



## Effects of internet banking and service quality on customers' satisfaction of selected financial institutions in Ghana

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### Abstract

The study investigates the effects of internet banking and service quality on customers' satisfaction of selected financial institutions in Nigeria. Explanatory design was employed to examine the relationship between internet banking and service quality (independent variables) and customers' satisfaction (dependent variable). Questionnaire was personally administered to elicit data from 280 customers of selected financial institutions in Ghana. The Statistical Package for Social Sciences (SPSS) version 23 was used for data analysis. The study showed a significant positive relationship between internet banking and customer satisfaction. Also, the result revealed a significant relationship between service quality and customer satisfaction. Managerial implications and directions for future studies are discussed.

**Keywords:** Internet banking, service quality, customer satisfaction, banks, Ghana

### Introduction

The business world is experiencing immense change today due to the advent of technology and the continuous change in consumers' needs. With the emergence of technology such as the internet, consumers have been exposed to tones of information on daily basis providing them with enough room to make informed purchase decisions. In order to court consumers' attention, organizations in different industry around the globe have had to embrace the power of the internet to transact businesses and even to disseminate information (Car *et al.*, 2019). According to Samar *et al.* (2017), the adoption of the internet has seen a significant rise in the new millennium which hitherto was alien to businesses and majority population of the world; the banking sector has not been left out in this new age of internet as banks are able to communicate effortlessly with customers (Hammoud *et al.*, 2018)

Mazuri *et al.* (2017) defined internet banking as "a network technology making it possible to combine different computers together globally". The significance of banking in our society and economy today cannot be overemphasized considering its enormous contribution to economic development (Islam *et al.*, 2020)

With the heightened competition in the banking sector, the firms have had to grapple with the realities of the internet to provide innovative services to customers and to differentiate themselves from competitors. With this novelty, Appiahene *et al.* (2019) posited that the firms in the banking sector can leverage on the power of internet to woo potential customers who are "internet lovers".

Flavián *et al.* (2017) <sup>[14]</sup> and Gan *et al.* (2016) are of the belief that internet banking has become a competitive requisite instead of just a way to achieve competitive advantage due to the advent of globalization and fiercer competition. To buttress this, Wibowo *et al.* (2019) intimated that banking is no longer bound to time and geography as transaction can be performed any day at any time. With the click of the mouse, consumers who felt that branch banking took too much time and effort are now able to transact business effortlessly. Banks equally benefit from minimizing cost ((Ezenwafor *et al.*, 2020), access to new

customers in a different segment of the market (Appiahene *et al.*, 2019), efficiency, enhancement of brand image and reputation and the delivery of quality customer service leading to customer satisfaction (Dwamena & Nyarko, 2018).

Given the numerous internet advantages to businesses around the globe, firms in the Ghanaian banking sector have also embrace this new development. Unlike the developed world with fewer challenges, the firms in Ghana are besieged with myriad of challenges notable among them are high internet cost, frequent power outages, lower internet coverage, high rate of illiteracy among others. Notwithstanding the challenges, the firms use the internet to offer services to both domestic and foreign consumers, to extol service benefits, disseminate information and offer innovative services to court consumers' attention (Ofosu-Boateng & Agyei, 2020) <sup>[24, 25]</sup>.

However, according to Dzomira (2018), providing successful internet banking requires absolute security and service quality. Camel & Pape (2020) intimated that firewalls as a network security system that monitors and controls incoming and outgoing traffic based on predetermined security rules can be mounted by banks to enhance security. Ofosu-Boateng & Acquaye (2020) <sup>[24, 25]</sup> stressing on the importance of service quality posited that service providers must focus on offering quality service in order to satisfy customers; to induce loyalty".

Extant literature is replete with studies on internet banking (Al-Thobhani & Al-Maweri, 2021 <sup>[3]</sup>; Eren, 2020; Mukhtar; 2015; Rahi *et al.*, 2020 <sup>[30]</sup>; Shanmugam *et al.* 2015) <sup>[33]</sup>. However, these studies were carried out in the Western World. Also, studies carried out by Akuffo-Twum, 2011 <sup>[5]</sup>; Agyei *et al.*, 2021; Ofori *et al.*, 2017) <sup>[23]</sup> in a developing country such as Ghana have examined The Effect of Internet Banking On the Ghanaian Banking Industry, Internet Banking Services User Adoption in Ghana and Examining customers' continuance intentions towards internet banking usage respectively. Notwithstanding the numerous studies carried out to examine issues in the wider context of internet banking, comprehensive study in the area of internet banking and service quality simultaneously on customers'

satisfaction in the context of Ghana is either sparse or non-existence. More so, most of these studies failed to address the security issues endangering internet banking in Ghana. This study seeks to fill this gap in knowledge by investigating the effects of internet banking and service quality simultaneously on customers' satisfaction in the Banking Industry of Ghana, thus contributing to the existing academic literature on the subject.

