Digital Banking and Customer satisfaction: Empirical evidence from Bamenda-Cameroon

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Abstract

This research project in Bamenda, Cameroon aims to find out how happy customers are with their digital banking experience. Customers are increasingly turning to digital banking services, therefore it's crucial to know how this shift impacts their overall happiness. The research is quantitative in nature, and it gathers its data from 254 people in Bamenda, Cameroon, who are clients of several banks. Data was analysed using descriptive statistics and regression analysis. The questionnaire covers topics including digital banking and consumer satisfaction. Results from OLS revealed that use of ATM cards had a significant positive effect on consumer satisfaction, digital banking also has a positive on the consumer satisfaction and internet banking has a significant negative effect on consumer satisfaction. The research sheds light on the elements that impact customer happiness within the framework of digital banking services and offers empirical data about the link between digital banking and customer satisfaction in Bamenda, Cameroon.

Keywords: Digital banking, customer satisfaction, Bamenda-Cameroon

Introduction:

There is a pressing need for information and communication technology to play a pivotal role in the day-to-day workings of banks in the 21st century due to the increased complexity and competitiveness of the banking sector and its surroundings (stevenn, 2010). The competition among banks has intensified due to the emergence of digital banking services and features, which have revolutionized the way customers interact with their banks. These services have provided customers with more convenience, speed, and accessibility, making banking transactions easier and more efficient than ever before. As a result, banks that fail to adopt these digital banking services risk losing their customers to more innovative competitors who can offer a more seamless banking experience. Coined by Swaminathan and Ananth (2010), the term "electronic banking" describes the automated provision of traditional and innovative banking products and services to clients using electronic communication channels including websites, ATMs, and computers. Online distribution of low-dollar financial services is also included in this.

The advent of digital banking services has been a

game-changer for customers' access to and management of their money. In Africa, where traditional banking infrastructure may be limited, digital banking presents a unique opportunity to bridge the gap and provide essential financial services to a broader population. However, while the adoption of digital banking services continues to grow, it is essential to assess their impact on consumer satisfaction. According to Akinyomi and Adedeji (2019), digital banking offers consumers greater convenience and flexibility in managing their finances, leading to higher levels of satisfaction. Similarly, research by Agyei et al. (2020) suggests that digital banking enhances accessibility to financial services, particularly in regions with limited banking infrastructure, thus positively impacting consumer satisfaction. However, other scholars have identified challenges associated with digital banking adoption in Africa. For instance, Mbarika et al. (2018) highlight concerns regarding security and privacy issues, which may undermine consumer trust and satisfaction with digital banking services. Additionally, infrastructure limitations and technological barriers have been cited as impediments to widespread adoption and utilization of digital banking platforms (Sey et al., 2021).

The expansion of online marketplaces for monetary services has become more than just a differentiating factor in today's cutthroat business climate (Flavian, and Torres, 2012). Thomas (2002) argues, however, that banks have reaped the benefits of electronic banking services because of the shift in how customers engage with financial institutions.

The fact that there are longer lines at the bank and that people still carry huge amounts of cash despite the widespread use of digital banking services is evidence that consumers are still struggling to make the transition. The issue has continued despite the fact that banks are investing more resources into infrastructure and developing novel services like mobile centres to boost client satisfaction. The growing complications of digitalization are likely to blame. According to Bwonditi (2010), who studied consumer complaints about various services, namely ATMs, it is feasible to cancel a payment, undo a transaction, and get a refund, although these difficulties are seldom discussed.

Literature Review

According to research done by Yitbarek in 2015, customers of both privately and publicly held banks have significant preferences regarding the quality, dependability, customer assistance, and simplicity of their electronic banking services. The research also revealed that commercial banks' biggest challenge with online banking is downtime owing to issues including inadequate information and communication technology (ICT) infrastructure, insufficient sustainable electric power supply, and a general lack of ICT awareness among their clientele.

A study on the impact of electronic banking on customer DA satisfaction was undertaken by (Milion, 2013) at two private banks in the city of Gonder. The data was analysed using both descriptive and inferential statistics. E-banking customers tend to be younger, more educated, salaried, and students, whereas business professionals are less likely to make use of the service. The results also demonstrate that e-banking may have a positive effect on customer satisfaction by decreasing the amount of time consumers have to wait for bank assistance and giving them more agency over their finances.

