Original Research Article

Does ebanking Services Enhance Customers Satisfaction of Commercial Banks in Douala, Cameroon?

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Abstract

Purpose: The paper has as objective to examine the effect of e-banking services (ATM, internet, mobile phone and POS banking) on customer satisfaction with reference to commercial banks in Douala, Cameroon. *Methodology*: After exploring related theoretical and empirical literature, the study adopted a descriptive survey research design with a quantitative research approach. The structured Likert scale-based questionnaires were distributed and collected from 150 e-banking service users. Multivariate regression modelling techniques was employed. The study was a descriptive survey research design with a quantitative research approach. The structured Likert scale-based questionnaires were distributed and collected from 150 e-banking service users. Multivariate regression modelling techniques was employed. *Findings*: The results of the study revealed that the model is globally significant with over 83 percent of customers satisfactions been accounted by ebanking services. Among the four constructs of ebanking, ATM service have the highest response effect followed by mobile banking and lastly internet banking which has a positive effect on customer satisfaction respectively. The effect of point of sales was positive as hypothesised but not insignificants a result, the researcher concludes that e-banking services has a positive and significant effect on customer satisfaction. *Unique contribution to theory, practice and policy:* Based on the findings, it is recommended that commercial banks should increase the number of ATM dispensers at their bank branches, effectively implement mobile devices, internet and point of sales banking to enhance greater reliability, assurance, tangibles, empathy and responsiveness of ebanking services so as to maximize customer satisfaction.
Keywords: Electronic Banking Services, Customers Satisfaction, Commercial Banks, Douala, JEF classification: G21.

INTRODUCTION

A global perspective on the evolution of e-banking can be traced to the early 1980s with some of the major commercial banks around the world notably, The Bank of Scotland offering Nottingham building society (NBS) customers the first internet banking service in the UK and calls it ''homelink'' aiding them in sending transfers and paying bills, which later on formed the basis of electronic banking services today (Asare & Sakoe, 2025). With the advent of globalization, the proliferation of electronic banking around the world has been accelerated to enable banks innovatively meet up with international standards. In Cameroon like in the global economy, electronic banking is fast becoming an integral part in the operation of every commercial banking institution. The basel committee on the banking supervision defined electronic banking as the provision of retail and small value banking products and services through electronic channels as well as large vale

electronic payments and other wholesale banking services delivered electronically (Arisa & Muturi, 2015). TechWeb News (2005) conducted a survey and found e-banking to be the fastest growing commercial activity on the Internet. In its survey of Internet users, it was reported that 13 million Americans carry out some banking activity online on a typical day, a 58 percent jump from late 2002.

In Cameroon, until 1997 banks were only offering services through physical branch. Now, with the changes in the banking environment, they are also offering electronic banking services. It was only in the 1997 that the first e-banking products were introduced. The country now has electronic services such as automated teller machines (ATMs), SMS banking, internet banking, Point of Sales (POS) machines, and telephone banking (Talla, 2013). The major banks in Cameroon are also investing a significant sum of their capital towards digital banking and digitizing their

operations in order to meet up with international standards and also to gain domestic competitiveness, Top banks in Cameroon like BICEC, Afriland First Bank, SGBC and Ecobank are paving the way in digitizing their operations and providing electronic services to their customers. The most widely used e-banking medium in terms of service delivery to commercial bank customers in Cameroon is the ATM service through which customers are issued bank cards to redraw money from their account at their convenience without necessarily going to the teller. Other forms of e-banking like online banking/internet banking are still on a slow pace in terms of adoption by commercial banks in Cameroon as compared to other developed countries or developing nations.

The proliferation of electronic bank cards and the mushrooming of automatic teller machines (ATM) in every nook and cranny of cities is testament to the electronic craze that grips Cameroon (Shih, 2004). Banks in Cameroon also face fierce competition from mobile telecommunication networks like MTN and Orange Cameroon offering Mobile Money services, leading to a financial inclusion rate of 47% and the banking sector contributing to 15% while 32% constitutes the mobile money services and Microfinance institutions according to the United Nations Capital Development Fund (2014). Before integration of electronic banking, banking operations use to take far longer time to conduct not forgetting the extensive of man power that has to be put in to perform a task that a computer can do in seconds. Likewise, the provision of banking services where customers will have to deal with the brick-and-mortar of the commercial banking institution each time they need its services. Thus, commercial banks in Cameroon are investing in digital technologies that improve their efficiency and effective in daily operations as well as their services provisions to customers. The implementation of e-banking can bring about many competitive advantages for banks in today's highly competitive banking market. The banking industry of the 21st century operate in a complex and competitive environment. Information and communication technology is at the centre of this global change curve of electronic banking system in Cameroon today. Managers in the banking industry in Cameroon cannot ignore information systems because they play a critical impact in the current banking system by pointing out that the entire cash flow of most banks are linked to information systems.

