs 25.0%, p <0.001). There was a significant relationship between satisfaction with Natsave digital banking and its usage (p = 0.006), as the usage of digital banking was high among participants who reported being very dissatisfied (100.0%) or somewhat dissatisfied (85.7%) compared to those who were neutral (58.5%).

Table 1: The use of digital banking stratified by participants' demographic and experiences

Variable	Category	No (%)	Yes (%)	Total (%)	p-value
Age Group	22 - 31 years	9 (21.9)	32 (78.1)	41 (100)	0.475
	32 - 41 years	8 (32.0)	17 (68.0)	25 (100)	
	42 - 51 years	6 (25.0)	18 (75.0)	24 (100)	
	Above 51 years	3 (50.0)	3 (50.0)	6 (100)	
Sex	Female	6 (15.8)	32 (84.2)	38 (100)	0.044
	Male	20 (34.5)	38 (65.5)	58 (100)	
Education Level	Postgraduate	4 (21.1)	15 (78.9)	19 (100)	0.03
	Secondary	9 (52.9)	8 (47.1)	17 (100)	
	Tertiary	13 (21.7)	47 (78.3)	60 (100)	
Monthly Income (ZMW)	10,001 - 20,000	3 (20.0)	12 (80.0)	15 (100)	0.218
	5,000 - 10,000	10 (27.0)	27 (73.0)	37 (100)	
	Above 20,000	0 (0.0)	7 (100.0)	7 (100)	
	Below 5,000	13 (36.1)	23 (63.9)	36 (100)	
Comfort with Tech for Finance	Neutral	7 (30.4)	16 (69.6)	23 (100)	0.775
	Somewhat Comfortable	3 (30.0)	7 (70.0)	10 (100)	
	Somewhat Uncomfortable	1 (12.5)	7 (87.5)	8 (100)	
	Very Comfortable	13 (26.0)	37 (74.0)	50 (100)	
	Very Uncomfortable	0 (0.0)	2 (100.0)	2 (100)	
Trust in Digital Banking Security	Neutral	4 (16.0)	21 (84.0)	25 (100)	0.506
	Somewhat Distrust	1 (16.7)	5 (83.3)	6 (100)	
	Somewhat Trust	8 (28.6)	20 (71.4)	28 (100)	
	Strongly Distrust	0 (0.0)	2 (100.0)	2 (100)	
	Strongly Trust	11 (33.3)	22 (66.7)	33 (100)	
Reliability of Natsave Digital Banking	Neutral	14 (37.8)	23 (62.2)	37 (100)	0.205
	Somewhat Reliable	3 (15.8)	16 (84.2)	19 (100)	
	Somewhat Unreliable	2 (15.4)	11 (84.6)	13 (100)	
	Very Reliable	3 (20.0)	12 (80.0)	15 (100)	
	Very Unreliable	1 (11.1)	8 (88.9)	9 (100)	
Experience with Technical Issues	Frequently	1 (4.5)	21 (95.5)	22 (100)	<0.001
	Never	9 (75.0)	3 (25.0)	12 (100)	
	Rarely	5 (41.7)	7 (58.3)	12 (100)	
	Sometimes	6 (13.3)	39 (86.7)	45 (100)	
Satisfaction with Natsave Digital Banking	Neutral	17 (41.5)	24 (58.5)	41 (100)	0.006
	Somewhat Dissatisfied	1 (14.3)	6 (85.7)	7 (100)	
	Somewhat Satisfied	2 (10.0)	18 (90.0)	20 (100)	
	Very Dissatisfied	0 (0.0)	10 (100.0)	10 (100)	
	Very Satisfied	1 (8.3)	11 (91.7)	12 (100)	

Customer perceptions regarding digital banking services at Natsave Bank in Lusaka.

