

# The Adoption of Internet Banking and It's Effects on Customer Satisfaction in Zambia

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## ABSTRACT

The study examined the factors affecting the adoption intention of internet banking services and their effects on customer satisfaction in Zambia, utilizing a framework adapted from the Technology Acceptance Model (TAM). A quantitative correlational design was employed, and data was analyzed using the SPSS software. A sample of 179 respondents comprised of internet banking users was acquired through a structured survey questionnaire. The findings showed that Awareness of Service, Perceived Usefulness, Perceived Ease of Use and Perceived Credibility have statistically significant contributions to Adoption Intention of internet banking in Zambia. Additionally, Adoption Intention has a significant and positive effect on Customer Satisfaction. The mediation analysis showed that adoption intention mediates the relationship between independent variables and customer satisfaction in the Zambian context.

The study urges financial and banking institutions to prioritize developing awareness campaigns to educate customers about their financial technology solutions, as a lack of awareness can be a major barrier to adoption. These campaigns should focus on demonstrating the practical benefits and use cases of internet banking services in ways that resonate with the Zambian market, particularly highlighting how these services can solve common financial challenges faced by local customers.

**Keywords:** Internet Banking, Financial Technology, Adoption Intention, Customer Satisfaction, Technology Acceptance Model

## INTRODUCTION

The advent of the internet has brought about many revolutionary changes, and the banking industry is no stranger to some of these advances. The internet has made it easier for businesses to interact with consumers, allowing transactions to take place at any given time or place. The convenience of Financial Technology (Fintech) has in turn, resulted in the need for round-the-clock access to financial services to match. Internet banking (IB) simply refers to banking operations conducted via network technology utilizing electronic devices, in contrast to conventional banking methods that necessitate direct interaction for transactions and activity (Amin, 2016). Traditional brick and mortar banking spaces are now being traded for digital workspaces where the same services are offered online to customers ( Kehr *et al.*, 2017).

The utilization of information technology (IT) in the Zambian banking sector has increased over time, driven by consumers' demand for convenient and around the clock services, and more recently, the COVID-19 pandemic, which necessitated a transition of banking transactions to online platforms due to widespread lockdowns and high operational costs despite minimal activity. Standard Chartered Bank was among the first banking institutions to fully adopt the transition to the digital realm.

With a history in the Zambian banking sector spanning 118 years, the company recently reformed its banking strategy by closing several branches and significantly investing in financial technologies, therefore gaining the designation of Zambia's inaugural digital bank. Other banking institutions have subsequently emulated this approach, presenting their own variations of digital banking services and financial technology platforms.

A digital transition offers numerous advantages for both consumers and banking institutions. Firstly, internet banking is a cost-effective alternative. Consumers benefit from the convenience of avoiding long queues and travel expenditures, as well as the fact that most online services are free to access (Singhal & Padhmanabhan, 2008). The operational costs associated with infrastructure, utilities, and staffing are reduced because of the diminished necessity for physical branches. Secondly, internet banking is more efficient than traditional banking. It reduces the time required for manual processing through automation, enables real-time monitoring of finances, and provides valuable data on consumer habits and preferences, enabling banks to better meet the needs of their customers by adapting their products and services (Kombe, & Wafula, 2015; Dedeh & Ratna, 2022 ). Thirdly, the accessibility it offers to remote consumers and the expanded range of services beyond inter-account transactions result in enhanced reach (Chavan, 2013). Fourthly, internet banking offers improved security. In order to safeguard online transactions, advanced security measures, including two-factor authentication and encryption, are implemented. Account alerts enable users to monitor their accounts, and therefore enable early and effective detection of fraudulent activities (Dedeh & Ratna, 2022). Finally, it is environmentally beneficial because it reduces the necessity for paper in banking transactions and the consumption of resources due to a decrease in the number of physical branches.

The financial industry's significant transition to digitization has introduced an era in which internet banking is a critical service. Internet banking has the potential to provide consumers with convenience, efficiency, and accessibility; however, there is still a significant gap in its adoption and usage. This discrepancy raises questions regarding the elements that affect consumer satisfaction with internet banking services. To optimize their service delivery and improve customer experiences, banks must comprehend the relationship between consumer fulfillment and internet banking.

The objective of this study was to examine the influence of internet banking use on customer satisfaction in the Zambian setting, by identifying the primary factors that affect customers' perceptions and utilization of internet banking services, and offer recommendations on how banks could possibly resolve these factors to enhance overall customer satisfaction.

### **Research Objectives**

- i. To understand the factors that play a role in internet banking adoption
- ii. To investigate the relationship between internet banking adoption and customer satisfaction
- iii. To investigate how internet banking service quality can be enhanced to improve customer satisfaction

### **Research Questions**

- i. What factors influence internet banking adoption?
- ii. What effect does internet banking adoption have on customer satisfaction?
- iii. How can internet banking service quality be enhanced in order to improve customer satisfaction?

## **LITERATURE REVIEW**

### **Theoretical Foundations**

Researchers employ several theoretical frameworks to examine the adoption of internet banking services by users. Some prominent frameworks include the Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB), and the Unified Theory of Acceptance and Use of Technology (UTAUT). TAM posits that perceived usefulness and perceived ease of use are the principal determinants of technology adoption, whereas TPB asserts that individual conduct is determined by behavioral intentions, which are shaped by attitudes toward the behavior, subjective norms, and perceived behavioral control. UTAUT synthesizes components from other theories, such as the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB), to

elucidate human intentions toward technology utilization and subsequent usage patterns. It delineates four major constructs: performance expectancy, effort expectancy, social influence, and facilitating factors (Ajzen, 1991; Davis et al., 1989; Venkatesh et al., 2012).