### Research Objectives

1. To investigate the factors contributing to consumers' adoption of internet banking in Ghana and;
2. To examine the security issues hindering internet banking service in Ghana

### Statement of Hypotheses

The following null hypotheses have been formulated to guide the researchers in the pursuit of the study.

1. there will be a significant positive relationship between internet banking and customer satisfaction of selected financial institutions in Accra, Ghana
2. there will be no significant relationship between service quality and customer satisfaction of selected financial institutions in Accra, Ghana
3. there will be a significant relationship between internet banking and service quality and customer satisfaction of selected financial institutions in Accra, Ghana

### Scope of the Study

The contextual scope of the study is centered on the effects of internet banking and service quality on customers' satisfaction of selected financial institutions. The geographical scope of the study is centered on the Accra Metropolis. The city is occasioned with frequent media reports of having a high rate of internet banking fraud. Additionally, the study considers this geographical location because the city is believed to have a larger number of banks in relations to other administrative capitals in Ghana.

### Significance of the Study

The study aims to contribute towards broadening the knowledge and understanding of players and stakeholders in the financial institutions particularly the banking sector on the threat of internet fraud on financial performance. It is also hoped that readers will be exposed to what constitutes fraud in internet banking thereby gaining a better understanding of the phenomenon. More so, the study will be beneficial to the government, security agencies, and other stakeholders in the policy formation whose understanding will help in mapping out strategies to address the problem.

### Literature review

#### The Concept of Internet

Internet, a global system of computer networks, first appeared in 1969 under the name "Advanced Research Projects Agency Network" in the United States (PBS Online, 2003). At present, about 13 millions serves are linked to the Internet across the globe, 99 per cent of which are located in advanced countries (CSE Online, 2003). At an advanced level, Internet banking is called transactional online banking, because it involves provision of facilities such as accessing accounts, funds transfer and buying financial products or services online" (Mattila *et al.*, 2001) <sup>[20]</sup>. Internet banking refers to the use of the Internet as a

remote delivery channel for banking services, including viewing and verifying transactions on account.

#### The Concept of Internet Banking

The concept of inline banking rise from the Global Finance Houses whose primary objective was to ensure that customers were tuned to their finances from any part of the world. Though it started in the 1980s, it was only in the mid-nineties that Internet Banking really caught on. The last decade has witnessed a significant growth in Internet Banking transactions. Pikkarainen *et al.* (2004) <sup>[28]</sup> defined Internet Banking is as an "Internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments". Internet Banking can mean the setting up of a web page by a bank to give information about its products and services; at an advance level, it refers to banking transactions carried out between banks and their clients through internet (Peterson, 2000). Internet Banking enables banks to provide interactive services such that customers can access account summary information, pay bills and access other banking products/services.

#### Factors Contributing to Consumers' internet Adoption

According to Rahi *et al.* (2018a), the motivation to adopt depends on the customer service quality perception. The authors postulated that if the customer perceives a high level of service quality delivery, the motivation to adopt will be high likewise, a low level service quality delivery will demotivate customer adoption (Rahi *et al.*, 2018a). Samar *et al.* (2017) averred that customers perceive internet banking to be convenient and timesaving and for that matter consider it as a high level service quality delivery hence, the adoption. This is buttressed by Syahril *et al.* (2022) <sup>[37]</sup> underscored the significance of the internet to both customers and firms by stating that firms can leverage on the power of internet to market products/services worldwide at relatively cheaper cost whilst customers can equally transact business effortlessly at the comfort of their homes, thus, the internet ensures cost and time efficiency and has the tendency of enhancing good customer service" (Marfo-Yiadom & Ansong, 2012) <sup>[19]</sup>. Internet Banking offers the option to provide economic and convenient services without reducing the quality of services offered to customers (Akinci *et al.*, 2004).

#### Security Issues Hindering Internet Banking Service

Dzomira (2014) <sup>[11]</sup> contended that successful internet banking requires absolute security and service quality. Longe & Chiemekwe (2006) identified credit card schemes such as advance fee fraud, phishing attack, identify theft, spamming, password sniffing, hacking, cyber pornography and obscenity and malicious software as security issues blurring internet banking service. However, the study will examine only four of those security concerns: credit card schemes, phishing attacks, identity theft and spamming.

**Credit Card Schemes:** Credit card scheme fraud is a type of fraud where criminals get access to the detail information of credit card holders without their awareness. Victims may notice fraudulent anomaly on their account or money withdrawn from their account but their credit card remain possession (Njanike *et al.*, 2009).