The majority of participants 88.2% (82/93) considered 24/7 customer support to be very important. Additionally, 80.9% (76/94) expressed interest in attending free digital banking training. Nearly half 48.9% (46/94) were very likely to recommend Natsave Bank's digital banking services, while 27.7% (26/94) remained neutral. When asked about additional digital banking services, the most desired feature was cardless ATM withdrawals 69.2% (65/94), followed by chatbot assistance 11.7% (11/94) and digital wallet integration 8.5% (8/94). Furthermore, most participants valued the ability to perform banking tasks digitally as very important 79.8% (75/96), while 10.6% (10/94) remained neutral, 7.5% (7/94) considered it somewhat important, and only 1.1% (1/94) stating it was not important at all (Table 2).

Table 2: Participants Perceptions Regarding Digital Banking Services

Variable	Category	Frequency	Percent
Importance of 24/7 Customer Support	Neutral	9	9.7
	Somewhat important	2	2.2
	Very important	82	88.2
Interest in Attending Free Digital Banking Training	Maybe	11	11.7
	No	7	7.5
	Yes	76	80.9
Likelihood to Recommend Natsave Bank's Digital Banking Services	Neutral	26	27.7
	Somewhat likely	11	11.7
	Somewhat unlikely	6	6.4
	Very likely	46	48.9
	Very unlikely	5	5.3
Additional Digital Banking Services Desired	Biometric authentication	3	3.2
	Cardless ATM withdrawals	65	69.2
	Chatbot assistance	11	11.7
	Digital wallet integration	8	8.5
	Other (please specify)	7	7.5
Importance of the Ability to Perform All Banking Tasks Digitally	Neutral	10	10.6
	Not important at all	1	1.1
	Somewhat important	7	7.5
	Somewhat unimportant	1	1.1
	Very important	75	79.8

Digital Banking Adoption and Factors associated with its Adoption

The majority of the participants 72.9% (70/96) reported currently using digital banking services offered by Natsave Bank. Among those who reported using digital banking, 37.7% (26/69) reported using it monthly, 27.5% (19/69) reported using it weekly and 27.5% (19/69) reported using it daily (Table 3).

Table 3: Digital Banking Adoption among participants accessing banking services in selected Natsave Branches in Lusaka

Variable	Category	Frequency (n)	Percent (%)
Currently using digital banking services offered by Natsave Bank	No	26	27.1
	Yes	70	72.9
Frequency of using digital banking services	Daily	19	27.5
	Monthly	26	37.7
	Rarely	5	7.2
	Weekly	19	27.5

Figure 3 shows that the most used digital baking service among participants was the mobile banking app 90% (63/70)

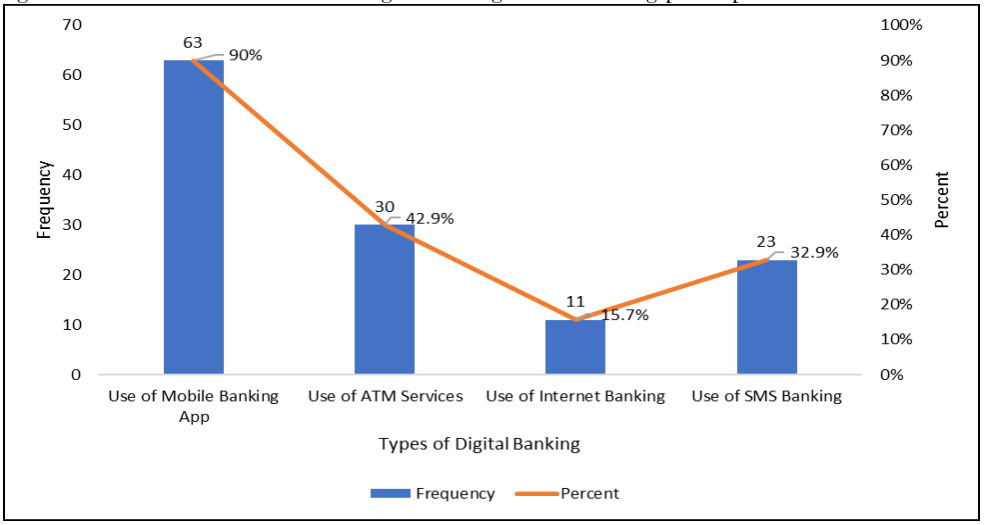

Figure 3: Types of digital banking used by participants accessing banking services in selected Natsave Branches in Lusaka

Barriers to adopting digital banking solutions

Figure 4 shows the barriers to using digital banking and it shows that slow internet connection was the main barrier 42.5% (40/96), followed by security concerns 25.5% (24/96), preference for in-person banking 21.3% (20/96), and lack of awareness 14.9% (14/96).