### **Pertinent Works**

Sakala and Phiri (2019) examined the determinants influencing the adoption of mobile banking by analyzing the consumer base of three commercial banks in Zambia. A favorable association was seen between the utilization of mobile banking services and perceived ease of use, usefulness, attitudes, external influences, user intention, and system usage. The study, however, indicated that its scope was restricted to Lusaka, and that additional research employing the Unified Theory of Acceptance and Use of Technology (UTAUT) was necessary due to the extensive range of variables offered by the model.

Daka and Phiri (2019) employed the UTAUT model to investigate the impact of performance expectancy, effort expectancy, social influence, facilitating factors, and behavioral intention on the adoption of internet banking in Zambia. The study demonstrated that performance expectancy, effort expectancy, facilitating factors, and behavioral intention significantly influenced users' desire to adopt internet banking services. It is noteworthy that social influence was determined to play an insignificant role in the Zambian setting.

In a recent study, Chungu & Phiri (2024) utilized the SERVQUAL model to measure how well internet banking services met or exceeded customer expectations. The study revealed substantial positive correlations between customer satisfaction and critical parameters related to service quality including user interface, responsiveness, reliability, ease of use, and efficiency. These findings highlight the significance of these elements and the implications they have on total customer satisfaction levels, as well as the relationship between service quality and customer satisfaction.

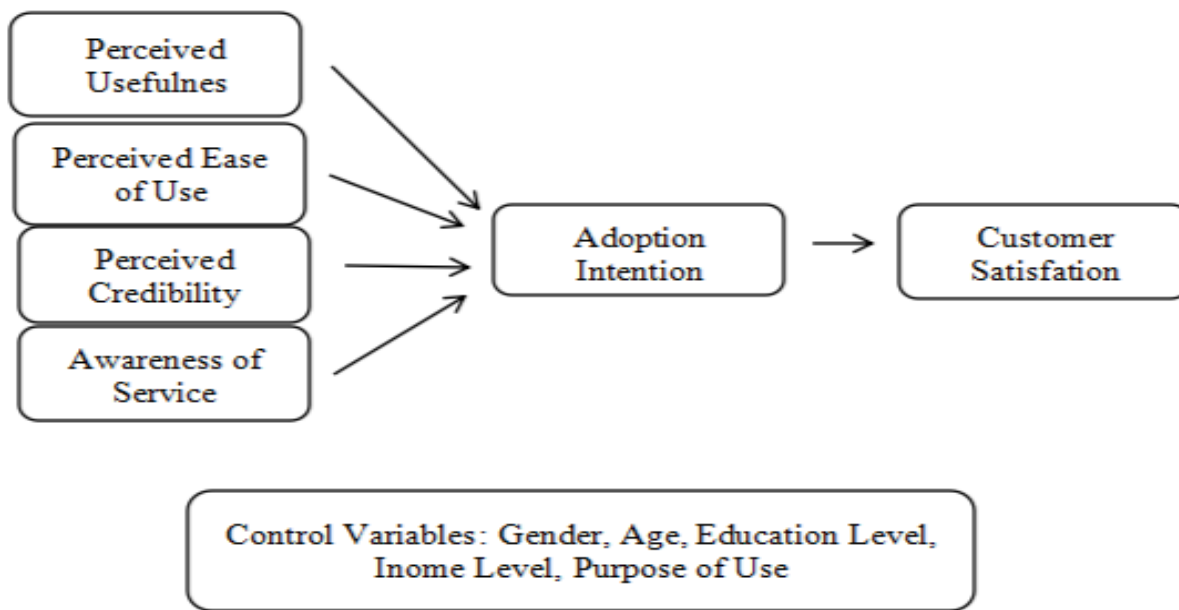
A Singaporean study conducted by Tan and Teo, (2000) using the Theory of Planned Behaviour (TPB) revealed that internet banking adoption could be determined by both behavioral control and attitudinal factors, but not through subjective norms. Specifically, attitude referred to a person's perception towards internet banking; behavioral control referred to a belief about having the necessary resources to adopt internet banking; and subjective norms referred to social influence affecting a person's intent to use. Among attitudinal factors, relative advantage; compatibility with values, experience and needs; willingness to try; and risk had a significant role in determining adoption attitudes. The study also revealed that perceived complexity had a negative effect on adoption intentions.

Among other foreign studies pertaining to IB, Banu *et al.*(2019) utilized the TAM model to examine the correlation between online banking and customer satisfaction. Perceived usefulness served as a mediator among consumer satisfaction and factors such as awareness, security, internet knowledge, self-efficacy, cost and time savings, ease of use, attitude, adoption intention, and trust. The study demonstrated a favorable association among perceived usefulness, service awareness, self-efficacy, cost and time savings, and trust. No correlation was identified among security, knowledge, internet quality, attitude, and adoption intention. Perceived usefulness was positively correlated with customer satisfaction, hence affirming its function as a mediator between independent variables and customer contentment.

## **CONCEPTUAL FRAMEWORK**

The study sought to elucidate the correlation between internet banking adoption and customer satisfaction within the Zambian context. Grounded in Davis *et al.* (1989)'s Technology Acceptance Model, modifications were incorporated to encompass the aspects of service awareness and users' apprehensions regarding perceived credibility. However, in contrast to Banu *et al.* (2019), adoption intention functions as a moderating variable between customer satisfaction and perceived ease of use, perceived usefulness, perceived credibility, and awareness of service.