By expanding the well-known framework of the Technology Acceptance Model (TAM), Ching et al. (2011) investigated what variables impact

Malaysians' desire to embrace mobile banking. In Malaysia, a questionnaire was created for self-completion and made available to the public. There was a 43.75 percent response rate since only 175 acceptable questionnaires out of 400 were returned. After collecting data, multiple regression and factor analysis were used to draw conclusions. There was a significant correlation between the likelihood of intending to utilise mobile banking and factors including perceived utility (PU), PEOU, relative advantages (RA), and personal innovativeness (PI). The sole element that was deemed to be irrelevant was social norms (SN). Mobile banking use was inversely related to PR, as was predicted.

The effect of mobile banking on bank profits in Jordan was studied by Siam (2016). The following are some of the ways in which mobile banking has affected banks' bottom lines: A negative influence on profitability in the near term. All active banks in Jordan that have a website between 2009 and 2014 make up the study's population. long-term gains for monetary prosperity. Bagudu, Khan, and Abdul-Hakim (2017) looked at how mobile banking affected the efficiency of commercial banks in Nigeria. For this research, twenty-two commercial banks were selected at random. The data needed for this study was gathered using a structured questionnaire. Data was presented and analysed using descriptive statistics and basic graphical displays. The findings indicate that commercial banks in Nigeria benefit from mobile banking in a favourable and substantial way.

Agboola (2006) determined that technology was the main factor propelling competitiveness in Nigeria's banking business. During the time he was studying, several financial services including ATMs, EFTs, smart cards, online banking, and telephone banking saw increased use. His argument is that when banks embrace ICT, it improves their image and brings in a faster, more productive client base. He claims that more investment in information and communication technology (ICT) solutions that boost service speed, customer convenience, and accuracy is necessary for bank management to remain competitive.

Mobile banking has been the subject of research by Tiwari, Buse, and Herstatt (2016), who analysed the business consequences, consumer reactions, and technological influences of mobile banking. The purpose of this research was to analyse the potential for financial institutions to attract new clients and increase earnings by providing cutting-edge mobile financial services that provide value for existing ones. Furthermore, the study found that the major barrier to customers' adoption of Access Bank's mobile banking services was the perceived credibility and financial cost of doing so. As a result, Ghanaians have developed a negative behavioural pattern towards mobile banking. It was discovered that consumers' views of the service's affordability and reliability had a greater impact on their intentions to adopt and utilize mobile banking services than their views of the service's practicality or ease of use. Therefore, it was suggested that banks in Ghana increase customer awareness via face-to-face contact and promote quality initiatives to inspire trust among their clientele. The cost of the bank's mobile banking service should also be evaluated.

In a study of 162 persons, Brown et al. (2013) found that individuals' perceptions of the benefits, the quantity of banking services they needed, the level of risk they were willing to take, and the availability of a trial period all played major roles in whether or not respondents used mobile banking. Lee et al. (2003) conducted eight interviews with study participants and analysed the resulting transcripts. They found that consumers' prior experience and self-efficacy generalised their beliefs (a negative or positive attitude) towards the

adoption of mobile banking, while perceived risk was a negative factor.

Literature Gap

The literature presents several studies focusing on the impact of electronic banking, particularly mobile banking, on customer satisfaction and the financial performance of banks in various contexts. However, there is a notable literature gap regarding the specific examination of the effect of digital banking services on consumer satisfaction in the African context most especially Bamenda-Cameroon.

Research Objectives

To this end, the researcher sought to investigate the effects of digital banking services and features on consumer satisfaction in case of commercial banks in Bamenda-Bamenda-Cameroon. Specifically to examine the effect mobile banking has on consumer satisfaction in commercial banks in Bamenda-Cameroon, analyze the effects bank cards has on consumer satisfaction in commercial banks in Bamenda-Cameroon, evaluate the effect internet banking has on consumer satisfaction in commercial banks in Bamenda-Cameroon.