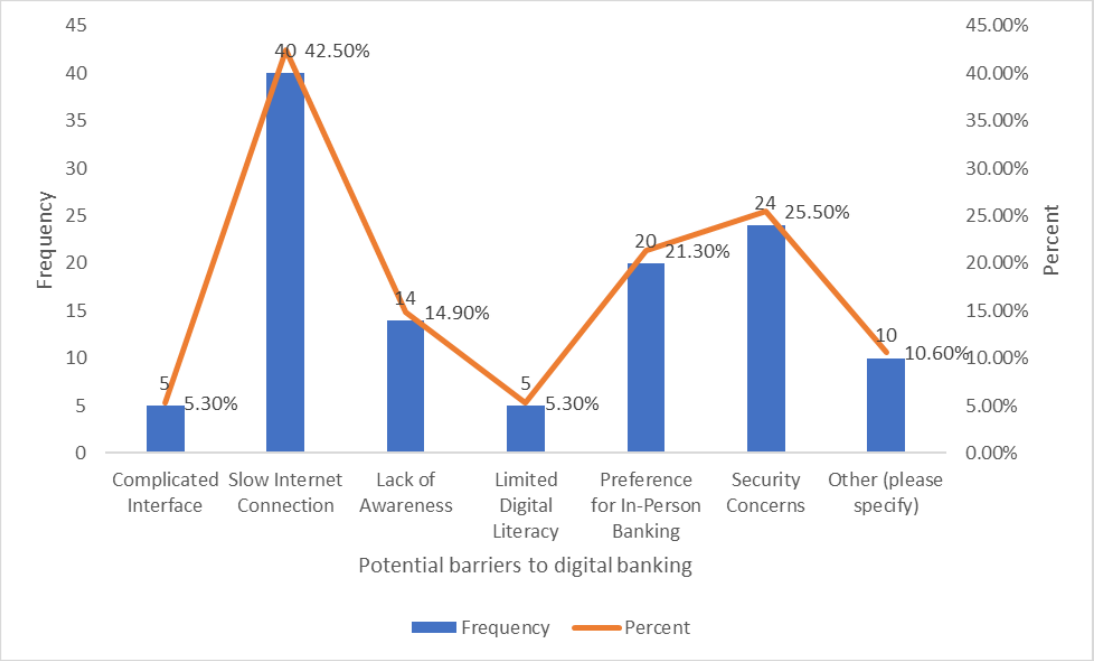

Figure 4: The barriers to adopting digital banking solutions among Natsave Bank customers in Lusaka

Factors associated with Adoption of Digital Banking among Natsave Customer

Individuals who never experienced technical issues were significantly less likely to adopt digital banking compared to those who always experienced technical issues (AOR 0.02; 95% CI: [0.001 – 0.43], p = 0.012). Reporting slow internet was associated with a fourteen times greater likelihood of adopting digital banking compared to those who did not report slow internet (AOR 14.09; 95% CI: [1.35 – 147.30], p = 0.027).

Table 4: Factors associated with Adoption of Digital Banking among Natsave Customer

Variable	Univariate OR (95% CI)	P value	Adjusted OR (95% CI)	P value
Age	0.98 (0.94, 1.03)	0.387		
Sex				
Female	Reference		Reference	
Male	0.36 (0.13, 0.99)	0.049	0.50 (0.09, 2.72)	0.425
Education				
Postgraduate	Reference			
Secondary	0.24 (0.06, 1.02)	0.053		
Tertiary	0.96 (0.27, 3.41)	0.955		
Income				
Below 5,000	Reference			
5,000–10,000	1.53 (0.56, 4.13)	0.405		
10,001–20,000	2.26 (0.54, 9.51)	0.266		
Comfort Level				
Uncomfortable	Reference			
Neutral	0.25 (0.03, 2.41)	0.232		
Comfortable	0.31 (0.04, 2.61)	0.278		
Trust Level				
Distrust	Reference			
Neutral	0.75 (0.07, 7.88)	0.811		
Trust	0.32 (0.04, 2.75)	0.297		

