Journal of Finance and Accounting

Contribution of Electronic Banking on the Financial Performance of Banking Institutions in Rwanda; A Case Study of Bank of Kigali Plc

HABIMANA Lynca & DR. RUSIBANA Claude

ISSN: 2616-4965

Stratford Peer Reviewed Journals and Book Publishing
Journal of Finance and Accounting
Volume 8||Issue 5 ||Page 20-39||April|2024|
Email: info@stratfordjournals.org ISSN: 2616-4965

Contribution of Electronic Banking on the Financial Performance of Banking Institutions in Rwanda; A Case Study of Bank of Kigali Plc

[1*]HABIMANA Lynca & [2]DR. RUSIBANA Claude

[1]Master of Business Administration in Finance and Accounting, University of Kigali, Rwanda
[2]Lecturer, University of Kigali, Rwanda

Email of the corresponding author: thurame100@gmail.com

How to cite this article: **HABIMANA, L., & RUSIBANA, C. (2024). Contribution of Electronic Banking on the Financial Performance of Banking Institutions in Rwanda; A Case Study of Bank of Kigali Plc.** ***Journal of Finance and Accounting, 8(5), 20-39.*** **https://doi.org/10.53819/81018102t5317**

Abstract

This research investigated the impact of electronic banking on the financial performance of banking institutions in Rwanda, focusing on the Bank of Kigali Plc. The study aimed to achieve the following objectives: to examine the impact of mobile banking on the financial performance of the Bank of Kigali; to determine the influence of online banking on the financial performance of the Bank of Kigali; to analyze the effect of automated teller machines (ATMs) on the financial performance of the Bank of Kigali; and to assess the impact of debit card transactions on the financial performance of the Bank of Kigali. This study was designed as a case study of the Bank of Kigali Plc, employing the survey method. A case study is described as an analysis that provides a detailed examination of electronic banking's impact on the financial performance of banking institutions. Through in-depth exploration of this single case, the researcher gained insights into the subject matter. Qualitative analysis involved meticulous observation of the situation, requiring all respondents from the Bank of Kigali Plc's population to answer the research questionnaires. The research used questionnaires to collect data. The population was comprised of respondents of Bank of Kigali Plc in different departments targeting 159 respondents. The sample size was 159 respondents. The findings indicated that there is high positive correlation between electronic banking and financial performance at Bank of Kigali Plc r= 0.798*, p-value=0.000<0.05) and was found to be significant at 5% significance level suggesting the existence of high positive relationship between electronic banking and financial performance at Bank of Kigali Plc, change attitudes towards changes and technology because these inevitable are inevitable phenomena. Learn from their peers about the use of e-banking. Follow e-banking terms and conditions, especially security measures, to address cybercrimes in online financial transactions. Ask for information from their financial service providers when encountering challenges related to e-banking. The study recommends that customers of the Bank of Kigali should adapt their attitudes and behaviors towards the inevitabilities of change and technological advancements in the electronic banking system. Customers would benefit from learning about e-banking from their peers and strictly adhering to the terms and conditions related to security measures to safeguard against cybercrimes in online financial transactions. The staff should also encourage customers to use electronic banking by highlighting its cost-effectiveness and convenience, aiming to increase the adoption of e-banking services among the bank's clientele.

Keywords: *Electronic banking, financial performance, banking institutions, Bank of Kigali Plc*

1.0 Introduction

The electronic banking technology is considered a new revolution in technology in banking services, offering secure transactions for users through electronic means. Banks, especially large and mutual ones, have gradually increased their number of electronic banking services available to customers over the past decades (Momeni, 2018). Advances in electronic banking technology have created new ways of handling banking transactions, particularly via the online banking channel. The banking industry worldwide is characterized by increasing competition and turbulence, with trends towards internationalization, mergers, acquisitions, and consolidation (Muhammad, Akin & Abdul, 2017). In European countries like Germany, the Netherlands, and Switzerland, commercial banks are under pressure from globalization and competition from non-banking entities, necessitating innovative service improvements. The technological factors of services seem to be the yardstick that customers in developing economies use to distinguish between good and bad services, while the human factor the employees seems to be less important in determining the level of service quality for banks. Banks' ability to offer a variety of services helps them to improve their level of customer service.

Banking is no longer just thought of as a business that deals with money transfers; according to Padwal (2018), it is also thought to be a business that deals with the dissemination of information about financial transfers. The environment of technology is changing as electronic banking becomes more widespread and customer satisfaction levels rise. In light of the recent financial crisis and global economic recession, leaders of banking institutions are under additional pressure not only to maintain their customer satisfaction while sustaining lower costs, but also to maintain market leadership. To lower costs and maintain market leadership, bank leaders have capitalized on superior service quality and information technology infrastructures with high acceptance of customers at least 75% usage of electronic banking technology and good wills of them in order to fight against global financial crisis that bring banks profitability (Muhammad, Akin & Abdul, 2017).