Research Methodology

This study focused on the effects of digital banking services on consumer satisfaction in commercial banks in the North West, mobile banking, internet banking and bank card. These are features of digital banking services of an entity as a measure of customer satisfaction. The choice of sector is chosen based on the fact that the stability of financial institutions of an economy has a lot of positive impact on the country since financial institutions are the major payment systems in an economy.

A mixed research design was employed for this study. The method of data collection was the primary data, where questions will be asked for the respondent to answer using the Likert method. A structured questionnaire was used to randomly collect convenient sample of 254 respondents given that the total population was unknown. There are two general guidelines that Green (1991) provides for determining the minimum acceptable sample size: one is to test the overall fit of the regression model (i.e., the R^2), and the other is to test the individual predictors within the model (i.e., the b-values of the model). With k being the number of predictors, he suggests a minimum sample size of $50 + 8k$ for testing the model overall. So, with 7 predictors, the study would use a minimum sample size of $50 + 56 = 112$. For the case of individual predictors Green (1991) suggested a minimum sample size of $104 + k$, so again taking 7 predictors would use a minimum sample size of $104 + 7 = 111$. So 254 is acceptable according to Green (1991).

A model is a mathematical phrase that represents the functional connection between two sets of variables. System models are representations of systems that are built to investigate specific parts of, or the whole system (Schindler, and Cooper, 2003). Ordinary least square regression analysis is used as the model to illustrate the connection between the dependent variable and the independent variables (Landsburg, 2009).

The model used in the study took the form of a linear model. This work derived its model from a normal econometric model. We begin with the mathematics derivation. Hence, we have; Below is a schematic of the model.

$$Y = B_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + Z_i W_i + \varepsilon_i$$
Whereby:
β_i and Z_i are parameters.
Y = Customer satisfaction

X1 = Mobile Banking

X2 = ATMs

X3 = Internet Banking

Wi = control variables

ε = Error term

$β_1, β_2, β_3, β_4, β_5, β_6, β_7$ are respectively the coefficients of X1, X2, X3, and Wi measuring the shift in the dependent variable as a consequence of a one-unit shift in each of those variables, with all other factors held constant. According to conventional economic wisdom, the signs of the coefficients should be $β_1, β_2, β_3, β_4, > 0$

ε Is the disturbance term which is assumed to follow a normal distribution

Analysis & Discussion

Table 1: Summary of Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
cs	254	.6628239	.3714469	0	1
mb	254	.4076859	.263089	0	1
atm	254	.4020692	.2684349	0	1
ib	254	.5884322	.3585029	0	1
age	254	3.807087	1.088109	1	6
edu	254	4.893701	.9903286	1	7
olacc	254	1.251969	.4350004	1	2

Source: Field survey, March 2023

The customer satisfaction score has a mean of 0.6628239, indicating a moderately high level of satisfaction on average. However, the standard deviation of 0.3714469 suggests a fairly wide distribution, with some customers being very satisfied and others less so. The full range of possible satisfaction levels, from 0 to 1, is represented in the data.

The usage or adoption rates of different banking channels show some interesting patterns. Internet banking has the highest mean of 0.5884322, followed by mobile banking at 0.4076859 and ATM usage at 0.4020692. The standard deviations around 0.25-0.36 indicate moderate variability in usage across respondents, with some using each channel and others not.

The age distribution of respondents has a mean in the 35-44 years old range, with a standard deviation of 1.088109 suggesting a fairly wide spread encompassing younger and older adult age groups. The data covers the full range from under 18 to 65 and over.

In terms of educational attainment, the mean corresponds to a bachelor's degree, with a standard deviation of 0.9903286 indicating moderate variability. The sample includes respondents with education levels ranging from less than high school to doctoral or professional degrees.

Finally, the online account status variable shows that the majority of respondents, around 75%, have an online account. The low standard deviation of 0.4350004 reflects the binary nature of this measure.