Reliability				
Unreliable	Reference		Reference	
Neutral	0.26 (0.06, 1.04)	0.057	1.05 (0.12, 9.20)	0.967
Reliable	0.74 (0.16, 3.31)	0.691	1.23 (0.10, 14.86)	0.872
Satisfaction with Digital Services				
Dissatisfied	Reference		Reference	
Neutral	0.09 (0.01, 0.73)	0.024	0.76 (0.06, 9.96)	0.836
Satisfied	0.60 (0.06, 6.30)	0.674	1.35 (0.07, 26.97)	0.845
Technical Issues				
Always	Reference		Reference	
Occasional	0.20 (0.02, 1.64)	0.134	0.25 (0.02, 2.69)	0.25
Never	0.02 (0.00, 0.17)	0.001	0.02 (0.001, 0.43)	0.012
Complicated Interface	Reference			
Slow Internet	7.85 (2.14, 28.73)	0.002	14.09 (1.35, 147.30)	0.027
Lack Awareness	0.27 (0.08, 0.88)	0.029	1.05 (0.15, 7.21)	0.961
Limited Digital Literacy	0.21 (0.03, 1.32)	0.095	2.93 (0.12, 74.26)	0.515
Preference for In-Person	2.25 (0.60, 8.47)	0.232		
Security Concerns	2.00 (0.61, 6.59)	0.254		

Strategies to improve the customer experience of digital banking

Figure 5 shows that the majority of participants prioritized faster transaction processing 60.6% (57/94) and more security features 40.4% (38/94) as key improvements for digital banking, followed by integration with financial apps 29.8% (28/94), while a simpler user interface 19.2% (18/94) and personalized financial advice 10.6% (10/94) were less frequently mentioned, with only 6.4% (6/94) suggesting other features.

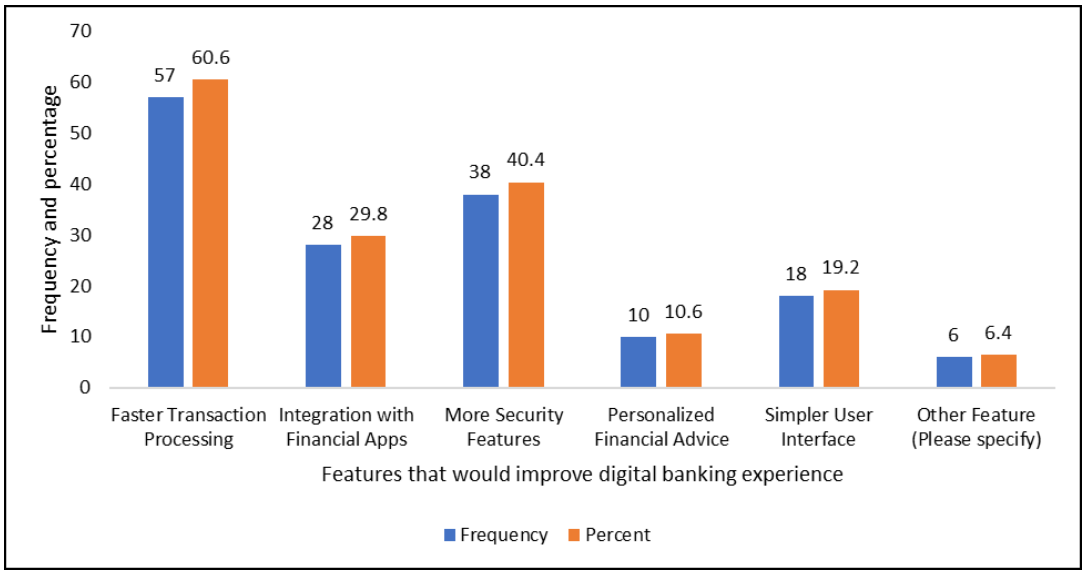

Figure 5: Features that would improve the digital banking experience among Natsave Bank customers in Lusaka

Figure 6 shows that the most significant motivator is faster processing times, reported by 57.4% (54/96), followed by lower transaction fees 48.9% (46/96), and improved security measures 41.5% (39/96), a user-friendly interface 30.8% (29/96), and rewards/cashback programs motivated 33% (31/96).