**Figure 1: Illustration of the Conceptual Framework**



Source: Author (2024)

## Hypothesis Development

### Perceived usefulness (PUS) and Adoption intention (AI)

Perceived usefulness (PUS) is defined as the likelihood that an innovation will improve users' present activities and enhance efficiency. Users appraise the utility of innovation relative to conventional methods (Davis *et al.*, 1989). Individuals are more inclined to utilize IB if they perceive that it will simplify their tasks or help them achieve better outcomes with the least amount of effort. This view may be affected by elements such as IB features, user experiences, and the advantages it presents relative to current solutions. If it offers no further benefit, its adoption is less probable. We therefore hypothesized:

**H1:** Perceived usefulness is positively related to adoption intention of internet banking.

### Perceived Ease of Use (PEOU) and Adoption intention (AI)

Perceived Ease of Use (PEOU) refers to the degree to which customers consider new technology to be user-friendly (Davis *et al.*, 1989). In this sense, it pertains to the level of difficulty users attribute to IB. It includes the ease with which new users can learn to navigate and efficiently employ innovations, along with the impact of the innovation's visual and physical attributes on usability. We therefore hypothesized:

**H2:** Perceived ease of use is positively related to adoption intention of internet banking.

### Perceived Credibility (PCR) and Adoption intention (AI)

Perceived Credibility (PCR) denotes an individual's assessment of the validity of a specific piece of information. It is a complex concept that enables the recipient of information to evaluate the source or transmitter of the information provided. This assessment reflects the recipient's readiness to assign authenticity and significance to the information (Hovland *et al.*, 1953). It represents users' apprehensions regarding the capability of IB to guarantee trust and security. Trust refers to the reliability and dependability of IB, whereas security concerns confidentiality and protection of user information. We therefore hypothesized:

**H3:** Perceived credibility is positively related to adoption intention of internet banking.

## Awareness of Service (AOS) and Adoption intention (AI)

Awareness of Service (AOS) refers to the degree to which potential consumers are knowledgeable of the services provided by a firm or organization. It includes their understanding of the availability, features, advantages, and application of these services. High service awareness indicates that consumers are knowledgeable and capable of making informed choices regarding the utilization of the offered services. Kangis and Passa (1997) found that customers that were aware had higher expectations for quality than those who were not. Furthermore, customers who were aware also perceived that they received higher quality services when their expectations were met than those who were not. We therefore hypothesized:

**H4:** Awareness of service is positively related to the adoption intention of internet banking.

## Mediating Effect of Adoption intention (AI)

Adoption Intention (AI) denotes an individual's readiness or intention to commence utilizing a novel technology, product, or service. The decision is determined by a cost-benefit analysis, with uncertainty as the primary hurdle. Individuals will embrace an invention if they perceive that it will, on balance, amplify their utility. They must believe that the invention may provide a relative advantage over the concept it replaces (Orr, 2003). In the realm of IB, adoption intention assesses the likelihood of a customer commencing the use of IB services based on their perceptions. This intention is frequently affected by factors including perceived usefulness, perceived ease of use, perceived credibility and service awareness. We therefore hypothesized:

**H5:** Adoption intention mediates the relationship between independent variables (perceived usefulness, perceived ease of use, perceived credibility, and awareness of service) and the dependent variable (customer satisfaction).

## Adoption intention (AI) and Customer Satisfaction

Customer satisfaction is the degree to which a company's products, services, or overall experience meet or exceed consumer expectations. It signifies client satisfaction with a business's offerings, including product quality, service efficiency, and the whole customer experience, which fosters future patronage and loyalty (Abdallat & Emam, 2008). When clients exhibit an increased desire to adopt a service, it frequently results in greater levels of satisfaction upon its use. Abdul Sathar *et al.* (2023) demonstrate that perceived usefulness and ease of use positively affect adoption intention, which subsequently predicts customer satisfaction. Customers are more inclined to accept a service and experience satisfaction when it is user-friendly and advantageous. This is because their expectations and perceived benefits correspond with their actual experience. We therefore hypothesized:

**H6:** Adoption intention is positively related to customer satisfaction.

## METHODOLOGY

### Research Design

The study employed a quantitative correlational design to measure and analyze the strength and direction of relationships between variables and provide insights into whether and how variables are related (Cohen, *et al.*, 2013). A digital questionnaire survey was administered via the World Wide Web utilizing Google Forms, with data being collated in real time into an Excel Spreadsheet for documentation purposes. The online questionnaire method was employed as the Internet is the most appropriate medium to access the targeted sample of internet banking customers. Internet surveys are appropriate when the target group has internet access and when a prompt response time is necessary (Tan & Teo, 2000). Pilot research was conducted with a minimum of five participants to verify that the questionnaire items were articulated clearly. Before each potential respondent completed the questionnaire, the study's aim was disclosed and informed consent was obtained. The survey responses were filled out anonymously.

## Study site

The research concentrated on retail banking clients that utilize or have utilized internet banking services offered by Zambian commercial banks. The survey was conducted online, with the questionnaire disseminated through email and social media platforms to willing participants.

## Study Population

Banerjee & Chaudhury (2010) define the study population as the subset of the target population that meets a designated criteria and is available for study. The target population for this study was internet banking users, and the study population was the customers of Zambia's commercial banking sector which is comprised of 19 local and international banks that are incorporated locally. As of 2022, there were 2,487,989 commercial bank account users (Bank of Zambia, 2022).