Slowly, more people are moving towards internet banking, but they are very concerned about factors such as privacy and security (Takoutio & Achamoh, 2023). The digital literacy fact sheet in 2015 stated that computer illiteracy among most of the population is still significantly high, especially in Africa, due to poor or lack of technological infrastructure and reliable power supply, lack of proper laws controlling e-transactions, and a preference for paper money over virtual cash in transactions. The application of e-banking in bank transactions is now a measure that is being adopted by almost all commercial banks in Cameroon. One of the main phenomena this study focused on was to address the aspect of e-banking service adoption and its effects on customer's satisfaction in banking institutions. It has been proven that intergrating e-banking in banking operations leads to increase efficiency and speed in terms of how transactions are conducted and service delivered thus leading to increase profitability in the long run. Prior studies conducted in Cameroon showed that many customers avoided taking up the internet banking due to the fees involved (Fonchamnyo, (2013).

Furthermore, Tamajong (2020) states that the lack of home, work and digital addresses by most Cameroonians is a factor. Most regions in Cameroon do not have marked-out postage codes, as in most developed countries. Cameroonians still post office boxes, which are not acceptable by banks for internet banking registration. This needs to be revised so that internet banking can be made easier for customers. In developed countries, banks engage in vigorous e-banking and this had helped these banks to stay competitive through productivity gains, transaction cost reduction and customer service improvement.

As a result of this emerging trend major national and international banks in Cameroon are embracing and incorporating information and communication technology in their day-to-day operation (Nkiendem, Nkemdong and Ghah, 2023) acknowledge that currently some banks like BICEC, UBA, Ecobank, Afriland Cameroon amongst others have adopted internet banking platform and a wide range of electronic products and services some of which allow customers receive their monthly bank statements via e-mail, online checking of accounts balance and for communicating to customers on regarding bank statements. Despite its benefits however, developing countries still lag behind. In Cameroon, customers who use e-banking services often complain of poor internet connection and are left grumbling and unsatisfied. It is against this backdrop and the fact that the major mission and purpose of any organisation is satisfying customers with efficient, fast and convenient services, this paper seeks to assess the level of e-banking services on customer satisfaction in commercial banks.

Specifically
- To examine the effects of automatic teller machines on customer satisfaction.
- To determine the impact of internet banking on the satisfaction of bank customers.
- To examine the extent to which mobile banking can affect customer's satisfaction.
- To identify the relationship between point of sale and customers satisfaction.

To accomplish the stated objectives, the rest of the sections are structured as follows; Section two

discusses the literature review, section three describes methodology used, then the empirical results are presented in section four while section five concludes the article.

LITERATURE REVIEW
Theoretical Literature

The implication of electronic banking has been a subject of heated debate amongst scholars. There is a huge survey of literature, which investigates the efficiency of electronic banking both theoretically and empirically. Related theories include the Technology Acceptance Model, the Extended Technology Acceptance Model, Innovation Diffusion Theory, Bank-focused model and The SERVQUAL Model and the Theory of Planned Behaviour.

The technology Acceptance Model developed in 1989 by Fred Davis. The model posits that user acceptance is determined by two key beliefs, namely perceived usefulness and perceived ease of use. Perceived usefulness is defined as the extent to which a person believes that using a particular technology will enhance her/his job performance, while perceived ease of use (EOU) is defined as the degree to which a person believes that using a technology will be free from effort (Davis,1989). The theory argues that the consumers attitude towards new technology is influenced by perceived usefulness and perceived ease of use. The theory however fail to take to account the costs involved in acquiring a new technology. Nevertheless, is still one of the most useful models in explaining the adoption of technology in the organizational context. This theory informed on the process and motivation of e-banking amongst commercial bank. Fonchamnyo, (2013) extended the TAM by identifying the drivers to customer's perception of e-banking adoption in Cameroon and revealed that perceived reliability, trust, security and accessibility have significant impact on the perceived usefulness of e-banking adoption.

The Innovation Diffusion Theory (IDT) considers that the use of technology is influenced by attitude, subjective norm and perceived behavioural control. The theory argues that the lesser the ratio of currency outside banks too broad money supply the higher the intermediation efficiency and vice versa. This suffices that when the currency outside banks diminishes as a result of the increase in the use of electronic forms of payment, particularly ATM and other e-card products, as well as banking habits, the intermediation efficiency will be positive, otherwise it will be negative (Ahmed, 2018). He explains that the innovation-decision process has five steps which include: knowledge, persuasion, decision, implementation and confirmation.