Currently, every third of European uses electronic banking technologies and there are signs of a slowdown in non-adoption. The highest growth rates can be seen in Southern and Eastern Europe indicating a catch-up process. More than 75% of Europeans may use online banking (Deutsche Bank Research, 2019). Like county of Holland, there is evidence that electronic revolution has commenced especially in developed countries, widespread electronic banking technology is still in its growing stage which has 65% of customer acceptance, which makes it hard for banks and other interested parties to design interventions that would enhance the diffusion of electronic banking technology. There is limited understanding of the advantages of using electronic banking technology, the factors influencing the European consumers to non-adoption of electronic banking technology and it is better to educate the role played by electronic banking technology in other developed countries (Ahmad, 2018).

The rapid development of electronic banking technologies during the 1990s has enabled companies to introduce an increasing number of high-tech services. It is more constructive to consider electronic banking technology as a means to extend beyond non-adoption, offering completely new services that enhance existing products by substituting or complementing personal interactions with service staff through technological solutions. Given these developments, it is clear that service researchers need to focus more on the evolution of technology-based services (Parasuraman, 2020). Internet-based services are regarded as superior to traditional channels due to their convenience, interactivity, relatively low cost, and

high degree of customization/personalization, among other benefits. However, there is limited understanding of the factors that influence customer non-adoption of internet banking services (Khalifa and Liu, 2019).

The provision of electronic banking services poses numerous challenges for banks, including reduced transaction costs, 24-hour trading, expanded business territory, and increased efficiency in daily banking processes. Currently, banks operate in a competitive environment and must offer a wide array of products that incorporate the latest technology to succeed. Many banks and financial institutions are actively developing new electronic banking products for their customers worldwide. As Kelly (2019) discussed, technology's role in service organizations has primarily been to reduce costs and eliminate uncertainties. In the service sector, technology has been utilized to standardize services by minimizing the interaction between employees and customers.

China, electronic banking technology has triggered massive change in the commercial banking of China since where 85% of customers chosen to use electronic banking, it was first introduced as "home banking" services in 1981. It covers various initiatives such as Internet banking, Internet payment system, phone banking, and mobile banking, to name a few. It enables customers to perform banking transactions without visiting a brick and- mortar banking institution in that time banks gain more interest due to the charges from that transaction. Capitalizing on e-Commerce's ability to offer productivity gains, transaction cost reductions, improved customer services and flexibility in fulfilling customers' changing needs and lifestyles, e-banking has enabled banking institutions to compete more effectively in this global environment, extending their products and services beyond the restriction of time and space. The developed countries have experienced widespread e-banking technology use and enjoyed its many benefits. On the other hand, the developing countries have just started to embrace the concept of e-banking in recent years. It is believed that in the long run, developing countries could benefit more from e-banking than developed countries since they could leap frog their technology development by learning from the experiences of the developed nations (Costanzo, 2019).

Nigeria electronic banking technology was adopted electronic banking technology where 45% of customers accepted e-banking with bank performance. However they style have a larger number of citizens who are still using traditional methods. Electronic fraud is now very rampant in Nigeria as there are now many fraudsters who take advantage of the electronic banking system to defraud fellow Nigerians that is the key factor which affect negatively adoption of electronic banking technology. There have been many stories of people going to another person's ATM to withdraw. This is one of the disadvantages of electronic banking which hamper adoption of it. People also perform fake transactions with others using the Nigerian electronic banking system (Aliyu, & Tasmin, 2019). High insecurity for banks, hackers in Nigeria now hack banks using certain methods of electronic technology. This has enabled them to hack into database of some banks causing loss of funds. Manual banking has less level of insecurity as the person has to be manually verified by the bank before performing the transactions. There have been stories of banks losing funds to hackers hacking into their database. This is one disadvantage of the electronic banking system since it has now made it easier for fraudsters and finally brings mind set of non-adaption to the citizens (Aliyu, & Tasmin, 2019).

Kenya has recognized the need for the banking industry to evolve with the global changes in technology, both procedurally and technologically. This evolution includes transitioning from

traditional to electronic banking channels, with 40% of customers currently using e-banking. Despite the widespread acceptance of electronic banking in developed countries, the limited adoption in developing countries like Kenya presents a significant area for research. Changes in the environment pressure organizations to adapt to ensure their survival (Ansoff and McDonnell, 2020). Technology, as a component of the environment, has enabled electronic business, which relies heavily on a stable and secure payment system. The Kenyan banking industry has seized the opportunities offered by electronic business, with electronic banking complementing and manifesting electronic business because it requires an easily processed payment system. As the internet becomes increasingly important for businesses, internet websites are expected to play a central role in most companies' strategic plans (Ansoff and McDonnell, 2020).

Rwandan banks have significantly embraced information and communication technologies in their services. They have invested heavily in implementing self-service and virtual banking services with the aim of improving customer service quality and changing the traditional mindset of citizens. For customers, the potential benefits include more choices, greater competition, better value for money, more information, improved tools for managing and comparing information, and faster service. E-banking offers banks opportunities for product development and delivery, lower entry barriers, substantial cost reductions, the ability to re-engineer various business processes, and greater opportunities for cross-border sales and internet marketing. However, the acceptance rate of electronic banking in Rwanda is 25%, with others still adhering to traditional methods of transactions and payments due to fear of loss and mistrust in technology (National Bank report, 2018).