## Sample Size

The maximum sample size was to be calculated using Cochran's (1977) formula:  $n = Z^2 * \hat{p}(1-\hat{p})/E^2$ . Where  $n$  represents the sample size,  $Z$  denotes the  $Z$  value,  $\hat{p}$  signifies the population proportion, and  $E$  indicates the margin of error. A margin of error of 5% (0.05) and a confidence level of 90% (yielding a  $Z$  value of 1.645) was employed. The population proportion was unspecified; therefore, the default value of 0.5 (50% of the population) was utilized.

$$n = Z^2 * \hat{p}(1-\hat{p})/E^2$$

$$n = 1.645^2 * 0.5(1-0.5)/0.05^2$$

$$n = 271$$

## Sampling Procedures

A combination of convenience and snowball sampling procedures were used for the study. Convenience sampling involves selecting participants from the target group based on accessibility. Members of the study population are selected based on specific practical criteria, such as ease of accessibility, geographical proximity, availability at a designated time, or willingness to participate, for the purpose of the study (Etikan *et al.*, 2016). Snowball sampling enables the researchers to leverage existing social networks to establish initial links and allows for the arising sampling momentum to capture an increasing chain of participants through recommendations (Parker *et al.*, 2019).

## Data Collection Instruments

The data collection instrument was a structured survey questionnaire with a 5-point likert scale to measure customer satisfaction and adoption factors. The questionnaire was hosted on the world wide web through the Google Forms platform. The questionnaire was divided into three sections. The first section included an introduction to the research and the participant consent authorization. The second section gathered respondent demographic data, while the third section gathered data about research variables. All responses were automatically compiled with time stamps onto an excel spreadsheet as a back up to ensure accurate record keeping.

The measures used were adapted and abridged from previous related studies ( Davis *et al.*, 1989; Mwiya *et al.*, 2017; Banu *et al.* 2019; Sakala & Phiri, 2019) and compiled into 17 items. The questionnaire underwent pilot testing with a minimum of five participants before deployment to verify that the questions were articulated clearly and concisely. Research assistants subsequently assisted in distributing the secured link to the questionnaire to participants by email and other social media sites (WhatsApp, Facebook, X, Reddit, and Instagram) for responses.

## Data Analysis Procedure

The survey questionnaire responses were refined by verifying that all questions had been answered appropriately and eliminating any errors, including duplicates. The quantitative data was encoded and inputted into the Statistical Package for Social Sciences (SPSS) software on a computer to conduct the data analysis. Descriptive, correlational, regression and mediation analyses were employed to analyze the data. The outcomes of the data analysis determined the findings, conclusions, and recommendations.

## Ethical Considerations

The research was executed in compliance with the guidelines of the University of Zambia Biomedical Research Ethics Committee (UNZABREC), contingent to the committee's authorization. The investigator sought and secured agreement from the parties for all significant revisions to the original documents, as required. All participants were of legal age and possessed the capacity to provide autonomous consent.

## RESULTS

### Sample Profile

In this research, a sample of 179 respondents was acquired. The sample group used consists of internet banking users from various banks in Zambia. The survey was sent using online platforms over three to four weeks to link them to the online survey.

According to the analyzed sample profile. 52.5% of the respondents were female and 47.5% were males. The table also indicates that 70.9% of the respondents were aged between 20 to 29 years, representing a dominating youthful majority. Regarding level of education, 75.4% of respondents have a bachelor's level education. This indicates that majority of the respondents are learned. According to the profile, 43% were employed, 36.3% were students and the rest were retired. About monthly income, 29.6% of the respondents earn between K1,000 to K4,999, 26.3% earn below K1,000, 14% earn between K10,000 to K19,999, 12.8% earn between K5,000 to K9,999, 11.7% earn between K20,000 to K29,999 and only 5.6% earn above K30,000. The income bracket was fairly distributed among the respondents. Lastly, the sample profile also shows that 54.7% use internet banking for personal use only, 2.2% use the platform for business purposes and 43% use internet banking for both personal and business purposes. More details relating to the properties of the sample are displayed on the table below.

**Table 1: Sample Profile**

Variable	Description	Frequency	Percentage
Gender	Male	85	47.5
	Female	94	52.5
	Total	179	100
Age	Under 20 years	9	5.0
	20-29 years	127	70.9
	30-39 years	34	19.0
	40-49 years	7	3.9
	50-59 years	2	1.1
	Total	179	100
Level of Education	Secondary Level	17	9.5
	Diploma Level	27	15.1
	Bachelor's Level	135	75.4
	Total	179	100.0
Employment Status	Employed	77	43.0
	Self Employed	16	8.9
	Unemployed	20	11.2
	Student	65	36.3
	Retired	1	0.6
	Total	179	100
Monthly Income	Below K1,000	47	26.3
	K1,000 - K4,999	53	29.6
	K5,000 - K9,999	23	12.8
	K10,000 - K19,999	25	14.0
	K20,000 - K29,999	21	11.7
	Above K30,000	10	5.6
	Total	179	100.0
Use of IB	Personal Use	98	54.7
	Business Use	4	2.2
	Both	77	43.0
	Total	179	100

## Measurement Model and Reliability Testing

Reliability testing is essential for assessing internal consistency in research studies particularly when self-report instruments are employed. The degree to which items on a scale or test consistently measure the same underlying construct is known as internal consistency. Statistical metrics such as Cronbach's alpha, which approximate the reliability of the measure and ensure that the items are homogeneous and accurately represent the intended construct, should be used to assess internal consistency (Davenport *et al.*, 2015). A high degree of internal consistency increases confidence that the observed relationships or effects are caused by the construct of interest rather than measurement errors, which enhances the validity and reliability of the measures used, permits accurate interpretation of results, encourages replicability, and improves the precision of research findings. The structures and items that make up the measuring model for this study are tabulated in Table 2.