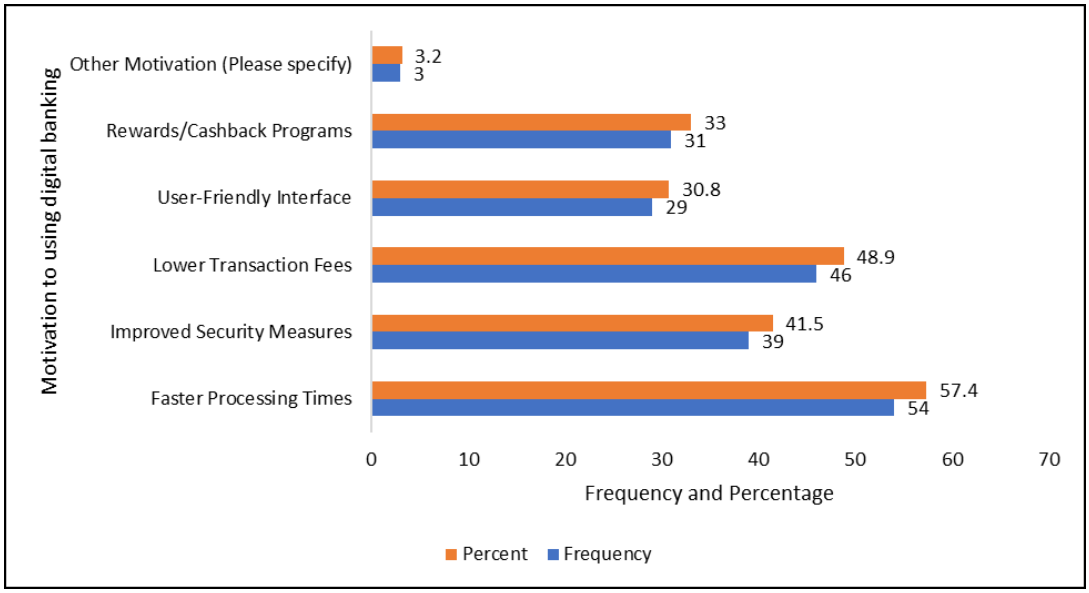

Figure 6: Motivation to use digital banking among Natsave Bank customers in Lusaka

4.2. Qualitative Results

Theme 1: Mobile Banking Usage

Most respondents from the qualitative interviews indicated they use mobile banking frequently, driven by the need for convenience and ease of access. Participants predominantly use mobile banking services, with some also using ATMs and internet banking depending on their needs. One customer shared, "mostly, I use mobile banking." Frequency of use is generally linked to the respondent's specific banking needs, such as salary deposits or other regular transactions.

"I think I can say most of all the time because I use my ATM cards. So, most of the time I do the mobile Bank. Bank to mobile, mobile to bank." (Customer 2)

Theme 2: Customers perspective of Digital Banking

Participants generally perceive digital banking as a convenient and accessible alternative to traditional banking methods. They appreciate the ability to conduct transactions from anywhere using mobile phones, reducing the need to visit physical bank branches. Some also mention that digital banking is essential for transactions like salary deposits, with one participant noting that it meets their needs adequately.

"It's good and it's simple. You can use it anywhere you are instead of visiting the bank." (Customer 1)

Sub-theme: Security and Trust in Digital Banking

Participants express a high level of trust in the security of digital banking, with many indicating that they feel their information and transactions are secure. However, some also highlight concerns about the need for more autonomy in managing security features, such as resetting passwords or unblocking pins, without the need to visit a bank branch. While participants express general comfort with security, some also suggest improvements in communication regarding system congestion.