Table 2: Pair Wise Correlation Matrix

	mb	atm	ib	age	edu	olacc
mb	1.0000					
atm	0.1479	1.0000				
	0.0184					
ib	-0.0876	-0.0920	1.0000			
	0.1641	0.1435				
age	0.0165	-0.0492	0.0209	1.0000		
	0.7935	0.4354	0.7405			
edu	-0.0002	-0.0419	0.0268	-0.0851	1.0000	
	0.9978	0.5057	0.6705	0.1762		
olacc	0.0351	0.0442	-0.0932	-0.1140	-0.1394	1.0000
	0.5773	0.4833	0.1384	0.0697	0.0263	

Source: Field survey, March 2023

The provided table displays a correlation matrix between the following six variables: use of mobile banking (mb), use of ATMs (atm), use of the internet for banking (ib), respondent age (age), respondent level of education (edu), and online account status (olacc).

Where a row and column meet is where you'll get the correlation coefficient for that set of data. One may interpret a correlation coefficient of -1 as a perfect negative correlation, 0 as no connection at all, and 1 as a perfect positive correlation.

As may be predicted, mobile banking has a correlation coefficient of 1.0000 with itself. The 0.1479 correlation coefficient between mobile banking and ATM use is indicative of a somewhat favourable relationship between the two. There is a slight inverse relationship between mobile banking and online banking (r=-0.0876).

The ATM has a correlation coefficient of 1.00 with itself. The coefficient of determination for the relationship between ATMs and online banking is -0.0920, indicating a modest negative relationship.

The age of respondents correlates with itself with a coefficient of 1.00. There is a slight inverse relationship between respondents' ages and their levels of schooling (r=-0.0851).

Online account status is correlated with itself at a level of 1.00. There is a little positive link between your account's online status and mobile banking (r=0.0351). Weak positive link between online account status and ATM withdrawals is shown by a correlation value of 0.0442. There is a slight inverse relationship between the status of an online account and using online banking (r=-0.0932).

According to the correlation matrix, there is a weakly positive association between online account status and mobile banking, and between online banking and the capacity of an ATM to provide information about the present status of an account. There is a little negative correlation between conventional internet banking and mobile banking and online account status. There seems to be no correlation between the other parameters.

Table 3: Robust Ordinary Least Square Result

cs	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
mb	.7943666	.0461868	17.20	0.000	.7033964	.8853368
atm	.5045085	.0839652	6.01	0.000	.3391294	.6698876
ib	-.1926711	.0540903	-3.56	0.000	-.2992082	-.0861341
age	-.0810372	.0972602	-0.83	0.406	-.2726024	.1105279
edu	-.1625839	.11615	-1.40	0.163	-.3913547	.0661869
olacc	.1774911	.263885	0.67	0.502	-.3422607	.697243
_cons	-1.17543	1.137734	-1.03	0.303	-3.416327	1.065467
		F(6, 247) = 336.63				
		Prob > F = 0.0000				
		R-squared = 0.7529				

Source: Field survey, March 2023

The estimated coefficients show how much the dependent variable is likely to shift in response to a one-unit shift in each independent variable, assuming no additional shifts occur.

The estimated coefficient for mobile banking is 0.79, which means that customers are more satisfied for every unit increase in mobile banking. The estimated coefficient is statistically significant (p 0.001), indicating a positive correlation between mobile banking and contentment.

The estimated coefficient for ATM use indicates that a one-unit increase in ATM usage is connected with a 0.50 increase in customer satisfaction. Statistically, there is a positive correlation between ATM use and customer happiness (p 0.001), as estimated by the coefficient.

The estimated coefficient for online banking is -0.1926711. This means that an increase of one unit in internet banking is correlated with a loss of 0.19 in customer satisfaction. Online banking is associated with lower levels of customer satisfaction, as shown by a statistically significant (p 0.001) negative coefficient estimate.

The estimated coefficient for respondents' age is -0.0810372, which means that an increase of one unit in respondents' age is related with a drop of 0.08. There does not seem to be a correlation between age and customer happiness, since the estimated coefficient is not significant (p = 0.406).

The estimated coefficient for respondents' level of education is -0.1625839, suggesting that an increase of one unit in respondents' level of education is connected with a 0.16 drop in customer satisfaction, everything else being equal. The estimated coefficient of correlation between level of education and level of satisfaction is not statistically significant (p = 0.164).

One unit of improvement in online account status is connected with a 0.18 improvement in customer satisfaction, while controlling for all other factors (coefficient estimate for online account status: 0.1774911). There does not seem to be a correlation between the state of a customer's online account and their level of satisfaction, since the estimated coefficient is not significant (p = 0.502).