Online banking in Rwanda eliminates the need for individuals to check account balances and make payments themselves. I have to go to the bank hall. As a result, a cashless society is gradually being formed where consumers no longer pay. Improves customer relationships by eliminating the need to pay cash for all purchases management system. for example: A bank customer can pay for an airline ticket, apply for her IPO, or make a variety of other payments by transferring money directly from her account. Goods and services by wire transfer to the merchant's account as most people do now since banks do not have mobile phones of their own; they are also introducing mobile banking to cater to customers who have mobile phones. Mobile banking allows individuals to check their account balances; it is easier to send money from your mobile phone. It was first popularized by Bank of Kigali. A customer can also top up a mobile phone via her SMS. E-banking made the bank it has become easier to trade around the world and is becoming more popular in Rwanda.

1.1 Statement of the Problem

In line with rendering quality, cashless and acceptable of good services, most Banks in Rwanda are developed toward investing large sum of money in Technology. Expectedly such Banks services have been improved like in Bank of Kigali, G.T. Bank, Equity Bank, I &M Bank and Kenya Commercial Bank (KCB), are in the forefront in the use of IT in rendering services to their customers, (National Bank report, 2018). While the rapid development of information technology has made some banking tasks more efficient and cheaper, technological investments are taking a larger share of bank's resources. Currently, technology is typically the largest line item in a bank's budget, excluding personnel costs, and the fastest growing line item. According to National bank of Rwanda (NBR Report, 2018) there is delay in payment of checks between banks; time wasted in banks as people line in queue waiting for service, errors as a result of manual work and fraud related cases will be common. As a result some clients

complain of the above issues. There is an increase in number of internet users, easy access to the internet; convenience; efficiency and profitability are all factors that encouraged banks to adopt internet banking in Jordan. There will a need to investigate whether electronic banking has had any impact on the financial performance of commercial banks, as there are some challenges hindering the implementation of electronic banking system in Bank of Kigali ranging from network reliability meaning that there is a network problem as a result of clients face challenges to use e-banking facility.

Some clients also have skills on how to operate the e-banking equipment and this pose threat on the performance of the bank. There are also security issues as the system can be accessed by hackers and this poses a threat to both customers and the bank inform of losses and confidentiality of clients information. This is mainly driven by mobile money access and usage (91%) as well as access and usage of banks electronic services (9%) (BNR report, 2022). It is observed that less use of mobile banking, online banking, automated teller machine and debit card purchases all elements above affect negatively financial performance of financial institutions as well as profitability. Other reasons which caused the failure of financial institutions for getting profit is that poor strategic plans of using e-banking. No available data on the contribution of electronic banking on financial performance of commercial banks in recent year including this one. That is why this study was intended to investigate the contribution of electronic banking on the financial performance of banking institutions in Rwanda using Bank of Kigali as case study.

1.2 Research objectives.

The objectives of the study were;

i. To examine the contribution of mobile banking on financial performance of Bank of Kigali
ii. To determine the contribution of online banking on financial performance of Bank of Kigali
iii. To analyze the contribution of automated teller machine on financial performance of Bank of Kigali
iv. To establish the contribution of debit card purchases on financial performance of Bank of Kigali.

1.3 Research hypotheses.

The hypotheses of the study were;

i. $H_0$1: Mobile banking doesn't have significant effect on financial performance of Bank of Kigali
ii. $H_0$2: Online banking has no significant impact on financial performance of Bank of Kigali

iii. $H_0$3: There is no significant effect of automated teller machine on financial performance of Bank of Kigali

iv. $H_0$4: There is no significant effect of debit card purchases on financial performance of Bank of Kigali.

2.0 Review of Literature

2.1 Conceptual Review

Mobile banking

Mobile banking involves the use of mobile phones for financial transactions. It supports person-to-person transfers where recipients have immediate access to funds. Mobile payments use card infrastructure to transmit payment instructions and secure text message service (SMS) messages to confirm receipt by the payee. Mobile banking is suitable for small-volume transactions where speed of execution is key. Services covered by this product include account enquiries, money transfers, phone top-ups, password changes and bill payments offered by some institutions (Sathye, 2019). Commercial banks, faced with globalization pressures and competition in non-banking functions, must find new ways to add value to their services. The question "What drives performance?" leading the way in understanding and striving for excellence. A great deal of research work has been done to solve this problem, from the strategic level to the operational details.

Customers in developing countries seem to use the "technical factor" of the service as a criterion for differentiating good service from bad, while the human factor of employees seems to play a smaller role in differentiating the quality of banking services. The variety of services offered by banks has developed an excellent service quality (Padwal, 2015). Banking is no longer seen as a business dealing only with monetary transactions and seems to be seen as a business dealing with information about financial transactions as well (Padwal, 2015). As electronic banking becomes more common, customer satisfaction is also changing the landscape of the technology environment. Information technology in the form of electronic banking plays a major role in providing better services at lower costs. A series of innovative services based on information technology, such as ATM, internet bank, smart card, credit card, mobile bank, phone bank and anytime, anywhere banking services, provide customers with various convenient services, continuously improve the quality of services and increase the possibility of customer satisfaction.