"Security is there, because the gadgets I'm using are mine, and it's confident." (Customer 1)

Theme 3: Customer Service Challenges in the Adoption of Digital Banking

The challenges in customer service related to digital banking adoption are rooted in a combination of technological limitations, lack of customer preparedness, and the bank's existing infrastructure. Participants noted that the lack of self-registration options, difficulty using apps or USSD services, and the need for personalized support in branches are common barriers. The primary difficulties include insufficient support for customers navigating digital platforms, a lack of self-service options, and the need for substantial customer education. Many customers, particularly in rural areas or older demographics, struggle with using mobile banking apps or unstructured supplementary service data (USSD) services due to poor internet connectivity, a lack of technological familiarity, and language barriers. Participants report facing challenges with the reliability and performance of digital banking platforms. Common difficulties include network instability, especially during power cuts or internet congestion at month-end, and occasional transaction failures. Customer 4 stated, *"the internet is not so much available."* Issues with pin resets and the lack of self-service options for digital banking tasks are also concerns for some users. This involves the technical difficulties users face with connectivity and the functionality of digital banking, especially during power outages or high-traffic periods.

"I've just had maybe some process, maybe once or twice, trying to transfer and it fails." (Customer 2)

One respondent from customer service shared,

"most customers require that they are guided the first time in the branches, how to download and use them, because the majority of the customers you find they were born, Maybe earlier than 2000 some yes can manage to use technology." (customer service)

Theme 4: Technological Hurdles and Their Operational Impact

Technological hurdles are a major barrier to the successful implementation of digital banking at Natsave Bank, significantly affecting the bank's operations. These hurdles include issues with third-party integrations, compatibility problems between different technologies, and cybersecurity concerns. The bank's reliance on third-party vendors for digital banking services often leads to delays and a lack of control over crucial aspects of the digital transformation process, such as timelines and system compatibility. Two respondents point out the slow rate of digital assimilation, the resistance to change within the organization, and the struggles to keep up with industry advancements due to infrastructure limitations and a lack of resources. Furthermore, cybersecurity risks associated with external vendors heighten the vulnerability of the bank's systems, potentially compromising both operational efficiency and customer trust. These technological constraints delay the bank's digital transformation and create additional operational challenges that affect customer service delivery and internal workflow.

"In our digital journey or digital involvement, we find that we have to integrate with other parties a lot, especially third parties. And where you have so many third parties, you sort of are not in control of timelines. You're not in control of what other services need to be in play for you to receive a full service. So you find that some risks are sort of not mitigated by us. As a result, it affects timelines." (Digital Manager)

Theme 5: Strategies to Increase Customer Adoption and Usage of Digital Banking Solutions

Increasing customer adoption of digital banking solutions requires a multifaceted approach. Several strategies and technological advancements were highlighted by participants as key to making digital banking more accessible, engaging, and user-friendly. These include consistent sensitization campaigns, leveraging Artificial Intelligence (AI) to provide personalized experiences, improving customer service, and integrating new technologies to enhance user experience. On sensitization and customer engagement, one respondent stated, "We need to promote sensitization… every time, we need to be sending messages through sms or email and orienting people at peak time." One respondent indicated the importance of collecting and incorporating customer feedback into the digital banking service development process. Feedback mechanisms like suggestion boxes, social media platforms (e.g., Facebook), and customer surveys provide valuable insights that help the bank improve service delivery and address customer concerns. One important strategy that was highlighted by respondents is the utilization of technology to enhance ease of use. The digital manager expressed strong support for leveraging advanced technologies like AI to improve customer experience, "*AI is a key driver to increasing customer satisfaction because it sort of amalgamates functions. AI will allow easy recalling of, for instance, information*." One respondent from customer service also stated, "*The technology itself, Natsave is well integrated… but the only thing we need to improve more mostly is bringing more solutions regarding lifestyle services which most people are enjoying… and we need to teach them.*"

4.3. Discussion

The study was set out to explore the challenges associated with implementing digital banking solutions at Natsave Bank in Lusaka. The study focused on understanding the potential barriers to adopting digital banking solutions among Natsave Bank customers in Lusaka and exploring the opportunities that can improve the customer experience of digital banking at Natsave Bank in Lusaka.