According to the coefficient of determination (R2), 75.29 percent of the variance in consumers' happiness can be attributed to the explanatory factors. The total model provides a strong fit for the data, as shown by the F-statistic, which is statistically significant (p 0.001).

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Table 4: Variance Inflation Factor Tests for multicollinearity

Variable	VIF	1/VIF
atm	3.43	0.291474
ib	2.61	0.382432
mb	1.55	0.643486
olacc	1.04	0.958198
edu	1.04	0.965139
age	1.03	0.974963
Mean VIF	1.78	

Source: Field survey, March 2023

Several writers have defended the use of the mean VIF as a criteria for evaluating the degree of multicollinearity in OLS regression. According to O'Brien (2007), moderate to severe multicollinearity is present when the mean VIF is more than 2.5. This cutoff, he explains, coincides with the point at which the R-squared value for a regression model starts to level out and is consistent with the rule of thumb suggested by Neter et al. (1996). According to Kutner et al. (2005), high levels of multicollinearity are indicated by a mean VIF of 5 or above.

Research Findings

The estimated coefficient for ATM use indicates that a one-unit increase in ATM usage is connected with a 0.50 increase in customer satisfaction. Statistically, there is a positive correlation between ATM use and customer happiness (p 0.001), as estimated by the coefficient. Consistent with these results, Milion (2013) demonstrated that e-banking has an effect on enhancing customer satisfaction by decreasing the amount of time consumers have to wait for bank assistance and giving them more agency over their money. The effects of mobile banking on banks' bottom lines were evaluated in Siam (2016) and found to correlate significantly. Short-term damage to profits is inevitable. This conclusion contradicts the findings of Jegede (2014), who found that the deployment of ATMs terminals has on average enhanced the performance of Nigerian banks despite the high prevalence of ATM fraud. Similarly, there is a weaker relationship between the quality of an ATM's security and the privacy of its users and providers.

The estimated coefficient for online banking is -0.1926711. This means that an increase of one unit in internet banking is correlated with a loss of 0.19 in customer satisfaction. Online banking is associated with lower levels of customer satisfaction, as shown by a statistically significant (p 0.001) negative coefficient estimate. The likelihood of adopting mobile banking services was shown to be positively correlated with parameters including perceived utility (PU), perceived ease of use (PEOU), relative advantages (RA), and personal innovativeness (PI) in a study by Ching et al. (2011). This result is consistent with the findings of Malhotra and Singh (2009), who used multiple regression analysis to find no correlation between Internet banking's profitability and availability and Internet banking's significant and negative association with banks' risk profiles.

Conclusions

The study concluded that online banking is satisfying and customers are satisfied with the level of customer support provided through digital banking channels, they are also satisfied with the responsiveness for using the digitalized services.

Minority of respondents were not satisfied with the level of customization and personalization options available in digital banking. The research is focused solely on Bamenda, Cameroon. The findings may not be applicable to other regions with different socio-economic, cultural, and technological contexts.

Recommendations

The researcher also recommend that banks should include improve on their digitalized services as customers were neutral on any of this. For all customers to use digitalized services banks should create training programs for customers so that there will be proper use of the digitalized services. For banks to efficiently monitor online transactions bank should create a system where customers can file proves of transactions to the sites this is to ensure that online transactions doesn't sponsors terrorism

Scope for Future Research

Future research could conduct a comparative analysis of digital banking adoption and consumer satisfaction across different regions within Africa.

Significance of the Findings

The findings highlight the influence of different digital banking tools (ATM cards, digital banking, and internet banking) on customer satisfaction. This is pertinent as digital banking is rapidly growing globally, and understanding regional nuances helps in tailoring services to meet customer needs. Entrepreneurs can use the findings to develop or refine digital banking products that align with customer preferences, improving user experience and satisfaction. Startups planning to enter the digital banking sector in regions similar to Bamenda can use this data to strategize their market entry, ensuring their offerings meet the expectations and needs of potential customers.

Banks can leverage the results to optimize their digital services, focusing on improving aspects that positively impact customer satisfaction, such as ATM services, while addressing the negative aspects of internet banking.

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