The Disconfirmation theory argues that 'satisfaction is related to the size and direction of the disconfirmation experience that occurs as a result of comparing service performance against expectations. Basically, satisfaction is the result of direct experiences with products or services and it occurs by comparing perceptions against a standard. Research also indicates that how the service was delivered is more important than the outcome of the service process and dissatisfaction towards the service often simply occurs when guest's perception do not meet their expectations. According to the theory, customers satisfaction is only when there is positive disconfirmation where perceived performance exceeds the expected performance.

Bank- focused model of mobile banking developed in 2010 by Kapoor is based on the use of non-traditional low-cost delivery channels by a traditional bank to provide banking services to its existing customers. The customer's primary concerns are the quality of experience, security of identity and transactions, reliability and accessibility of service and extent of personalization allowed. Banks address these issues by providing a branchless banking service with an easy accessibility of service and extent of personalization allowed banking service with an easy to use interface (Kapoor, 2010).
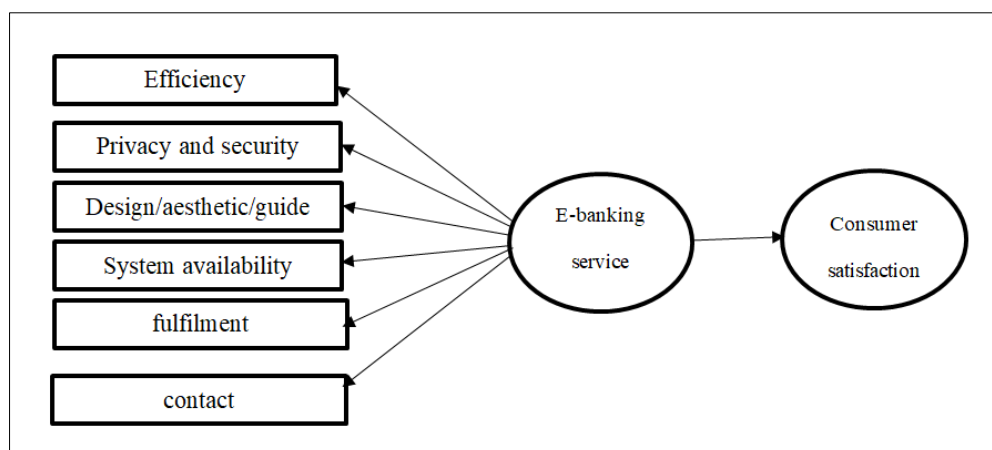

Fig. 1
Source: Kapoor (2010)

The SERVQUAL Model is used to measure customer's satisfaction and it is also referred to as the RATER model which stands for the five service factors it measures: Reliability- the organization's ability to perform the promise service accurately and dependably; Assurance- the knowledge and courtesy of employees and their ability to inspire trust and confidence; Tangibles- the physical facilities, equipment and appearance of personnel; Empathy: it is caring and individualized attention paid to customers; Responsiveness- the organization's willingness to help customers and provide prompt services.

Empirical Literature

In 2015, Asare and Sakoe investigated on the effects of electronic banking on financial services in Ghana and established that electronic banking affected financial services by empowering banking customers, improving the standard of service delivery and making banking more competitive and complex. It was established that electronic banking has a positive effect on bank productivity, banking transactions, cashier's output, bank patronage, bank services delivery, customers' services and bank services. Electronic banking has affected positively the number of people who have access to financial services in Ghana and has enabled banks to reduce cost and banking services to be delivered faster, efficiently and with less staff. They lamented that electronic banking has faced various challenges in Ghana such as security of accounts, access to internet, increased cost to customers, adoption of global technology to local requirements, ability to strengthen public and government support for electronic banking, creation of the necessary information technology infrastructural base to propel electronic banking delivery and high illiteracy rate.

Abubakar, Shagari and Olusegun (2015), in their study on the relationship between electronic banking and liquidity of banks in Nigeria established that among point of sale, internet banking and mobile banking, point of sale is the most patronized in terms of the value of transactions. In addition, the association between internet banking and liquidity was found to be negatively significant, meaning that an increase in the value of internet banking will result in a decrease in liquidity. The study also discovered that point of sale and mobile banking have no significant relationship with liquidity during the period under review while internet banking has a significant negative relationship with liquidity. Arisa and Muturi (2015) in their study on effect of electronic banking on financial performance of Commercial Banks in Kenya noted that there exists a positive relationship between electronic banking and bank performance though internet banking affects financial performance to a less extent. It is noticed that most of these studies like many other limit their empirical analysis on the effect of electronic banking on the performance of banking sector in other African countries and beyond.