Improved customer satisfaction in turn increases mutual understanding, customer retention and bonds of trust between the customer and the bank. Banks that provide these services to customers have a higher reputation among customers. But at the same time, the technology-based offerings in public and private banks are different. Electronic banking is an improvement of the traditional banking system that reduces transaction processing costs, improves payment efficiency, improves financial services and improves the relationship between the bank and the customer. The relationship between electronic banking and service quality can be studied by the degree of satisfaction. Customer satisfaction depends on the level of customer expectations and the level of service quality provided by the organization. E-banking plays a key role in increasing customer satisfaction because e-banking narrows the gap between expected and perceived service quality. Therefore, to fill this gap, banks should find ways to make electronic services more accessible and allow customers to be sure of the accuracy of electronic banking

transactions. In general, it can be said that electronic banking has become an inevitable means of conducting banking transactions and increasing customer satisfaction (Sathye, 2019).

Online banking

Online banking includes banking transactions such as account inquiries and printing bank statements; using computers and other electronic tools to make money transfers for goods and services on the Internet (World Wide Web) without going to a bank branch. Internet banking has greatly facilitated e-commerce, mainly in terms of payments. Internet banking also uses electronic card infrastructure to fulfill payment instructions and make final payments for goods and services between merchants and customers using the Internet, currently the most common internet payments are the payment of consumer bills and the purchase of airline tickets through websites of the Merchant (Littler, 2016).

Automated Teller Machine

Automated Teller Machines or twenty hour Tellers are electronic terminals that let your bank almost any time to withdraw cash as you want, make deposits, or transfer funds between different accounts. You generally insert an ATM card and enter your PIN then you get a service. Financial institution and ATM owners charge a fee, particularly to consumers who do not have account with them or on transactions at remote locations. Generally, ATMs must tell you a charging fee and the amount at the terminal screen before you complete your transaction. Check the rules of your institution and ATMs you use to find out when or whether a fee is charged (Kleijnen, M. H. P., and M. Wetzels, 2014).

Direct Deposit, you can do deposits, such as paychecks and Social Security checks to your account on a regular basis. Pay by Phone let's call your financial institution with instructions to pay certain bills or to transfer funds between customers and shops, accounts, two people and pay bills electronically. Point of Sale Transfers let you pay for purchases with a debit card, which also may be your ATM card. The process is similarly using a credit card with some important exceptions. While the process is fast and easy a debit card purchase transfers money fairly quickly from your bank account to the store's account. So it's important that you have funds in your account to cover your purchase. This means you need to keep accurate records of the dates and amounts of your debit card purchases and ATM withdrawals in addition to any checks you write. Your liability for unauthorized use and your right for error resolution may differ with a debit card (Rogers, E. M.2016).

Personal Computer Banking as one of electronic banking technology lets you handle many banking transactions via your personal computer. For instance, you may use your computer to view your account balance. Request transfers between accounts, and pay bills electronically. Electronic check Conversion converts a paper check into an electronic payment at the point of sale or elsewhere such as when a company store cashier, the check is processed through an electronic system that compute your banking information and the amount of the check. Once the check is processed you're asked to sign a receipt authorizing the merchant to present the check to your bank electronically and deposit the funds into the merchant's account. You get a receipt of the electronic transaction for your records. When your check has been processed and returned to you by the merchant, it should be voided or marked by the merchant so that it can't be used again. In the mail in situation, you should still receive advance notice from a company that expects to process your check electronically (Sato & Hawkins, 2017).

Debit Card Purchases

Credit and debit cards are increasingly becoming the preferred way for consumers to pay for goods and services, making these electronic payment methods an integrated way for merchants large and small to do business. The increasing usage trend is expected to continue for some time. Credit and debit card transactions accounted for more than 50 percent of all non-cash transactions in 2016, up from 42 percent in 2003, according to the Federal Reserve's three-year survey. So it's no surprise that almost all types of electronic payments in stores have lost cash over time. According to a 2008 study by Hitachi Consulting and BAI, cash transactions accounted for 26 percent of customers' in-store purchases in 2010, up from 39 percent in 2009. During this period, credit card transactions fell from 22% per month to 19%, while debit card transactions continued to increase, with 14 transactions per month in 2010 accounting for 42% of all purchases, compared to 21% in 2009.

Financial Performance

Wheelen and Hunger (2014), define performance as the end result of activity. They assert that, which measures to select to assess the performance will depend on the organizational unit to be appraised and the objectives to be achieved. Certo (2017) stipulates that before managers can determine what must make the organization more effective and efficient; they must measure current organization performance. Organizational theory and strategic management offer much of the basis on which the performance construct can be measured. Organization theory provides three fundamental theoretical approaches to measuring organizational effectiveness. According to Mosley (2016), a standard is a unit of measurement that can serve as a reference point for evaluating results, standards are important for managers in order to set clear objectives where all company's efforts will be sintered. Normally, goals, objectives and performance cannot only be expressed in physical, monetary but also qualitative standards: Quantifiable standards: are standards that can be expressed in terms of numbers (unity, money and hours). These quantifiable standards include; physical standards; these include quantities of product, number of customers and clients or qualifying products and services. Money standards; these expressed in dollars and include labor costs, selling, price, material coast, sales revenues and gross profits. Non-quantifiable or qualitative standards: these are standards that play an important role. Quantifiable standards are no sufficient to measure performance, managers must also use non-quantifiable standards; including quality, personnel, promoting the "most proficient "person, having a cooperative attitude and also wearing appropriate dress on job, can be critical.