**Phishing Attacks:** Phishing is a type of internet issue where criminals attempt to acquire sensitive information from victims. Criminals often pose as legitimate institution to obtain information such as usernames, password and personal identification number from victims. According to Tendelkur (2013), the information is then used to access important accounts which often lead to identity theft and financial loss.

**Identity Theft:** The unlawful use of someone else's information for personal gain is referred to as identity theft. According to McGuire & Dowling (2013), identity theft has become a common problem for internet banking providers. Personal vital information such as residential or office address, bank account, signature, name and any other relevant information are solicited without the knowledge of the owner for personal financial gain (Pittaro & Schmallegger, 2009).

**Spamming:** Spamming is a type of fraud where unwanted emails such as advertising and pamphlets are sent to persons through their emails. Perpetrators often solicit the email addresses from the internet or buy them from persons purported to run websites where others sign up. According to Schjoberg & Ghernaouti-Hélie (2009) and Geeta (2011), spamming is often deleterious and malicious in nature and in most cases appeared to be emanating from financial and reputable institutions

### Service Quality Defined

Literature abounds on service quality. Notwithstanding, there has not been a general consensus pertaining to its definition Seth *et al.* (2005). As a result, the subject has generated a myriad of definitions. For instance, O'Neil & Palmer (2004) define the subject "as the difference between what a customer expects to receive and his/her perceptions of actual delivery. Caruana (2002) defines service quality "as the comparison between what customers expect and the perception of the service they received. Shahin (2010) contend that service quality is how a customer can perceive a service. Nath & Zheng (2004) define service quality as "the measurements of organizations' service and the outcome or the expectations of the perceived service. Parasuraman *et al.* (1985) [27] defined quality as "conformance to requirements". Service quality can be defined as customers' perception of how well a service meets or exceeds expectations.

### Service Quality Dimensions

The work of Parasuraman *et al.* 1985 [27] identified ten determinants of service quality: tangibility, reliability, responsiveness, communications, access, competence, courtesy, credibility, security and understanding/knowledge of customers. These were later compressed to five: tangibility, responsibility, reliability assurance and empathy which is also referred to as SERVQUAL (Parasuraman *et al.*, 1988). Interestingly, marketing students formed an acronym RATER from the first capital letter of every dimension.

**Tangibility:** Appearance of the physical facilities, equipment, personnel and communication materials.  
**Reliability:** Ability to perform the promised service dependably and accurately. Reliability means that the

company delivers on its promises. Responsiveness: Willingness to assist customers and provide prompt service. The dimension emphasizes attentiveness and promptness in dealing with customer's requests, questions, complaints and problems. Assurance: Ability to inspire trust and confidence. Assurance is defined as employees' knowledge of courtesy and the ability of the firm and its employees to inspire trust and confidence. Empathy: Providing caring individualized attention the firm provides its customers.

### Concept of Customer Satisfaction

Customer satisfaction has a rich history of over seventy years. According to Lester (1936) [18], the concept was first referenced in the Journal of Marketing Management; since then, customer satisfaction has been recognized as the antidote for organizations' success. The subject, however, has faced greater challenge regarding unanimous definition acceptance. As a result, different definitions have emerged from different authors. For instance, Farris *et al.* (2015) [13] defined customer satisfaction as 'the number of customers, or percentage of total customers, whose reported experience with a firm, its products, or its services exceeds specified satisfaction goals' Aragchi (2007) viewed customer satisfaction as a result of a cognitive and affective evaluation, where the author contended that some comparison standard is compared to the actually perceived performance by the customer. According to Mosahab *et al.* (2010), customer satisfaction is an important factor to evaluate how good an organisation is performing as satisfied customers will convey their good service experience to others. Satisfied customers contribute to customer retention and reducing churn.

### Internet Banking and Customer Satisfaction Relationship

Customer satisfaction has become indispensable for sustainable competitive advantage in that customer satisfaction does not only defines the image of the products/services but does as well with the company which customers have in mind (Ofosu-Boateng & Agyei, 2020) [24, 25]. Defined as "the difference between customers' experience with the product/service and expectations" (Razaka & Shamsudinb (2020) [31]. The internet has provided a myriad of opportunities for businesses to thrive and according to Agba (2002), firms can provide various services to customers around the globe effortlessly. The 21<sup>st</sup> century customer is fastidious about time and the opportunity granted to attend banking needs online could trigger customer satisfaction. In the study of Murdifi *et al.* (2021) [21], the authors found a relationship between internet banking and customer satisfaction. Also, the study of Worku *et al.* (2016) [39] found out that internet banking has the potential to improve customer satisfaction. However, Usman & Shah (2013) [38] shared otherwise. According to the authors, the internet has rather become a torn in the flesh of both customers and financial institutions (banks) worldwide which has become inimical to businesses which could injure customer satisfaction.