**Table 2: Measurement Model**

Construct	Items	Cronbach's Alpha
Awareness of Service	I am aware that banks offer internet banking services	0.731
	I know the benefits and risks of using internet banking	
Perceived Usefulness	Internet banking reduces the amount of time needed to conduct bank transactions	0.772
	Internet banking is a more affordable way to conduct banking transactions	
	Internet banking is more efficient and convenient than other forms of banking	
Perceived Ease of Use	Learning to use internet banking is easy	0.767
	My internet banking platform is designed in a way that makes it easy to use	
	Using internet banking to carry out tasks does not require much mental effort	
Perceived Credibility	Internet banking service provider keep their promises and commitments	0.730
	Internet banking is secure and offers personal privacy	
	I believe Internet banking systems operate in my best interest	
Adoption Intention	Using internet banking is a good idea	0.847
	I intend to use internet banking services regularly	
	I would recommend others to use internet banking services	
Customer Satisfaction	Internet banking allows me to carry out all the banking transactions I need to	0.760
	Internet banking services meet my expectations	
	I am satisfied with my bank's internet banking services	

The results of the internal consistency utilizing the Cronbach alphas are shown in the measurement model above. A straightforward technique to determine if a score is dependable or not is to use Cronbach's alpha. A negative value would suggest that the data contains an error.

Pallant (2011) states that a Cronbach's alpha of less than 0.50 is considered undesirable, while those above 0.50 are highly dubious, those above 0.60 are dubious but acceptable, those above 0.70 are decent, those above 0.80 are better, and those above 0.90 are the best.

The model used in this study contains the following Cronbach alphas: Awareness of Service (0.731), Perceived Usefulness (0.772), Perceived Ease of Use (0.767), Perceived Credibility (0.730), Adoption Intention (0.847) and Customer Satisfaction (0.760). This proves that the model contains a high degree of internal consistency since all Cronbach's Alpha values are greater than the necessary minimum of 0.70.

### Statistical Correlation Analysis

The means, standard deviations, and correlations between the independent, control, and dependent variables are displayed in Table 3. We can ascertain how closely the variables are related to one another by examining these correlations. The values in a correlation analysis span from -1 to +1. Positive correlations show that the variables are related in the same direction, whilst negative correlations show that the variables have an inverse relationship.

The following recommendations were emphasized by Cohen (1988): small  $r = 0.10$  to  $0.29$ ; medium  $r = 0.30$  to  $0.49$ ; and large  $r = 0.50$  to  $1.0$ . The correlation coefficient has a value between  $-1.00$  and  $1.00$ . The magnitude of the correlation between the two variables will be indicated by this value. A correlation of  $1.0$  denotes a perfect positive correlation, a value of  $-1.0$  denotes a perfect negative correlation, and a correlation of  $0$  shows that there is no relationship at all. Three significance thresholds can be applied to correlations:  $p < 0.05$ ,  $p < 0.01$ , and  $p < 0.001$ . The correlation table also shows these significance levels.

**Table 3: Correlations Among All Variables**

Variables	Mean	Std Dvt	N	1	2	3	4	5	6	7	8
Customer Satisfaction	3.585	0.735	179	-							
Adoption Intention	3.965	0.675	179	.454**	-						
Gender	0.525	0.501	179	-0.005	0.055	-					
Age	2.251	0.661	179	0.008	.188*	.193**	-				
Level of Education	2.659	0.646	179	-0.099	-0.036	.192*	.189*	-			
Awareness of Service	3.989	0.772	179	.335**	.586**	.204**	.237**	0.066	-		
Perceived Usefulness	3.998	0.673	179	.387**	.661**	0.086	.161*	-0.006	.644**	-	
Perceived Ease of Use	3.652	0.724	179	.547**	.637**	-0.051	0.027	-.151*	.446**	.598**	-
Perceived Credibility	3.425	0.676	179	.593**	.580**	0.057	0.028	-0.027	.349**	.448**	.503**

### Correlation Between Control Variables and Customer Satisfaction

As reflected in Table 3, the control variables being used in this research are Gender, Age and Level of Education. The results in the table above show that Gender (Beta= -0.005), Age (Beta= 0.008) and Level of Education (Beta= -0.099) are not significantly correlated with Customer Satisfaction towards Internet Banking.

### Correlations Between Independent Variables, Mediator and Customer Satisfaction

Table 3 also shows that the independent variables used in the study are Awareness of Service, Perceived Ease of Use, Perceived Usefulness and Perceived Credibility. Adoption Intention is the mediator and Customer Satisfaction is the ultimate dependent variable. The results in the table above show that all the independent variables have a positive and significant correlation with the dependent variable, Customer Satisfaction towards Internet Banking. Additionally, all the independent variables have a medium and large effect size. Effect sizes were calculated using Cohen's criteria, which categorize effect sizes as small (0.10 to 0.29), medium (0.30 to 0.49), or large (0.50 to 1.00). The correlation coefficients were as follows, from largest to smallest: Perceived Credibility (0.593, Sig<0.01), Perceived Ease of Use (0.547, Sig<0.01), Adoption Intention (0.454, Sig<0.01), Perceived Usefulness (0.387, Sig<0.01) and Awareness of Service (0.335, Sig<0.01).



**Table 5: Simple Regression Table**

		Coefficients				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	1.625	.293		5.538	.000
	Adoption Intention	.494	.073	.454	6.774	.000

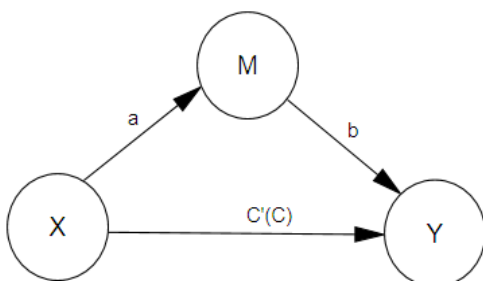
Dependent Variable: Customer Satisfaction

According to the analysis results above, Adoption Intention has appositive and significant medium sized effect on Customer Satisfaction with a beta value of 0.454 and a significance level of 0.1%. This finding approves hypothesis 6 which states that Adoption Intention is positively related to Customer Satisfaction.