The term financial analysis is known as the analysis and interpretation of financial statements. It refers to establishing a meaningful relationship between items in two accounts. Income statement and statement of position. It determines the financial strength and weakness of the company (Wheelen and Hunger, 2014). Financial analysis is also the process of determining the financial position of a company by correctly determining the relationship between balance sheet items and profit and loss statements (Mosley, 2016).

In order to evaluate financial condition and performance of a firm, the financial analyst needs certain tools to be applied on various financial aspects. One of the widely used and powerful tools is ratio or index. Ratios express the numerical relationship between two or more things. This relationship can be expressed as percentage (25% of revenue), fraction (one-fourth of revenue), or proportion of numbers. According to Van Horne et al (2015), Ratios are used to describe important relationships that exist between numbers shown on a balance sheet, income

statement, budgetary control system, or any other part of an accounting organization. Ratio analysis plays an important role in determining a company's financial strengths and weaknesses compared to other companies in the same industry (Van Horne 2015).

A bank's financial strength rating (Bank Rating) is a comprehensive measure of a bank's inherent safety and soundness. The purpose of this study is to find out whether there is a correlation between the assessment of a bank's financial strength (bank rating) and its risk-return profile. Specifically, we are interested in investigating whether credit rating agencies assign higher bank ratings to banks with higher risk and return efficiencies. In addition, we are also interested in assessing whether rating agencies treat banks with the same performance in the same way from the perspective of rating consistency. The results hope to clarify the extent to which credit rating agencies consider the risk of financial distress when assessing bank ratings. These ratings indicate the likelihood that a bank will run into financial difficulties and seek help from its owners, industry groups or institutions (Estrella et al 2018).

Banks with strong internal security and solvency are usually cautious about taking risks. They typically receive higher expected returns for the risks they take and are therefore less likely to experience financial distress and recover from adverse externalities (DeYoung, Hughes, & Moon, 2015). Bank ratings, which are expected to reflect a bank's inherent safety and resilience also reflects the extent to which a bank manages its portfolio to achieve risk-return efficiency and avoid financial distress. Using a global banking database of 1,049 banks in the world's major economies from 2000 to 2004 and based on recent bank risk-return efficiency measures and risk-adjusted output margins, we find that banks with higher average efficiency scores tend to earn more profit. More favorable rating agencies typically encourage banks to trade expected returns for reduced risk, suggesting that bank ratings generally match risk-return profiles.

2.2 Theoretical Review

Technology Acceptance Theory

Davis, Bagozzi, and Warshaw (2019) propose the Technology Acceptance Theory (TAT) to explain the conceptual model that determines users' intentions or degree of acceptance towards information systems or new technology. TAT is grounded in perceived usefulness and ease of use. Perceived usefulness is the extent to which individuals believe that their job performance can be enhanced by adopting specific new technologies and information systems. Perceived ease of use refers to the degree to which a person believes that learning to operate or use a new technology or information system will be effortless (Gefen & Glaessner, 2013). The model emphasizes the positive impact of perceived ease of use on perceived usefulness. External factors such as the environment are also considered antecedents that influence perceived usefulness and ease of use. Thus, TAT is founded on two crucial perceptual elements: perceived usefulness and perceived ease of use, and it is extensively utilized in information technology research. Liu and Arnett (2016) examined key variables for developing successful websites based on TAT. Gefen and Glaessner (2013) integrated TAT and trust to propose a comprehensive model for explaining online consumer behavior. Pavlou (2015) introduced an e-commerce acceptance model for online consumers by differentiating and implementing experimental designs and surveys. Subsequent studies, such as the one by Horst, Kuttschreuter, and Guttering (2017), explore whether the Dutch government should offer electronic governance services to the public like other countries. This study integrated TAT factors, community experience, perceived risk, and beliefs, revealing that e-government principles hinge on people's complete trust in state organizations and high regard for information

technology. Through empirical research, scholars have established that TAT is not only applicable for studying the intentions or behaviors related to adopting new information technology but also effective in explaining the behavioral issues of online users (Liu and Arnett, 2016).

Theory of Planned Behaviour

Initial research focused on the Theory of Reasoned Action (TRA) as identified by Fishbein and Ajzen (1975). TRA is based on basic attitudinal variables and subjective norms. These two variables are believed to positively influence an individual's behavioral intentions, thereby affecting the individual's actual actions. Attitudes refer to positive or negative evaluations of an individual's feelings toward a specific behavior. Subjective norms involve an individual's perception of social pressure to perform or not perform a certain behavior, which is influenced by the judgment of significant others (e.g., parents, spouse, friends, teachers). Behavioral intentions indicate a person's readiness to perform a certain behavior and are considered direct antecedents of actual behavior. However, TRA assumes that behaviors are performed through voluntary control (Fishbein & Ajzen, 1975). Thus, behavior is largely influenced by personal will (Aladwani, 2018).