Achamoh and Takoutio (2022) instead examined the effects of the adoption of ebanking services on the financial performance of some selected category II microfinance institutions in Douala-Cameroon using secondary annual data collected from nine Category II MFIs operating in Douala for the period of 14 years (2010 to 2023). From the results of Hausman selection test with p-value of 0.768, and that of Breusch Pagan Lagrangian Multiplier test with p-value of 0.000, the random effect model was appropriate and the results revealed that the contributions of mobile banking, ATM banking and online (internet) banking to the profitability of category II MFIs are all positive and statistically significant except the variable for online banking that was not significant. The study focused on MFIs and ignored customer satisfaction.

Ndikonté, and Fokou, (2020) assessed the effects of Electronic Banking on the Financial Performance of Microfinance Institutions in Cameroon using primary data and found out that Electronic banking has a positive impact on the financial performance of microfinance institutions (MFIs) as it helps the institutions to reduce operating costs, improve customer service, and increase outreach to rural areas.They noted that MFIs that offer electronic banking services have higher profits, return on assets, and return on equity than MFIs that do not offer these services. The article centered only on randomly selected MFIs and ignored the formaking sector and did not incorporate customer satisfaction.

Takoutio and Achamoh (2023) analysed the effects of internet banking security on customer satisfaction of banking sector with a sample of randomly selected 145 customers from the North West Region of Cameroon. Analysis was done using Pearson correlation and the multi regression analysis and the results shown a positive and significant effect of encryption, Firewalls and data intrusion system on customer satisfaction of banking sector in the area. In the same year, Nkiendem, Nkemdong and Ghah studied the influence of Electronic banking on customer 's satisfaction in banking institutions in Bamenda town using randomly collected primary data but did not include Point of sales which is very common in large cities nor using the MCA to normalized data. In addition, not all commercial banks were included in the data set collected.

METHODOLOGY

This study was contextually limited to the electronic banking services of commercial banks and how they influence on customers satisfaction. Survey research design was used for this study in order to collect data from customers with bank accounts using questionnaire to study their opinions and perspective toward e-banking activities and customer satisfaction in the banks. The target population of this study comprised of eleven (10) banks. They are Afriland First Bank (Bonanjo. Rue joss), Banque Atlantique Cameroun

(Bonanjo Plateau joss Immeuble CSPH), Societe Generale de Banque au Cameroun (Avenue Douala manga bell Bonaberi), Union Bank of Cameroon (UBC), Ecobank (Bonaberi Sodiko Agency, UBA Ancienne route Bonaberi next to CNPS, BICEC bank, National Financial Credit (NFC) Bank, Societe Commerciale de Banque Cameroun (SCB-CA) Bonanjo, BGFIBank and Credit Communautaire d'Afrique (CCA) Bank. The study uses a sample size of 150 respondents derived by applying the unknown population formula of Cochran as follows S= $\frac{Z^2 pq}{(E)^2} = \frac{1.96(0.5)(0.5)}{(0.08)^2} = 150.0625$.

Method of Analysis

The technique used to analyze data for this research was the multiple linear regression. Also, the collected data were edited, sorted and coded in readiness for analysis. With editing, the researcher went through the questionnaire from the field to check for the consistency of the responses. After editing, the main information was classified and tabulated. This was the process where the researcher summarized the quantitative data into statistical tables. After the table had been drawn the data was then analyzed. SPSS was employed in the entire data analysis process. The statistical methods involved those of descriptive (frequency tables, percentages, mean and standard deviation) using the Ordinary Least Square (OLS) technique. Multiple Linear Regression technique was used to test the null hypothesis by establishing the correlation between e-banking practice and customer satisfaction in the banks. Frequency and percentage tables and Bar charts were also used in the presentation of the results.

Model Specification
CS= f$(ATM, IB, MB, POS, LE, DU)$…………..1
Equation 1 can be rewritten in a stochastic format that represents Customer satisfaction as a dependent variable on E-Banking products thus:
$$CS_i = b_0 + b_1 ATM_i + b_2 IB_i + b_3\text{--}MB_i + b_4 PO_i + b_5 LE_i + b_6 DU_i + e_i ………..2$$
Where;
ATM = Automated Teller Machine
IB = Internet Banking
MB = Mobile Banking
POS = Point of Sale
LE = Level of Education
DU = Duration of Use of Electronic Banking service ()
bo = intercept
b1 to b 6 = the parameter to be estimated, which represent the slopes
e = measurement error

Description of Variables
Automatic Teller Machines (ATM)
Automatic teller machine (ATM) are electronic computerized telecommunications device that allows a bank's customers to directly use a secure method of communication to access their bank accounts, order or make cash withdrawals (or cash advances using a credit card) and check their account balances without the need for a human bank teller/cashier. ATMs is expected to enhance customer satisfaction in commercial banks.