The results reveal generally positive customer perceptions of Natsave Bank's digital banking services, although areas for improvement are evident. Customers highly value 24/7 support and express strong interest in free digital training, demonstrating a proactive engagement with digital services. This aligns with the global trend toward increased digitalization in finance, as the majority of customers consider digital banking very important (Gargouri 2023; Napoletano 2021; Haralayya 2021). However, user experience and trust present a mixed picture. While over half felt very comfortable using technology for financial transactions, trust in platform security is divided, with a significant portion expressing distrust. Reliability and technical issues are also major concerns: forty percent of the participants were neutral about reliability, while less than a quarter found the services unreliable. Consistent with this finding, a case study from Stanbic Bank in Zambia reported that digital banking was considered not very reliable among participants (Malambo 2022). Furthermore, a substantial three-quarters experienced technical issues sometimes or frequently, highlighting a critical need for improvement. Overall satisfaction was moderate and nearly half of participants were very likely to recommend the services, suggesting room for improvement in both customer satisfaction and service quality. Dissatisfaction with digital banking has been reported in previous studies conducted in Zambia which aligns with the findings of this study (Malambo 2022; Sambaombe and Phiri 2022). On the contrary, a study from Serbia, reported high customers satisfaction with digital banking services (Barjaktarović Rakočević, Milošević, and Rakić 2023). The difference in findings could be because of the differences in technological infrastructure and digital banking services implement.

The study revealed that nearly three-quarters of the participants reported using the digital banking services offered by Natsave Bank, indicating that the adoption of digital banking was relatively high. Consistent with the findings of this study, a study from Swaziland also reported the majority of the customers were using digital banking (Zwane, Wannenburg, and Jager 2023). In contrast, a study from India reported low usage of digital banking services among participants (Ali

2023). The difference in findings could be because of the differences in the digital banking services offered and study population. While the adoption rate is encouraging, massive opportunities exist for improvement in enhancing service quality, addressing technical issues, and improving user experience. The mobile banking app emerged as the most adopted digital banking service, used by 90% of all the users of digital banking. This confirms the findings on the increasing prevalence of mobile banking, as reported in a study by (Chungu and Phiri 2024), who found mobile banking to be the most preferred digital banking service in Zambia.

The study identified various barriers to digital banking adoption including slow internet connections, security concerns, and preference for in-person banking. These findings are consistent with other studies undertaken in Zambia, which noted similar barriers to digital banking services relating to network problems, security challenges and unstable systems (Malambo 2022; Kasonde and Phiri 2022). These findings also corroborate the results of a systematic review of 14 existing studies conducted in Africa, which reported that the adoption of mobile banking in low-income countries faces challenges due to poor network infrastructure and lack of trust due to perceived security risks (Pankomera and van Greunen 2018). Similarly, the study conducted in Nepal highlighted some critical factors influencing the adoption of internet banking, with security and trust emerging as key elements (Ghimire, Rai, and Dahal 2022). These results have a significant implication for financial institutions that want to promote digital banking services. Addressing problems in connection with network infrastructure, security and trust is crucial for overcoming obstacles for the widespread use of mobile and internet banking. In view of the fact that the network provider is a third party and is primarily responsible for the network problems, it can be difficult for banks to deal with such challenges. The qualitative findings showed that the dependence of the bank on external providers of digital banking services often leads to delays and loss of control over important elements of the digital transformation process such as system compatibility and schedules. This underscores the importance of a multi-sectoral approach in addressing network problems and other challenges in digital banking.