The Theory of Planned Behavior (TPB) was proposed as an extension of TRA, accounting for factors beyond individual control. TPB introduces perceived behavioral control, alongside attitude and subjective norms, as determinants of behavioral intentions, which in turn predict actual behavior. Perceived behavioral control refers to an individual's perception of the ease or difficulty of performing a certain behavior (Aradwani, 2018). The application of TPB in e-commerce has been explored in recent studies. Tan and Teo (2019) integrated TPB with the innovation diffusion theory to investigate factors influencing individuals' willingness to use the Internet, finding that attitude and perceived behavioral control positively affect intentions to use internet banking. Huang and Kauffman (2016) confirmed that TPB could explain individuals' behavioral intentions toward online tax filing.

Hsu and Robinson (2016) conducted a longitudinal study on users' continued behavior towards internet shopping, employing TPB factors (attitude, subjective norms, and perceived behavioral control) and integrating expectation confirmation theory to build research models. Their findings highlighted subjective norms, attitudes, and perceived behavioral control as significant factors influencing consumers' continued online shopping intentions. The concept of equity, popularized by accounting researchers (Jackson & Milliron, 2016), was also noted as a relevant factor not included in the original assumptions. Overall, empirical results from the literature demonstrate TPB's applicability in explaining the behavioral processes of individuals engaging with information technology.

Theory of Reasoned Action

The Theory of Reasoned Action (TRA), formulated by Fishbein and Ajzen (1975), extends beyond technology adoption to encompass a broader range of behaviors, incorporating attitudes, subjective norms, behavioral intentions, and actual behavior. TRA suggests that individuals' behaviors are influenced by their intentions, which are shaped by their attitudes and perceived social pressures. This theory underscores the indirect influence of other factors on behavior through their impact on attitudes and subjective norms, including system design, user characteristics, and task features, making TRA applicable for predicting behavior in various contexts.

Transaction Cost Innovation Theory

The Transaction Cost Innovation Theory, introduced by Nyhans (2006), posits that financial innovation, driven by the reduction of transaction costs, is a response to technological advancements. This theory highlights how financial innovation, facilitated by information technology and internet connectivity, can significantly lower transaction costs, thereby enhancing financial services and potentially increasing bank profitability through efficient coordination and information management.

2.3 Critical Review and Research Gaps

Jegede (2014) conducted a study titled impact of Card Services on Banking Performance in Nigeria. Findings show that card services on average enhance rather than benefit banking in Nigeria as the number of card service frauds is alarming. It concludes that banks should work to increase layers of security to mitigate the ploys of cyber-fraudsters, limit the amount customers can withdraw at one time and provide electronic alerts on customers' mobile phones for all transactions. His study did not analyze the relationship between card servicing and bank financial performance. Amir et al. (2013) conducted a study titled "Card Service Quality and its Impact on Customer Retention: The Case of a Bank of Pakistan". Their study found that the card service quality factor is useful for customer retention. They focused on the contribution of Card services to customer retention, which shows that they only trusted the customer and not the financial performance of the bank, and then they did not use profitability ratios and Pearson correlation coefficient to show how the bank profits from the use of card services. Charles (2014) conducted a study titled "Customer Satisfaction with Bank Card Services in Malawi. Therefore, although Charles used raw data to measure customer satisfaction with Card 24 services, he did not use profitability and correlation coefficients to analyze the contribution of card services to the bank's financial performance. The researchers therefore identified the gaps in these criticisms and overcame them through card services and financial performance research, a case study of Bank of Kigali (BK).

Commercial banks assaulted by the pressure of globalization and competition from nonbanking new ways to add value to the services. The question of what drives performance is at the top in understanding superior performance and hence striving for it. To solve this problem, we have done a lot of research, from the strategic level to the operational details. The operational strategies of leading retail banks completed the core benchmark of leading retail banking strategies (Vander Velde 2017). Based on input from all retail business executives of commercial banks, this study identifies the link between marketing, operations, and organizational excellence. This finding led to the development of a service management strategy embedded in the service quality performance of road operations capabilities (Foth and Jackson, 2015). In contrast, opportunity service quality performance tracking is a centralized view of the service profit chain described by (Hesketette All, 2014) based on an analysis of successful service organizations. However, in the case of Rwanda, despite the bank's attempts to introduce e-banking services, Rwanda still faces challenges that need to be addressed in order to promote effective and efficient banking services, these challenges are: Establishing an efficient remittance system Rwanda's development is : affected by Many factors hinder (Hesketette All, 2014).

Rwanda faces infrastructural deficiencies such as unstable power supply and communication connections in some areas, insufficient number of qualified administrators and necessary tools for end-user and client-side systems, high fees or costs for electronic payment terminals

(ATMs), so banking legislation should formulate and formulate standard rates for electronic payment services. Hence, it is believed that these factors hinder the operation of e-banking services in the country, thereby affecting the operation of the bank. It should also be noted that no significant academic research has been conducted in Rwanda, especially on the performance of commercial banks, and therefore, despite the factors mentioned above, the researchers wanted to investigate the impact of electronic banking on the performance of commercial banks in Rwanda to draw the following conclusion: Recommendations for improving e-banking services in the country (Hesketette All, 2014).