Internet/Online Banking in Cameroon
Online banking also described as internet or web or virtual banking encompasses the fundamental idea of e-banking in the modern society which enables customers of banks to access and perform account transactions directly through the internet. It facilitates permits customers to access all of their accounts through the website of the bank and are allowed to conduct banking activities such as transferring funds, paying bills, viewing account balances and purchasing financial instruments. Internet banking is expected to enhance customer satisfaction of commercial banks.

Mobile Phone Banking
Mobile phone banking (M-banking) is the conduction of transactions and bank account management between bank and clients through mobile phone. With recent technological advancements in smart phones most bank customer's around the world including Cameroon utilize Mobile Bank Apps offered by their corresponding banks to perform numerous banking transactions through a mobile device. Customers use the mobile applications to check their account balances, check account flow and remaining, pay bills and manage their accounts. In this light, Mobile devices banking is hypothesised to positively influence customer satisfaction if well managed.

Point of Sale System/Terminal (POS)
Point of sale is the place where a customer completes a transaction, such as a checkout counter and these point of sale transactions can be processed using a wide variety of tools including cash registers, electronic card readers and barcode scanners. A POS is a device that is installed in sale centres to remove the need to transfer the physical money and to deduct money from the buyer account to add it to seller account. POS is expected to have a positive effect on customer satisfaction.

Estimation Procedure
The statistical criteria also called the first order tests employed statistical measures such as the adjusted or the R-squares value, the standard deviation, the t-statistics, and the F-statistic to find out how best and accurate the estimated coefficient are. The adjusted R-squared or R-squared shows the percentage of the total variation of the dependent variable being explained by the joint variations of the explanatory variables specified in an equation. Econometric criteria or second order tests are out to investigate whether or not the three main assumptions of the econometric method are satisfied. The test used in this study were: variance inflation factor to test for multicollinearity, the Breusch – Pagan test to test for heteroscedasticity and the Jacque Berra test to test for normality of the residual to ensure that the

estimated parameters possess their desirable properties and are reliable.

RESULTS AND DISCUSSION

The focus of this section is to present and interpret the results. The first part of the result presentation describes the both the demographic and research problem items of the questionnaire while the second part evaluates the hypotheses using inferential statistics.

4.1.1 Presentation of the Demographic Profile of Respondents

Table 1: Demographic profile of respondents

Age range of respondents	N	% of Total
15-25	19	12.67%
26-35	46	30.67%
36-45	20	13.13%
46-55	40	26..66%
56-65	20	13.13%
65 +	5	3.33%
Total All	**150**	**100.00%**
Gender of respondents		
Male	79	52.67%
Female	71	47.33%
Total	**150**	**100.00%**
Marital status		
Married	100	66.98%
Single	50	33.02%
Total	**150**	**100.00%**
Educational level		
Primary	12	7.86%
Secondary	42	27.99%
Tertiary	96	64.15%
Total	**150**	**100.00%**
How long have you been using e-banking services?		
<1year	7	4.09%
1-5 yrs.	58	38.99%
5-10 yrs.	51	33.96%
> 10 yrs.	34	22.96%
Total	**150**	**100.00%**

Source: Research Survey

As can be observed from table 4.1, out of the 150 questionnaires retrieved, 46 respondents are within the age range 26-35 years, making up about 30.67%. This is strictly followed by those respondents within the age range of 46-55 years who make up 26.66% of the total 150 respondents and least by those within the age range of 60 and above, who made up only 3.33% of the total 150 respondents. Also, of the 150 respondents, 79 were males making up about 52.67% while 71 were females, completing the remaining 47.33%. In addition, 80 of the 150 respondents were married, making up 53.33% while single were 70 making up 46.67%.

Concerning the Level of Education, 96 of the 150 respondents were of the tertiary level of education who constituted about 64.15%, strictly followed by those of the secondary education who were 42 in number and constituted 27.99% and the remainder being respondents of the primary level of education who made up only 7.86%.

Finally, taking a glance at how long respondents have been using e-banking products, we discover that a bulk of the respondents has been using e-banking products between 1 and 5 years, represented by 38.99%, followed by between 5 and 10years which constituted 33.96%. While those above 10years constituted 22.96% of the respondents and least by those less than 1year. This clearly indicates that a majority of those selected are conversant with electronic banking services and can therefore appraise their level of satisfaction.