Additionally, the qualitative findings revealed that lack of technological familiarity, and language barriers were among the major barriers to using digital banking. These findings support findings from previous studies that report literacy-related issues such as low levels of computer literacy among customers and limited understanding and interpretation of mobile banking services as key barriers hindering the adoption of digital banking services (Pankomera and van Greunen 2018; Fetu 2019). The findings emphasize the significance of providing user-friendly interfaces and clear instructions in multiple languages in digital banking, emphasizing the need for financial institutions to continuously assess and improve their digital platforms for accessibility.

The quantitative results also showed that most participants experienced occasional or frequent technical problems. The study found a significant relationship between technical issues and digital banking usage, with frequent technical issues indicating increased usage of digital banking among participants. This could suggest that those who use digital banking more frequently are simply more likely to encounter technical issues due to their increased usage, rather than the technical issues causing them to use digital banking more often. The study revealed a significant association between satisfaction with Natsave's digital banking and its usage, with dissatisfied users being more likely to use it. This could suggest that current bank users are dissatisfied with the services despite them still using the services.

The study highlights several options that can be explored to further enhance the digital banking experience which include faster transaction processing, improved security features, and interoperability with financial apps. These are further enriched by the qualitative data, which identified strategies relating to technological advancements such as leveraging AI to provide personalized experiences and integrating new technologies to enhance user experience. These findings are complemented by customer suggestions for innovative services that align with evolving digital trends such as cardless ATM withdrawals and chatbot assistance. Supporting these strategies identified in this study, a Bangladesh study suggested that banks should integrate ICT into their financial services to reduce costs, enhance efficiency, and enhance customer service, and this requires a robust technical infrastructure, workforce, and technological interaction (Bhuiyan, Imran, and Rahid 2022). By adopting these recommendations, banks can stay competitive in the ever-changing digital landscape and provide customers with convenient and efficient services. The integration of ICT not only benefits the banks in terms of cost savings and improved efficiency but also enhances the overall customer experience. With the rapid advancement of technology, it is imperative for banks to continuously adapt and innovate to meet customer expectations and stay ahead of the competition. However, the integration of ICT can be influenced by external factors that go beyond the bank, which requires the need for a multi-sectoral approach to digital banking. There is a need for policymakers to strive to create a conducive, competitive environment for the growth of mobile banking services among all major stakeholders, including telecom operators, internet providers, banks and non-governmental organisations (Pankomera and van Greunen 2018).

In the study, the need to raise awareness and customer engagement was emphasized to improve the digital banking experience. This finding is in accordance with the findings of a study conducted in Zambia. The Zambian study recommended strategies such as awareness-raising and advertising, as well as the provision of good customer service and ongoing customer training (Kasonde and Phiri 2022). These strategies are essential for banks to connect with their customers in a digital landscape, where personal interactions are limited. By implementing these recommendations, banks can not only enhance their digital banking services but also build trust and loyalty with their customers.

This study has limitations which includes the small sample size, which may reduce the generalization of findings, and that it was done within a given geographical area, which may not be representative of all Natsave Bank branches. Further research with an increased and diverse sample size across different locations would give more comprehensive insights into the views of both customers and bank management. Dependency solely on the customers' self-reporting may give room

for response bias. The use of convenience sampling may also have introduced bias into the results, as participants might not be representative of the whole population. Nevertheless, the study still gives relevant information about the perceptions and experiences of Natsave Bank customers and management.

5. Conclusion

The study examined the adoption and usage of digital banking services at Natsave Bank, revealing that mobile banking is the most popular. However, challenges such as poor internet connection, security concerns, and technical issues persist. Despite these, customers trust digital banking platforms and find them convenient. Opportunities for improvement include faster transaction processing, better security features, and better customer support. To improve customer experience of digital banking, Banks should focus on technological challenges, educate customers, and offer personalized experiences through AI-powered services to boost digital banking adoption and service delivery in an increasingly digitized financial world. To address poor internet connection and technical issues, Banks need to collaborate with internet service providers or invest in robust infrastructure. Regular system maintenance and upgrades are also crucial to minimize downtimes and transaction failures. A larger study is however needed to understand the true picture of digital banking services.

Conflict of Interest

The authors declare that they have no conflicting interests

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Ethical considerations

The article followed all ethical standards appropriate for this kind of research.

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