3.0 Research methodology

The research employed a statistical survey, playing a pivotal role in statistics and data analysis. This method, encompassing descriptive and correlational analysis, aims to describe, compare, and measure data to identify characteristics, frequencies, trends, and categories. It specifically focused on the contribution of electronic banking to the financial performance of banking institutions in Rwanda. The statistical survey was instrumental in gathering current information about the phenomena, describing what exists with a high level of efficiency, especially when collecting data from a vast pool of respondents. Large sample sizes facilitate the use of statistical techniques to ascertain validity, reliability, and statistical significance, showcasing the flexibility of surveys in collecting a broad range of information (Natasha, 2011).

Target Population and Sample Size

The population comprised all employees of the Bank of Kigali Headquarters, totaling 159 individuals. Julius (1990) defined a population as a group of individuals, organizations, objects, or events that a researcher aims to draw conclusions about. The study engaged all 159 employees through a questionnaire, making the sample size equal to the total population.

Data Collection Methods

Data collection involves the systematic acquisition of data using a specified scientific process, with the quality of research potentially compromised by poor data collection methods. The study utilized both primary and secondary data sources (Cooper & Schindler, 2014).

Data Analysis

The analysis employed descriptive statistics to handle the quantitative data collected in this study, utilizing correlations and regression analysis to explore the relationships and variations among responses. Quantitative data, as described by Quang and Hong (2009), are numerical observations that were analyzed and presented in tables and graphs, highlighting response variations and differences among groups. Descriptive statistics provided a summary of the data's basic features, including tendencies, presented in tabular form. This approach involved the use of percentages, frequencies, means, and standard deviations to describe the dataset. The Spearman (Pearson) correlation coefficient measures the degree to which two variables tend to increase together, without necessitating a linear relationship. The correlation coefficient (r) ranges from +1.0 to -1.0, indicating the strength of the relationship. Positive values suggest a direct relationship, negative values indicate an inverse relationship, and zero implies no relationship. The correlation analysis was conducted using the Statistical Package for Social Sciences (SPSS), which facilitated data processing, presentation of findings, and interpretation, with a focus on testing the hypothesis. The coefficient of determination (R^2) was utilized to understand how variations in one variable could be explained by changes in another. For instance, the timing of pregnancy is directly related to the timing of birth. R^2, or the square of

the correlation coefficient (r), provides the percentage of variance in the dependent variable explained by the independent variable(s), ranging from 0 to 1 (0% to 100%). This measure is akin to the correlation coefficient (R), indicating the strength of a linear relationship between two variables.

4.0 Results

The study results are presented in sections.

4.1 Descriptive Statistics on mobile banking for financial performance of Bank of Kigali

The summary of the descriptive statistics on mobile banking for financial performance of bank of Kigali is presented in Table 1

Table 1: Descriptive Statistics on mobile banking for financial performance of Bank of Kigali

Statements	N	Mean	Std. Deviation
Mobile banking has had a positive effect of increasing commission fee charged based income for financial performance of Bank of Kigali	159	4.23	.922
Mobile banking has influenced positively the increase of interest based income for financial performance of Bank of Kigali	159	4.20	.913
Mobile banking has expanded the income generating potential for financial performance of Bank of Kigali	159	4.23	.911

Source: Primary Data (2024)

The findings in table 1 indicated that for the first statement that stated that "Mobile banking has had a positive effect of increasing commission fee charged based income for financial performance of Bank of Kigali" the respondents agreed with a mean of 4.23 and standard deviation of .922 with the statement. This indicated that the respondents agreed with the statement as indicated by the mean and heterogeneity of answers as indicated by the standard deviation where the respondents had same opinions of the statement. The second statement evaluated was “Mobile banking has influenced positively the increase of interest based income for financial performance of Bank of Kigali" where the respondents agreed with a mean of 4.20 and standard deviation of .913. This indicated that the respondents agreed with the statement as indicated by the strong mean and heterogeneity of answers as indicated by the standard deviation where the respondents had different opinions of the statement. The third statement evaluated was “Mobile banking has expanded the income generating potential for financial performance of Bank of Kigali" where the respondents agreed with a mean of 4.23 and standard deviation of .911. This indicated that the respondents agreed with the statement as indicated by the strong mean and heterogeneity of answers as indicated by the standard deviation where the respondents had different opinions of the statement.