**Statistical Mediation Analyses and Interpretation**

This section demonstrates the procedures for examining the mediating role of Adoption Intention (AI) as an intermediate variable in the relationship between Customer Satisfaction (CS) and the independent variables (Awareness of Service, Perceived Usefulness, Perceived Ease of Use and Perceived Credibility). This exercise was conducted firstly by executing simple regression analyses in SPSS and thereafter used the results to execute the Sobel Test, as guided by the work of Preacher and Hayes (2008). These authors state that a variable’s mediation must meet three conditions. Firstly, the independent variable is a significant predictor of both the dependent and mediator variables (Preacher and Hayes, 2008). Secondly, the mediator variable is a significant predictor of the dependent variable. Thirdly, the effects of the independent variable on the dependent variable are reduced when the mediator variable is added to the regression model (Baron and Kenny, 1986). Mediation is completely acceptable if the effect of the independent variable is no longer significant when the mediator variable is added. On the other hand, mediation is partially accepted if the effect of the independent variable decreases, but remains significant (Baron and Kenny, 1986; Preacher and Hayes, 2008). Figure 2 shows an example of a three-variable non-recursive causal model.

**Figure 2: A three-variable non-recursive causal model**



Source: Adopted from (Tumes and Emst, 2015)

In this study’s context, M represents the mediating variable which is Adoption Intention while Y represents the ultimate dependent variable, Customer Satisfaction. Lastly, X represents the independent variables under study: Awareness of Service, Perceived Usefulness, Perceived Ease of Use and Perceived Credibility.

**Table 6: Mediation Analyses**

Independent Variable (X)	Mediating Variable (M)	Dependant Variable (Y)	Effect of IV on Mediator (a)	Effect of Mediator on Dependant (b)	Total effect (C)	Direct effect (c')	Sobel test (Z)	Degree of Mediation
Awareness of Service	Adoption Intention	Customer Satisfaction	0.586***	0.392***	0.335***	0.106	4.571***	Full
Perceived Usefulness	Adoption Intention	Customer Satisfaction	0.661***	0.351***	0.387***	0.155	4.677***	Full
Perceived Ease of Use	Adoption Intention	Customer Satisfaction	0.637***	0.178*	0.547**	0.434***	6.806***	Partial
Perceived Credibility	Adoption Intention	Customer Satisfaction	0.580***	0.165*	0.593***	0.497***	6.550**	Partial

Based on these results, mediation tests are concluded as follows:

- The relationship between Awareness of Service and Customer Satisfaction is fully mediated by Adoption Intention towards Internet Banking.
- The relationship between the Perceived Usefulness and Customer Satisfaction is fully mediated by Adoption Intention towards Internet Banking.
- The relationship between the Perceived Ease of Use and Customer Satisfaction is partially mediated by Adoption Intention towards Internet Banking.
- The relationship between the Perceived Credibility and Customer Satisfaction is partially mediated by Adoption Intention towards Internet Banking

## DISCUSSION

### Awareness of Service and Adoption Intention

The findings reveal a positive and significant relationship between Awareness of Service and internet banking Adoption Intention in Zambia contributing to the growing body of literature on financial technology adoption in developing markets. This relationship suggests that increased knowledge and understanding of internet banking services among potential users significantly enhances their propensity to adopt these technological innovations. These results align with several prior studies. Singh *et al.* (2020) documented that awareness was one of the primary drivers of internet banking adoption in India, explaining approximately 42% of the variance in adoption intentions among urban consumers. Similarly, research conducted in Ghana by Antwi-Boampong *et al.* (2022) demonstrated that targeted awareness campaigns resulted in a substantial increase in mobile money adoption rates among previously unbanked populations.

However, past literature also presents some contradicting findings that warrant consideration. Saadah and Setiawan (2023) found that in rural Indonesia, awareness alone did not emerge as a significant predictor of adoption intentions, suggesting that other factors such as trust, and technological self-efficacy might play more dominant roles in certain contexts. The study also demonstrated that companies investing in awareness campaigns experienced a reduction in customer on-boarding time, suggesting significant operational efficiencies. Furthermore, the findings suggest the need to optimize marketing resources by prioritizing awareness campaigns and designing more targeted educational programs. Organizations can better plan their market entry strategies by focusing on building comprehensive awareness programs that address both features and benefits while creating targeted educational content for different market segments. These benefits are particularly relevant in

developing markets where financial literacy and technological awareness vary significantly across different population segments.

### **Perceived Usefulness and Adoption Intention**

The empirical evidence in this study demonstrated a positive and significant relationship between Perceived Usefulness and internet banking Adoption Intention in Zambia. This finding aligns with established technology acceptance theories and other similar studies in developing markets. This finding suggests that when potential users recognize the practical benefits and utility of internet banking services, they are more likely to embrace these technological innovations. The results mirror those found by Yan *et al.* (2021) in Bangladesh, where perceived usefulness emerged as the strongest predictor of mobile financial service adoption, explaining 56% of the variance in adoption intentions. Similarly, Jin *et al.* (2019) documented that perceived usefulness was the primary driver of mobile banking adoption in Kenya, with users particularly valuing the efficiency and convenience aspects of internet banking solutions.

This implies that when individuals perceive internet banking services as useful tools for improving their financial management, reducing transaction costs, or accessing previously unavailable financial services, they develop stronger intentions to adopt these technologies. This is particularly relevant in the Zambian context, where traditional banking infrastructure may be limited, making the practical benefits of internet banking solutions more apparent. These results suggest the importance of clearly communicating the practical benefits of internet banking solutions. Banks can enhance their market penetration by developing case-specific marketing campaigns that demonstrate how their services address specific customer pain points and improve financial management efficiency. Financial institutions can achieve better market acceptance by focusing on features that users perceive as most useful in their daily financial activities.