Pre-Test Analysis

The reliability of the research instrument was tested using the Cronbach alpha. A low value for alpha may mean that there are not enough questions on the test. It is observed on the result presented in table 2, that the coefficients of Cronbach alpha exceed the benchmark of 0.7 indicating that the research instrument is reliable except for ATM (0.69) which is however very close to 0.7.

Table 2: Cronbach Alpha for Reliability Test

Variables	Number of items	Cronbach Alpha
CS	5	0.76
ATM	5	0.69
MB	5	0.82
IB	5	0.79
POS	4	0.71

The summary statistics of the key variables presented in table 2 are indices that were created using the multiple correspondent analyses (MCA). The indices were then normalized to range from 0 to 1. The mean value of customer satisfaction is 0.484793 with a standard deviation of 0.232835, while the minimum and maximum values are 0 and 1 respectively. The result shows that there is a low deviation of customer satisfaction from the mean as the standard deviation is not far from the mean and also, the mean is closer to the minimum value than to the maximum thus indicating that financial performance was relatively low during the period under study. Furthermore, the mean value for Automatic Teller Machine (ATM) stands at 0.551147 with a standard deviation of 0.205521, while the minimum and maximum values are 0 and 1 and this indicates a moderate deviation professional competence from the mean. The mean value of Mobile Banking stands at 0.442234 with a standard deviation of 0.224682. The minimum and maximum values are 0 and 1, respectively for mobile banking. This indicates a low deviation of mobile banking from the mean indicating some level of stability of the variable. The mean value of internet banking stands at 0.53937 with a standard deviation of 0.224296 and a minimum and maximum value of 0 and 1, respectively. This indicates a moderate deviation of internet banking from the mean indicating some level of stability of the variable. Finally, the mean value of point of sales was found to be 0.464342 with a standard deviation of 0.204121. Point of sales has a minimum and maximum values of 0 and 1 which also indicates low deviation from the mean and some level of stability.

Table 2: Summary Statistics

Variables	Mean	Standard deviation	minimum	maximum
CS	0.48479	0.23284	0	1
ATM	0.55115	0.20552	0	1
MB	0.44223	0.22468	0	1
IB	0.53937	0.2243	0	1
POS	0.46434	0.20412	0	1
LOE				
Secondary	0.28	0.438189	0	1
Tertiary	0.64	0.482122	0	1
DOU				
1-5 years	0.39	0.448653	0	1
5-10 years	0.34	0.498123	0	1
> 10 years	0.23	0.388937	0	1

Table 3 represents the pairwise correlation matrix which shows the correlation which exists among the variables included in our model. The correlation coefficients of the leading diagonals stand at 1.00 which indicates that each variable is perfectly collinear to itself. The results show a positive correlation between customer satisfaction and all the explanatory variables of the study. This means that an increase in the explanatory variables will result to an increase in customer's satisfaction and vice versa. The positive correlation is strong between customer satisfaction and Automatic Teller Machine (ATM), and very weak between customer's satisfaction and mobile banking. There is an average strong positive correlation between customer's satisfaction and the other independent variables (Point of sales and Telephone Banking).

Table 3: Correlation matrix

Variable	ATM	MB	IB	POS	LOE	DOU	CS
ATM	1						
MB	0.095	**1**					
IB	0.595	-0.107	**1**				
POS	0.422	-0.032	0.578	**1**			
LOE	0.431	-0.197	0.343	0.016	**1**		
DOU	0.377	-0.192	0.290	-0.077	0.380	**1**	
CS	0.880	0.129	0.691	0.436	0.456	0.400	**1**

Source: Author

The results report no evidence of multicollinearity as the correlation among the independent variables are all weak (less than the suspected threshold of 0.8). This will be further validated with the Variance Inflation Factor (VIF) presented in Table 4.

Table 4: VIF Results - Multicollinearity statistics

	Tolerance	VIF
ATM	0.472	2.119
MB	0.847	1.18
IB	0.461	2.168
POS	0.535	1.87
LOE		
Secondary	0.68	1.471
Tertiary	1.04	0.95918
DOU		
1-5 yrs.	1.8	0.55558
5-10 yrs.	1.11	0.90421
> 10 yrs.	1.77	0.56628
Total	**0.968333**	**1.310361**

Source: research survey 2023

The result in table 10 show the test for multicollinearity and the mean variance inflation factor stands at 0.9683, which is below the bench mark of 2.5. Thus, indicating the absence of multicollinearity in our model therefore indicating that our results are reliable. Results of Multiple Linear Regression model of customer satisfaction regressed on ebanking variables.