### Service Quality and Customer Satisfaction Relationship

Parasuraman *et al.* (1985) [27] defined service quality "as the dissimilarity between customer expectations and customer perceptions. The desire of customers is to see service providers providing tailor-made services to meet their

wants. According to Parasuraman *et al.* (1988, 1985) <sup>[27]</sup>, service quality revolves around customers. This means that banks can improve service delivery to delight customers and do away with the unpleasant experience of customers. Grönroos (2000) shared in this submission and opine that the banks can achieve customer satisfaction when they offer high quality service. The study of Caruana & Malta (2002) found service quality to be an important input into customer satisfaction. Also, the study of De Leon *et al.* (2020) <sup>[19]</sup> found a significant influence of service quality on customer satisfaction. However, Oparah *et al.* (2018) <sup>[26]</sup> could not agree entirely with the work of Caruana & Malta (2002) and De Leon *et al.* (2020) <sup>[19]</sup>. In the study of Oparah *et al.* (2018) <sup>[26]</sup>, the authors did though identified service quality as one of the major determinants of customer satisfaction but contended that the dimensions of service quality vary from one service sector to the other

### Internet Banking, Service Quality and Customer Satisfaction Relationship

Daniel (2009) defines internet banking as “electronic connection between a bank and customer in order to prepare, manage and control financial transaction”. Internet banking or online banking allows customers to use all the banking services from a computer which has internet access. Customer can perform financial transactions on a secure website operated by banks. With the internet, banks can offer innovative services to customers as innovation is seen not only as a catalyst for development but also the means by which organizations (banks) can churn out tailor-made products/services to meet the growing and sophisticated needs of consumers. A high service quality can be delivered as a result of the use of the internet to enhance customer satisfaction. One of the main elements of customer service quality is customer satisfaction (Haq & Muhammad, 2012) with the purpose to enhance purchases (Kabir & Carlsson, 2010). Nhat & Hau (2007) is of the view that such enhancement in high service quality will impact significantly on customer satisfaction. This view is corroborated by Ladhari (2009) who posited that service quality can offer benefits such as low staff turnover, customer satisfaction and retention, operating cost reduction, rise in share price, positive word of mouth, and increase profit as well as improvement in the overall financial performance.

### Conceptual Framework

The study sought to test the stated hypotheses i.e. the independent variables (internet banking and service quality) and the dependent variable (customer satisfaction variable). As a result, a construct is formulated as depicted in figure 1

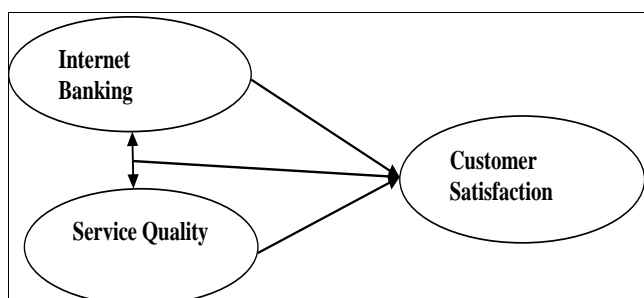


Fig 1: Conceptual Framework

### Methodology

#### Research Design

Research design as described by Sekaran (2000) “is that which involves the planning of the actual location of the study, how to select the sample and collect data and how to analyse the data”. Zikmund *et al.* (2012) describe research design as “a detailed blueprint used to guide the implementation of a research study towards the realization of its objectives. The study employs the explanatory design. According to Saunders *et al.* (2009), explanatory design helps a researcher to obtain information about a situation or problem in order to explain the relationship among variables; since the study intends to investigate the relationships between the stated variables, the adopted design is considered appropriate.

#### Population of the Study

Banerjee *et al.* (2007) <sup>[6]</sup> define population “as an entire group about which some information is required to be ascertained. The population for this study consists of customers of four (4) selected banks (i.e. Ghana Commercial Bank, Stanbic Bank, Calbank and Zenith Bank) offering internet banking services in Accra, Ghana.

#### Sampling Technique and Sample Size

Fowler (2008) describes sampling “as the processes of selecting units from a population of interest so that by studying the sample, we may fairly generalize our results back to the population from which they were chosen”. For the study, a probability sampling technique is used (particularly, a simple random sampling technique) to elicit data from the customers of four (4) selected banks offering internet banking services in Accra, Ghana.

#### Sample Size

Agresti & Finlay (2009) define sample size as “a sub-set of a population”. For the study, a sample size of 280 is selected to represent the entire population of the four (4) selected banks offering internet banking services in Accra, Ghana. According to Kent (2007), a sample size of one hundred (100) and beyond is sufficient for quantitative research. However, Coakers & Steed (2003) suggested not less than two hundred (200) sample-size for quantitative research. Since the sample-size is beyond 100 and 200, the chosen sample-size is considered appropriate.