### **Perceived Ease of Use and Adoption Intention**

The findings of this research reveal a positive and significant relationship between Perceived Ease of Use and internet banking Adoption Intention in Zambia. This relationship indicates that when potential users perceive internet banking services as simple and straightforward to use, their likelihood of adopting these financial technologies increases significantly. In a similar study, Chong *et al.* (2024) found that perceived ease of use was a critical determinant of mobile banking adoption among urban consumers in Malaysia. The research also demonstrated that user-friendly interfaces led to an increase in digital payment adoption rates among first-time users.

The positive relationship observed in Zambia means that when potential users perceive internet banking platforms as easy to navigate and understand, they experience reduced cognitive barriers to adoption. In support of this, Khatun and Tamanna (2020) found that simplified user interfaces and intuitive design features significantly reduced resistance to Fintech adoption among older users in emerging markets, highlighting the crucial role of perceived ease of use in bridging the digital divide. These results emphasize the importance of prioritizing user experience in digital offerings. Financial institutions can enhance market penetration by developing intuitive interfaces and streamlined processes that minimize the learning curve for new users. The findings suggest that organizations should invest in consumer centered design approaches and usability testing to ensure their internet banking solutions remain accessible to diverse user groups with varying levels of technological proficiency.

### **Perceived Credibility and Adoption Intention**

This study reveals a positive and significant relationship between Perceived Credibility and internet banking Adoption Intention in Zambia. This contributes meaningfully to the understanding of technology adoption factors in emerging markets. This relationship suggests that when potential users perceive Fintech services as trustworthy, secure, and reliable, they are significantly more likely to adopt these financial innovations. In Bangladesh, Mahmud *et al.*, (2022) found that perceived credibility explained over half of the variance in internet banking adoption intentions among urban consumers. Similarly, research conducted by Christian *et al.* (2019)

revealed that enhanced security features and regulatory compliance led to a 43% increase in digital payment adoption rates among previously hesitant users.

The relationship between perceived credibility and adoption intention reveals that when potential users trust the security and reliability of internet banking platforms, they experience reduced perceived risk, leading to higher adoption intentions. This is particularly crucial in developing markets where concerns about fraud and financial security are prevalent. Jin *et al.*, (2019) found that transparent security measures and clear regulatory compliance significantly increased trust in internet banking services among risk-averse users in emerging markets.

However, in rural Bangladesh, Hu *et al.*, (2019) discovered that perceived credibility had a weaker influence on adoption intentions compared to factors like social influence and perceived usefulness. They attributed this contradiction to strong community networks where social recommendations carried more weight than institutional credibility. The researchers also found that while perceived credibility was significant, its impact was moderated by prior

### **Adoption Intention and Customer Satisfaction**

The findings of the simple regression demonstrate a positive and significant relationship between Adoption Intention and Customer Satisfaction towards internet banking services in Zambia. This relationship suggests that when users have strong intentions to adopt internet banking services, they are more likely to experience higher levels of satisfaction when using these services. Research conducted in India by Aggarwal *et al.* (2023) revealed that users with strong adoption intentions reported higher satisfaction levels compared to those who adopted the technology due to necessity or external pressure.

When users have strong intentions to adopt Fintech services, they are more likely to invest time in learning and understanding the system, leading to better usage experiences and higher satisfaction levels. Khatun and Tamanna (2022) found that users with strong adoption intentions demonstrated greater persistence in overcoming initial usage challenges, resulting in higher long-term satisfaction.

Mahmud *et al.*, (2022) demonstrated that financial institutions focusing on building strong adoption intentions through comprehensive pre-launch engagement achieved higher customer satisfaction rates. The results of this study emphasize the importance of nurturing positive adoption intentions as a foundation for customer satisfaction. Organizations can enhance their service outcomes by developing strategies that not only encourage adoption but also ensure that the actual service experience meets or exceeds the expectations formed during the adoption decision process.

### **Mediation Effect of Adoption Intention**

The mediation analysis conducted in this study shows that adoption intention mediates the relationship between independent variables (perceived usefulness, perceived ease of use, perceived credibility, and awareness of service) and customer satisfaction in Zambia's internet banking context. These findings provide valuable insights into the technology adoption process in developing markets.

This mediation effect suggests that these antecedent factors influence customer satisfaction primarily through their impact on users' intentions to adopt internet banking services. Adoption Intention was found to be a full mediator for Awareness of Service and Perceived Usefulness, while the mediation effects for Perceived Ease of Use and Perceived Credibility were found to be partial.

When users develop positive perceptions about internet banking services' usefulness, ease of use, and credibility, and have sufficient awareness, these factors create a psychological readiness that shapes their adoption intentions. These intentions, in turn, influence their satisfaction levels once they begin using the services.

Firmansyah *et al.*, (2022) found that strong adoption intentions led to more positive initial user experiences and higher satisfaction levels, as users were better prepared and more committed to learning and utilizing the technology effectively.

## SUMMARY OF KEY FINDINGS

The following table illustrates the summary of the research findings in this study.