The multivariate linear regression technique was used to test the hypotheses to validate the effect of e-banking services on customer's satisfaction of commercial banks in Douala. The analysis's findings are then displayed in table 5. The model is adequate with coefficient of determination (R adjusted) of 83.51% indicating that over 83 percent of variations in the Customer Satisfaction is accounted for by variations in Electronic Banking. However, 16.49% of variations in Customer Satisfaction are accounted for by variations in other variables different from Electronic Banking (influence of the extraneous variables). This is known as the coefficient of non – determination. The Fisher's F test used to determine the risk of rejecting the null hypothesis when it is true stood at 0.0001, signifying that the risk in assuming that the null hypothesis (E-banking services do not have a significant effect on customers' satisfaction) is wrong is barely 0.01%. Therefore, we can conclude with confidence that the six independent variables used in this paper bring a significant amount of information in predicting the Customer Satisfaction in Douala, Cameroon.

Table 5: Multiple Regression Results of the model of customer satisfaction

Variables	Coefficient	Beta	Standard error	T	Pr > |t|
Intercept	-0.537		0.127	-4.237	0.0001
ATM	0.551	0.635	0.029	19.11	0.0001
MB	0.118	0.130	0.022	5.237	0.0001
IB	0.247	0.258	0.032	7.675	0.0001
POS	0.022	0.028	0.025	0.884	0.377
LOE					
Secondary	0.1157	0.082	1.40	0.164	0.0481
Tertiary	0.117	0.089	0.036	3.231	0.001
DOU					
1-5 yrs.	0.089	0.079	0.031	2.872	0.004
5-10 yrs.	0.38576	0.191	2.02	0.046	0.0068
> 10 yrs.	0.40727	0.157	2.59	0.011	0.0954
R-squared	**0.838**				
Adjusted R-squared	**0.835**				
F(9,149)	**80.6151**				
Prob >F	**<0.0001**				
Root MSE	**0.408**				

Source: research survey 2025

The regression results are presented in Table 12. The coefficient, standard deviation, beta coefficient, t-statistics, P-values and confidence interval are presented in the respectively columns.

The intercept (constant term) is the expected mean value of customer satisfaction when all independent variables are set to zero. Everything else constant, banks in the town of Douala will make a negative Customer Satisfaction in the absence of Electronic Banking. Furthermore, banks in Douala will make a significant Customer Satisfaction when Automatic Teller Machines, Mobile Banking, Internet Banking, Point of Sale, and Level of education and Duration of usage are held constant, as given by the significance of the t - statistic of 0.00% which is lower than the level of significance of 0.05.

Automatic Teller Machines has a positive coefficient. This implies that an increase in Automatic Teller Machines (ATM) is associated with an increase in customer's satisfaction. An increase in ATM by one point will result to an increase in Customer Satisfaction by 0.5514 point. Inferring from the significance of the t statistic of 19.115, it implies that we will be taking a 0.00% risk in assuming that the Automatic Teller Machines have a statistically significant effect on the Customer Satisfaction at 1% level of significance. We therefore conclude that Automatic Teller Machines service has a positive effect which is consistent with the a priori expectation and has important implications in influencing Customer Satisfaction.

Mobile Banking has a positive and significant effect on Customer Satisfaction all other variables being constant. This implies that an increase in mobile banking is associated with an increase in customer's satisfaction. For each point increase in the service for Mobile Banking, Customer Satisfaction increases by 0.1178 point. Inferring from the significance of the t statistic of 5.237, we will be taking a 0.00% risk in assuming that Mobile Banking has a statically significant effect on Customer Satisfaction at 5%. We therefore conclude that Mobile Banking service has an important positive effect on Customer Satisfaction, which is consistent with the theoretical expectation.

Internet Banking has a positive and significant effect on Customer Satisfaction all other variables being constant. For each unit increase in the quality of service for Internet Banking, Customer Satisfaction increases by 24.72%. Inferring from the significance of the t statistic of 7.675, we will be taking a 0.00% risk in assuming that Internet Banking has a significant effect on Customer Satisfaction which is lower than the level of significance of 5%. We therefore conclude that Internet Banking service quality has a positive and significant effect on the Customer Satisfaction.

Point of Sale has a positive but insignificant effect on Customer Satisfaction all other variables being constant. For each unit increase in the Point of Sale, Customer Satisfaction increases by 2.21%. Inferring from the significance of the t statistic of 0.884 we will be taking a 37.73% risk in assuming that the Point of Sale have a significant effect on Customer Satisfaction which is greater than the level of significance of 5%. We therefore conclude that Point of Sale service quality has a positive but insignificant effect on Customer Satisfaction.

The level of education has a positive and significant effect on Customer Satisfaction all other variables being constant. For each unit increase in the Level of education, Customer Satisfaction increases by 11.74%. Inferring from the significance of the t statistic of 3.231 we will be taking a 0.14% risk in assuming that the Level of education have a significant effect on Customer Satisfaction which is lower than the level of significance of 5%. We therefore conclude that the Level of education has a positive and significant effect on Customer Satisfaction.