#### Sources of Data

Field survey will be used to solicit data from respondents. Questionnaires and interviews will be the instruments used for the data collection.

#### Distribution of Questionnaires

Questionnaire administration took rather a longer period of time than anticipated. This was due to the COVID-19 social distancing protocols in place. As a result, it took approximately two (2) months to administer questionnaire and conduct interviews. Each respondent spent about 16 minutes in responding to the questionnaire.

#### Data Analysis

The study will employ the use of Statistical Package for Social Sciences (SPSS) version 23.0 for the data analysis. Presentations of the findings will be tabulated and discussed

with reference to existing studies to ensure easy understanding.

**Validity and Reliability**

Reliability suggests the degree to which measurements are conducted effectively. To ensure reliability, the Cronbach Alpha ( $\alpha$ ) was used. According to Devellis (2003), the Cronbach alpha coefficient should be above 0.7. Cronbach alpha values above 0.7 are acceptable and values that are above 0.8 are preferable. The validity of the study was also ensured by pre-testing the questionnaire.

**Ethical Consideration**

In the views of Zikmund (2000), ethics involves ‘the codes of behaviour adopted by the researcher’. It is also the moral principles that guide researchers to conduct research without deception or intention to harm the participants of the study. Polychronidou *et al.* (2014) [29] also shared that the participants' volunteering rights and confidentiality must be of importance to the research process. Guiding by this principle, participants were encouraged to participate at will.

**Results and discussion**

**Background Characteristics of f Respondents**

The study showed a preponderance of male customers on internet banking as against women. Male customers recorded 71.4% as against 28.6% of women customers. Obviously, the male customers on internet banking are the majority.

The age group 20-29(140) was the majority followed by the age group 30-39(100). The age groups 40-49 and 50-59 recorded (25) and (15) respectively. From the study, it is apparent that the younger generations are enthused with internet banking services than the aged.

Findings of the study revealed that customers with other certificates are the majority (120) followed by master degree holders (90). Bachelor degree holders were (46) whilst the least being professional certificate holders (24). From the study, the attainment of education was clear but with varied certificates.

**Table 2:** Relationship between internet banking and customer satisfaction

Hypothesis	Independent variable	Dependent variable	Adjusted R Square	Coefficient of independent variable	intercept	Model	T Stats	Results
1	Internet banking	Customer satisfaction	0.45	0.52	1.84	Y=0.82x+1.64	12.74	Accepted

**Hypothesis Two:** there will be no significant relationship between service quality and customer satisfaction

The statistics shows an adjusted R square of 0.80% which explains that internet banking will influence customer satisfaction by 80% while about 20% remaining is the contribution of other variables. Also, the coefficient of 0.82 implies that if internet banking is increased by 1 unit, customer satisfaction will have a corresponding increase of 82%. More so, the intercept has additive influence but the

**Table 3:** Relationship between service quality and customer satisfaction

Hypothesis	Independent variable	Dependent variable	Adjusted R Square	Coefficient of independent variable	intercept	Model	T Stats	Results
1	Service quality	Customer satisfaction	0.80	0.82	1.88	Y=0.64x+1.84	14.44	Accepted

**Reliability Statistics**

The stability and internal consistency of the responses was ascertained using the Cronbach Alpha ( $\alpha$ ). Devellis (2003) posits that the Cronbach Alpha coefficient should be above 0.7 and that Cronbach Alpha of 0.7 is found reliable and values that are above 0.8 preferable. The coefficient value of Cronbach Alpha realized for the three variables of the study is 0.860 which is higher and preferable. This is evident in Table 7.

**Table 1:** Reliability of variables

Cronbach's Alpha	Number of Items
0.860	3

Source: Researcher's Field Work, 2025

**Model Hypothesis**

According to Saha (2018), correlation helps to identify the strength and direction relative between two or more variables. Correlation also helps to show the relationships between two or more variables. The correlation analysis was carried in order to make the result scientific

**Hypothesis 1:** there will be a significant positive relationship between internet banking and customer satisfaction

The statistics shows an adjusted R square of 0.45% which explains that internet banking will influence customer satisfaction by 45% while about 55% remaining is attributed to other variables. Also the coefficient of 0.52 implies that if internet banking is increased by 1 unit, customer satisfaction will have a corresponding increase of 52%. More so, the intercept has additive influence but the influence is considered meaningful only when the relationship is significant. The significance can be tested by the t-statistics results. The t-statistics result of the model is 12.74. A significant t-statistics should be above 1.96 and below -1.96 and since the t-statistics of the study is above 1.96, it can be concluded that the relationship is significant. We can therefore accept the null hypothesis of the study: *there will be a significant positive relationship between internet banking and customer satisfaction* and reject the alternative hypothesis. Table 2 presents the results

influence is determined by its significance. The significance can be tested by t-statistics results. The t-statistics result of the model is 14.44. A significant t-statistics should be above 1.96 and below -1.96 and since the t-statistics of the study is above 1.96, it can be concluded that the relationship is significant. We can therefore reject the null hypothesis of the study and accept the alternative hypothesis that there is a significant relationship between service quality and customer satisfaction. Table 3 presents the results