**Table 7: Key Findings**

N	HYPOTHESIS STATEMENT	STATISTICS	TEST	RESULTS
H1	Awareness of Service is positively and significantly related to adoption intention towards Internet Banking.	Beta=0.205**	Regression	Supported
H2	Perceived Usefulness is positively and significantly related to adoption intention towards Internet Banking.	Beta=0.240**	Regression	Supported
H3	Perceived Ease of use is positively and significantly related to adoption intention towards Internet Banking.	Beta=0.261***	Regression	Supported
H4	Perceived Credibility is positively and significantly related to adoption intention towards Internet Banking.	Beta=0.267***	Regression	Supported
H5	Adoption Intention is positively and significantly related to Customer Satisfaction with Internet Banking.	Beta=0.454***	Regression	Supported
H6a	Adoption Intention mediates the relationship between Awareness of Service and Customer Satisfaction.	Z=4.571***	Sobel test	Supported – Full Mediation
H6b	Adoption Intention mediates the relationship between Perceived Usefulness and Customer Satisfaction.	Z=4.677***	Sobel test	Supported – Full Mediation
H6c	Adoption Intention mediates the relationship between Perceived Ease of Use and Customer Satisfaction.	Z=6.806***	Sobel test	Supported – Partial Mediation
H6d	Adoption Intention mediates the relationship between Perceived Credibility and Customer Satisfaction.	Z=6.550***	Sobel test	Supported – Partial Mediation

### Contribution to Knowledge

The established positive relationships between awareness of service, perceived usefulness, perceived ease of use, perceived credibility, and adoption intention provide banking and financial institutions with valuable insights for enhancing their digital transformation strategies. These results demonstrate that Zambian customers' willingness to adopt internet banking solutions is fundamentally driven by their understanding of available services and their perception of the technology's practical benefits, suggesting that banks should prioritize customer education and transparent communication about their digital products and services.

The significant influence of perceived usefulness and ease of use on adoption intention reinforces the applicability of the Technology Acceptance Model (TAM) in the Zambian banking context, while also extending our understanding of how these factors specifically operate in developing markets. This knowledge enables banking institutions to better design and implement internet banking solutions that align with local customers' needs and technological capabilities. The positive correlation between perceived credibility and adoption intention highlights the critical role of trust and security in the Zambian market, indicating that banks must prioritize building stronger security measures and maintaining transparent operations to foster customer confidence in their digital services.

The findings also contribute to the broader literature on financial inclusion in developing markets, suggesting that well implemented Fintech solutions can serve as effective tools for expanding access to banking services and improving customer satisfaction in under-served markets. Furthermore, the findings also provide a foundation for future research into specific aspects of internet banking adoption and customer satisfaction in similar developing markets, while also offering practical guidelines for banking institutions seeking to enhance their digital products and services. This knowledge base can be particularly valuable for banking and financial institutions developing strategies to serve both urban and rural populations, considering the unique challenges and opportunities present in the Zambian market.

## CONCLUSION

Having noted contextual knowledge gaps in previous studies this study directly addresses some of these gaps by conducting research in Zambia thereby bridging the contextual disparity left by prior studies. The anticipated outcomes of this research are poised to offer valuable insights to decision makers and stakeholders within the banking and financial sector in Zambia, aiding them in making well-informed decisions regarding resource allocation and policy formulation to enhance the internet banking adoption rate and customer satisfaction.

Despite the limitations, this research has successfully achieved its aim. Therefore, according to the research findings, Awareness of Service, Perceived Usefulness, Perceived Ease of Use and Perceived Credibility have statistically significant contributions to Adoption Intention towards internet banking in Zambia.

Additionally, Adoption Intention has a significant and positive effect on Customer Satisfaction. The findings of this study hold practical implications for both policymakers and practitioners in the banking and financial sector. Secondly, the research outcomes significantly contribute to the existing literature on internet banking adoption in Zambia and Africa, thereby expanding the theoretical framework.

## RECOMMENDATIONS

The results revealed a significant influence of awareness, perceived usefulness, ease of use, and credibility on internet banking adoption and customer satisfaction in Zambia. Financial and banking institutions should prioritize developing awareness campaigns to educate customers about their Fintech solutions, as lack of awareness can be a major barrier to adoption.

These campaigns should focus on demonstrating the practical benefits and use cases of internet banking services in ways that resonate with the Zambian market, particularly highlighting how these services can solve common financial challenges faced by local customers.

To address the perceived usefulness factor, financial and banking institutions should focus on developing internet banking services that clearly address specific needs in the Zambian market, such as facilitating easier bill payments, money transfers, or access to credit. The solutions should demonstrate tangible value propositions that improve upon traditional banking methods. Additionally, financial and banking institutions should gather regular feedback from customers to ensure their offerings continue to meet local needs and preferences.

Given the importance of perceived ease of use, financial and banking institutions should invest in creating user-friendly interfaces that are intuitive and accessible to customers with varying levels of technological literacy. This could include developing simplified mobile applications, offer local language options, and provide clear step-by-step guidance for new users. Financial and banking institutions should also consider implementing features like offline functionality to accommodate areas with limited internet connectivity.

The significance of perceived credibility suggests that financial and banking institutions should leverage their existing reputation while building trust in their digital offerings.

This can be achieved by implementing enhanced security measures, providing clear communication about safety features, and offering guaranteed protection against fraud or unauthorized transactions. Financial and banking institutions should also ensure transparent pricing and immediate support services to maintain credibility.

## Research Limitations and Scope for Future Research

Like any other kind of research, this study has its limitations. The cross-sectional study technique limits the capacity to make long-term predictions and merely offers a snapshot to ascertain whether static connections exist; as a result, the results may be time-specific and not broadly applicable. Future studies should consider conducting longitudinal studies to ascertain whether adoption intentions formed actualize into actual usage, and the rate of adoption. The data gathered for the study was limited to the specific sample used in the research, so it might not accurately reflect the intention of all internet users throughout the nation. A larger and more varied sample from various geographical locations and social groups could be used in future studies to improve the generalizability of the results and offer a wider perspective. In the future, studies on financial technology should consider examining the factors influencing the continued usage of financial technologies and their effect on customer retention.

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