At a 95% confidence interval, Duration of usage has a positive but insignificant effect on Customer Satisfaction all other variables being constant. For each unit increase in the Duration of usage, Customer Satisfaction increases by 8.89%. Inferring from the significance of the t statistic of 2.872 we will be taking a 100.14% risk in assuming that the Duration of usage have a significant effect on the Customer Satisfaction which is greater than the level of significance of 5%. We therefore conclude that the Duration of usage has a positive but insignificant effect on the Customer Satisfaction.

DISCUSSION OF FINDINGS
Effect of ATM on Customer Satisfaction (H1)
Automatic Teller Machines has a positive and significant effect on Customer Satisfaction all other variables being constant. For each unit increase in the quality of service of Automatic Teller Machines, Customer Satisfaction increases by 55.14%. This effect is statistically significant at 1% level of significance. The finding is in agreement with Morris-Cotterill (2002) who indicated that ATMs have extended banking services to the remote areas depositing and withdrawal of funds can be carried out in rural areas in Ghana (Asare & Sakoe, 2015) and this has enabled loading and unloading of cash in small communities or in widespread communities where people gather, however real cash ATMs for general use and deposit would require more servicing and more security. Arisa and Muturi (2015) further agrees with the study findings where in his opinion Kenyan Bank established a smart card infrastructure with biometric enabled ATMs with an aim of reducing insecurity with in the banking industry, with the use of such developments on the ATMs, withdrawal and

depositing of cash is now done safely thus yielding positive results.

Effect of Internet Banking on customer Satisfaction (H2)

Internet Banking has a positive and significant effect on Customer Satisfaction all other variables being constant. For each unit increase in the quality of service for Internet Banking, Customer Satisfaction increases by 0.2472 points. The effect is statistically significant at 1% level of significance. The study findings were contrary to what earlier scholars had indicated that online banking offers a higher level of convenience for managing one's finances even from one's bedroom (Abubakar *et al.*, 2015). However, it continues to present challenges to the financial security and personal privacy. Many people have had their account details compromised, as a result of online banking (Fatihudin & Mochklas, 2018). The effect of internet banking is negative according to Nzuve (2016) who argued that the brick and mortar banks have customer care representatives who are easier to talk to, but in case of online banking, in which the banks provide customer care numbers, the bankers find it difficult to get their problems solved.

Effect of mobile banking on Customer Satisfaction (H3)

Mobile Banking has a positive and significant effect on Customer Satisfaction all other variables being constant. For each unit increase in the quality of service for Mobile Banking, Customer Satisfaction increases by 11.78%. The effect of Mobile Banking is statistically significant at the 5% level of significance indicating that it has an important influence on Customer Satisfaction. These findings confirmed the works of Lenka and Sharma (2017) and that of Mutua (2017) who pointed out that telephone banking is a facility that enables customers, via telephone calls, find out about their position, with their bankers merely dialling the telephone numbers given to them by the banks. In a like manner, Ojo *et al.*, (2019) iterated that banks have started to adopt telephone banking so as to improve on customer satisfaction worldwide. However, Mattila, M. (2016) have a contrary view that mobile banking is not very secure for huge financial transactions.

Effect of Point of Sale on Customer Satisfaction (H4)

Point of Sale has a positive but insignificant effect on Customer Satisfaction all other variables being constant. For each unit increase in the Point of Sale, Customer Satisfaction increases by 2.21%. Inferring from the significance of the t statistic of 0.884 we will be taking a 37.73% risk in assuming that the Point of Sale have a significant effect on Customer Satisfaction which is greater than the level of significance of 5%.

CONCLUSION

This study employed a quantitative research quantitative research approach with a descriptive research design aimed to examine the effect of e-banking services on customer satisfaction in commercial banks. All four hypotheses formulated to guide the study are attained. The first, second and third research hypothesis on the effect of ATM, internet banking and mobile banking service quality on customers satisfaction of commercial banks respectively were achieved as they all have a positive and significant effect on customer satisfaction while point of sale system has a positive but insignificant effect on customer satisfaction.

The results of the findings have shown that e-banking is an important instrument to use in promoting customer satisfaction. The banks should make sure they increase the number of ATM dispensers at their bank branches, effectively implement mobile devices, internet or web and point of sales banking and guarantee the customers of the security in using such services for their financial transactions with much confidence thereby enhancing greater reliability, assurance, tangibles, empathy and responsiveness of ebanking services and hence promote customer satisfaction.

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