**Hypothesis Three:** there will be a significant relationship between internet banking and service quality and customer satisfaction

The results of the statistics revealed an adjusted R square of 0.85%. The adjusted R square of 0.85 percent implies that internet banking and service quality has 85% influences on customer satisfaction while about 15 percent influence is attributed to other variables. Also, the coefficient of 0.86 implies that if internet banking and service quality is

increased by 1 unit, customer satisfaction will have a corresponding increase of 86 percent. The intercept has additive influence which must be determined by its significance. The t-statistics is used to test the significance. The t-statistics result of the model is 16.62. A significant t-statistics should be above 1.96 and below -1.96. Since the t-statistics of the study is above 1.96, we can conclude that the relationship is significant. Therefore, the null hypothesis is accepted as we reject the alternative hypothesis of the study. Table 4 presented the results

**Table 4:** Relationship between internet banking, service quality and customer satisfaction

Hypothesis	Independent variable	Dependent variable	Adjusted R Square	Coefficient of independent variable	Intercept	Model	T Stats	Results
1	Internet banking and Service quality	Customer satisfaction	0.85	0.84	2.08	$Y=0.72x+1.86$	16.62	Accepted

**Conclusion**

The purpose of the study was to investigate the effects of internet banking and service quality on customers’ satisfaction of selected financial institutions in Accra, Ghana. The use of explanatory design was employed to examine the relationship between internet banking and service quality and customers’ satisfaction.

The findings of the study showed that the selected financial institutions in Accra, Ghana, have a preponderance of male customers on internet banking than women

From the study, it is apparent that the younger generations are enthused with internet banking services than the aged. This is evident with the age groups 20-29 and 30-39 recording 50% and 35.7% respectively. The age group 40-49 recorded 8.9% whilst the least age group was 50-59 recording 5.3%.

The results of the study revealed that customers on internet banking of selected financial institutions in Accra, Ghana, have attained education with varied certificates. Other certificates holders are the majority representing 42.8%. This was followed by master degree holders representing 32.1%. Bachelor degree holders accounted for 16.4% whilst the least customer group was professional certificate holders representing 8.6%. This was envisage in that internet banking requires some level of education

The findings of the study showed a significant positive relationship between internet banking and customer satisfaction. With an adjusted R square of 0.45 percent, the study concludes that internet banking influences customer satisfaction by 45 percent while about 55 percent remaining is attributed to other variables. The finding is consistent with literature as stated by Marfo-Yiadom & Ansong (2012) [19] that internet banking is fast, time-saving, comfort and easy access, and has the tendency of enhancing good customer service; according to O’Connor & Galvin (2001) [22], this has led to a significant rise in the adoption of internet banking especially among the millennial. Also Ozatac *et al.* (2016) posit that higher quality internet banking service could drive customer satisfaction.

The results of the study also showed a significant relationship between service quality and customer satisfaction. With an adjusted R square of 0.80 percent, the study demonstrates 80 percent influence of service quality on customer satisfaction while about 20 percent remaining is contributed to other variables. As stated by literature, service quality is considered very important because it can lead to higher customer satisfaction, profitability, cost

reduction, customer loyalty and retention (Ofosu-Boateng & Acquaye, 2020) [24, 25]. Also, Sureshchandar *et al.*, (2002) [36] intimated that good service quality does not only result in customer satisfaction but also aid organizations to gain a successful competitive edge over competitors.

Further, the study found a significant relationship between internet banking and service quality and customer satisfaction. The evidence of adjusted R square of 0.85 percent suggests 85 percent influences of internet banking and service quality on customer satisfaction while about 15 percent influence is attributed to other variables. Extant literature suggests internet banking could enhance service delivery and as stated by Nhat & Hau (2007), a high service quality will impact significantly on customer satisfaction.

**Managerial implications, future studies and limitaions of the study**

**Managerial Implication**

The significance of internet banking cannot be underestimated as banks are able to chum out innovative products and deliver quality services to satisfy customers’ needs. Given that the 21<sup>st</sup> century customer is fastidious about time, internet banking is making it possible for customers to access the bank’s products wherever they find themselves in the globe (KPMG, 2012).

Therefore, bank managers should leverage on internet banking to provide innovative services to meet the growing needs of customers. More importantly, managers of the bank should consider security issues as a major challenge to internet banking so as to find measures to ameliorate the disturbing situation. Since curbing internet banking fraud is a tall order Tan (2002, cited in Dion, 2010), because the fraud is often committed in the cyberspace, making an arrest of the perpetrators become more difficult; since the platform for perpetrating the crime is virtual, periodic security measures should be provided to both staff and customers of the bank to ward off internet banking fraudsters

The heightened competition in the banking space called for the delivery of high service quality (Grönroos, 2000). It is argued that delivering quality service to satisfy the customer is indispensable and non-negotiable since customers are becoming more sophisticated. Bank managers should, therefore, consider the delivery of high service quality as paramount input into customer satisfaction. This is because, service quality is considered to have a strong association with satisfaction (Culiberg & Rojšek, 2010) [18]

More so, given that customer satisfaction is seen as a key differentiator in the banking space, the internet should not be seen as a mere communication tool. Bank managers should focus on the added advantage of the internet to churn out innovative services to customers and to enable them differentiate themselves from competitors. Thus, the application of the internet and the delivery of superior service quality by bank managers should be geared towards customer satisfaction.

### Future Studies

The study investigates the effects of internet banking and service quality simultaneously on customers' satisfaction in the Banking Industry of Ghana.

Future studies can be replicated in service sectors other than the banking sector to ascertain the relationships between the independent variables (internet banking and service quality) and the dependent variable (customers' satisfaction). Again, future studies can be conducted with larger sample size using a region with relatively different characteristics from that of Accra.

### Limitations of the Study

The study did not expand to cover large respondents across the regions of Ghana. This challenge was compounded by time and the constraints of resources. For which reason, the study was limited to the Accra Metropolis. Also issues of Covid-19 social distance protocols hamper the smooth collection of data. Notwithstanding, strenuous efforts were made to ensure the success of the study

### References

1. Abd Razak A, Shamsudin MF, Abdul RM. The influence of atmospheric experience on Theme Park Tourist's satisfaction and loyalty in Malaysia. *Int J Innov Creat Change*,2020:6(9):20–39.
2. Aliaga M, Gunderson B. *Interactive statistics*,2002.
3. Al-Thobhani NG, Al-Maweri N. Building a secure internet banking environment for the bank. *EasyChair*, 2021. Report No.: 4975.
4. Agyei J, Sun S, Penney EK, Abrokwah E, Boadi EK, Fiifi DD. Internet banking services user adoption in Ghana: An empirical study. *J Afr Bus*,2021:23(3):599–616. doi:10.1080/15228916.2021.1904756.
5. Akuffo-Twum E. The effect of internet banking on the Ghanaian banking industry – A case of Cal Bank, Unibank and Prudential Bank. [dissertation]. Kumasi: Kwame Nkrumah University of Science and Technology, 2011.
6. Banerjee A, Chaudhury S, Singh DK, Banerjee I, Mahato AK, Haldar S. Statistics without tears: Inputs for sample size calculations. *Indian J Psychiatry*,2007:49(2):150–2.
7. Creswell JW. *Research design: Qualitative, quantitative, and mixed methods approaches*. 3rd ed. Thousand Oaks: SAGE Publications, 2009.
8. Culiberg B, Rojšek I. Identifying service quality dimensions as antecedents to customer satisfaction in retail banking. *Econ Bus Rev*,2010:12(3):151–66. doi:10.15458/2335-4216.1245.
9. De Leon MV, Atienza RP, Susilo D. Influence of self-service technology (SST) service quality dimensions as a second-order factor on perceived value and customer satisfaction in a mobile banking application. *Cogent Bus Manag*,2020:7(1):1794241. doi:10.1080/23311975.2020.1794241.
10. DeYoung R. The financial performance of pure play internet banks. *Econ Perspect*,2001:25(1):60–73.
11. Dzomira S. Electronic fraud (cyber fraud) risk in the banking industry, Zimbabwe. *Risk Gov Control*,2014:4(2):16–26. doi:10.22495/rgcv4i2art2.
12. Eren BA. The role of internet banking in the presentation and marketing of financial services and products in a digital environment. In: *Digital innovations for customer engagement, management, and organizational improvement*. Hershey: IGI Global, 2020, 162–83.
13. Farris P, Bendle N, Pfeifer PE, Reibstein D. *Marketing metrics: The manager's guide to measuring marketing performance*. Upper Saddle River: FT Press, 2015.
14. Flavián C, Guinalú M, Torres E. The influence of corporate image on consumer trust: A comparative analysis in traditional versus internet banking. *Internet Res*,2005:15(4):447–70. doi:10.1108/10662240510615191.
15. Gan C, Clemes M, Limsombunchai V, Weng A. A logit analysis of electronic banking in New Zealand. *Int J Bank Mark*,2006:24(6):360–83. doi:10.1108/02652320610701717.
16. Ismail LB, Alawamleh M. The impact of online banking on customer satisfaction in Jordan. *J Organ Stud Innov*,2017:4(2):1–13.
17. Kelaart-Courtney GP. A model of consumer eService adoption within Dubai. [dissertation]. Perth: Curtin University, 2010.
18. Lester B. Changing methods in the marketing of industrial equipment. *J Mark*,1936:1(1):46–52.
19. Marfo-Yiadom E, Ansong A. Customers' perception of innovative banking products in Cape Coast Metropolis, Ghana.
20. Mattila M, Karjaluo H, Pentto T. Internet banking adoption factors in Finland. *J Internet Bank Commer*,2001:6(1):261–72.
21. Murdifin I, Nasir M, Ashoer M, Syahnur MH. Determination of internet banking customer satisfaction -Study at SOE Bank in Indonesia. *Jurnal Minds: Manajemen Ide dan Inspirasi*,2021:8(1):127–40.
22. O'Connor J, Galvin E. *Marketing in the digital age*. Harlow: Financial Times/Prentice Hall, 2001.
23. Ofori KS, Boateng H, Okoe AF, Gvozdanovic I. Examining customers' continuance intentions towards internet banking usage. *Marketing Intelligence & Planning*,2017:35(6):756–73.
24. Ofosu-Boateng I, Acquaye P. Effects of service quality and customer satisfaction on customers' loyalty in the hospitality industry of Ghana. *European Journal of Business and Management Research*, 2020, 5(5). doi:10.24018/ejbmr.2020.5.5.548.
25. Ofosu-Boateng I, Agyei SD. Effect of customer satisfaction and marketing communication mix on customers' loyalty in the Ghanaian banking industry. *European Journal of Management and Marketing Studies*,2020:5(4). doi:10.46827/ejmms.v5i4.864.
26. Oparah PC, Amah AU, Ifeanyichukwu CD, Aghara V, Ndubisi E. Service quality: An empirical study of expectations versus perception of National Health Insurance Scheme enrollees in federal universities in South East, Nigeria. *International Journal of Academic*

- Research in Economics and Management Sciences,2018:7(3):149–65.
27. Parasuraman A, Zeithaml VA, Berry LL. A conceptual model of service quality and its implications for future research. *Journal of Marketing*,1985:49(4):41–50.
  28. Pikkarainen T, Pikkarainen K, Karjaluoto H, Pahnla S. Consumer acceptance of online banking: An extension of the technology acceptance model. *Internet Research*,2004:14(3):224–35.
  29. Polychronidou P, Ioannidou E, Kipouros A, Tsourgiannis L, Simet GF. Corporate social responsibility in Greek banking sector – An empirical research. *Procedia Economics and Finance*,2014:9:193–9. doi:10.1016/S2212-5671(14)00020-3.
  30. Rahi S, Ghani MA, Ngah AH. Factors propelling the adoption of internet banking: The role of e-customer service, website design, brand image and customer satisfaction. *International Journal of Business Information Systems*,2020:33(4):549–69.
  31. Raza SA, Jawaid ST, Hassan A. Internet banking and customer satisfaction in Pakistan. *Qualitative Research in Financial Markets*,2015:7(3):263–79.
  32. CLEAR *International Journal of Research in Commerce & Management*, 2015, 6(8).
  33. Shanmugam M, Wang YY, Bugshan H, Hajli N. Understanding customer perceptions of internet banking: The case of the UK. *Journal of Enterprise Information Management*,2015:28(5):622–36.
  34. Shrimali A. A study of use and impact of internet banking on customer satisfaction level (with special reference to Udaipur district). *Clear International Journal of Research in Commerce & Management*,2015:6(8):1–6.
  35. Srivastav G, Mittal A. Impact of internet banking on customer satisfaction in private and public sector banks. *Indian Journal of Marketing*,2016:46(2):36–49.
  36. Sureshchandar GS, Rajendran C, Anantharaman RN. The relationship between service quality and customer satisfaction – A factor specific approach. *Journal of Services Marketing*,2002:16(4):363–79.
  37. Syahril S, Sihotang M, Hadinegoro R, Sulastri E, Rochmad I, Cahyono Y, *et al.* Hospitals customer e-loyalty: How the role of e-service quality, e-recovery service quality and e-satisfaction? *UJoST - Universal Journal of Science and Technology*,2022:1(1):23–7.
  38. Usman AK, Shah MH. Critical success factors for preventing e-banking fraud. *Journal of Internet Banking and Commerce*,2013:18(2):1–15.
  39. Worku G, Tilahun A, Tafa MA. The impact of electronic banking on customers' satisfaction in Ethiopian banking industry (The case of customers of Dashen and Wogagen banks in Gondar city). *Journal of Business & Financial Affairs*,2016:5(2):2–18.