Table 1: Descriptive Statistics on online banking for financial performance of Bank of Kigali

Statements	N	Mean	Std. Deviation
Online banking increase more transaction of customers which increase profitability of bank according their charging for financial performance of Bank of Kigali	159	4.26	.873
Increasing the customers through good services which led to the profit of bank for financial performance of Bank of Kigali	159	4.23	.922
Easy to withdraw money and sending which is a profit to the bank for financial performance of Bank of Kigali	159	4.23	.922

Source: Primary Data (2024)

The findings in table 2 indicated that for the first statement that stated that " Online banking increase more transaction of customers which increase profitability of bank according their charging for financial performance of Bank of Kigali " the respondents agreed with a mean of 4.26 and standard deviation of .873 with the statement. This indicated that the respondents agreed with the statement as indicated by the mean and heterogeneity of answers as indicated by the standard deviation where the respondents had same opinions of the statement. The second statement evaluated was “Increasing the customers through good services which led to the profit of bank for financial performance of Bank of Kigali " where the respondents agreed with a mean of 4.23 and standard deviation of .922. This indicated that the respondents agreed with the statement as indicated by the strong mean and heterogeneity of answers as indicated by the standard deviation where the respondents had different opinions of the statement. The third statement evaluated was “Easy to withdraw money and sending which is a profit to the bank for financial performance of Bank of Kigali" where the respondents agreed with a mean of 4.23 and standard deviation of .922. This indicated that the respondents agreed with the statement as indicated by the strong mean and heterogeneity of answers as indicated by the standard deviation where the respondents had different opinions of the statement.

Table 3: Descriptive Statistics on debit card purchases for financial performance of Bank of Kigali

Statements	N	Mean	Std. Deviation
Debit card purchases has a positive relationship with financial performance of Bank of Kigali	159	3.92	1.191
Debit card purchases increases the frequency of money withdraw and hence financial performance	159	3.81	1.094

Source: ***Primary Data (2024)***

The findings in table 3 indicated that for the first statement that stated that " Debit card purchases has a positive relationship with financial performance of Bank of Kigali " the respondents agreed with a mean of 3.92 and standard deviation of 1.191with the statement. This indicated that the respondents agreed with the statement as indicated by the mean and heterogeneity of answers as indicated by the standard deviation where the respondents had same opinions of the statement. The second statement evaluated was "Debit card purchases increases the frequency of money withdraw and hence financial performance" where the respondents agreed with a mean of 3.81 and standard deviation of 1.094. This indicated that the respondents agreed with the statement as indicated by the strong mean and heterogeneity of answers as indicated by the standard deviation where the respondents had different opinions of the statement.

Table 4: Descriptive Statistics on **financial performance of Bank of Kigali**

	N	Mean	Std. Deviation
Return On Asset	159	3.80	1.114
Increase of Return On Asset	159	3.81	1.094
Increase of Return On Investment	159	3.77	1.103
Increase of Return On Equity	159	3.77	1.103
Increase of Interest Margin Ratios	159	4.22	.913

Source: ***Primary Data (2024)***

From the findings in table 4 shows there is return On Asset at Bank of Kigali Plc with mean of 3.80 and 1.114 Std. Deviation means that tend to strong and heterogeneous, the statement of Increase of Return On Asset with means 3.81 and 1.094 standard deviation, Increase of Return On Investment with mean of 3.77 and 1.103 standard deviation, Increase of Return On Equity with mean of 3.77 and 1.103 standard deviation while Increase of Interest Margin Ratios mean of 4.22 and .913 standard deviation.

Table 5. Descriptive Statistics on automated teller machine for financial performance of Bank of Kigali

Statements	**N**	**Mean**	**Std. Deviation**
Market share increases can allow a Bank of Kigali to achieve greater scale in its operations and improve profitability for financial performance of Bank of Kigali	159	4.23	.922
ATMs have had a positive effect of increasing commission fee based income for financial performance of Bank of Kigali	159	4.45	.793
ATMs have expanded the income generating potential for financial performance of Bank of Kigali	159	5.38	6.947

Source: Primary Data, 2024

The findings in table 5 indicated that for the first statement that stated that "Market share increases can allow a Bank of Kigali to achieve greater scale in its operations and improve profitability for financial performance of Bank of Kigali" the respondents agreed with a mean of 4.23 and standard deviation of .922 with the statement. This indicated that the respondents agreed with the statement as indicated by the mean and heterogeneity of answers as indicated by the standard deviation where the respondents had same opinions of the statement. The second statement evaluated was "ATMs have had a positive effect of increasing commission fee based income for financial performance of Bank of Kigali" where the respondents agreed with a mean of 4.45 and standard deviation of .793. This indicated that the respondents agreed with the statement as indicated by the strong mean and heterogeneity of answers as indicated by the standard deviation where the respondents had different opinions of the statement. The third statement evaluated was "ATMs have expanded the income generating potential for financial performance of Bank of Kigali" where the respondents agreed with a mean of 5.38 and standard deviation of 6.947. This indicated that the respondents agreed with the statement as indicated by the strong mean and heterogeneity of answers as indicated by the standard deviation where the respondents had different opinions of the statement.

5.0 Conclusion

The study thought to establish the impact of electronic baking on the financial performance of commercial banks in Rwanda in Bank of Kigali. Findings showed that 100% of the respondents confirmed Bank of Kigali uses different electronic banking tools such as electronic cards, internet banking, mobile banking and telephone banking in cash depositing, cash withdrawing, checking account balance, making payments and other financial services therein. Findings also showed that such electronic banking system affect the performance of Bank of Kigali in financial services delivery, satisfying customers to satisfy customers, providing outreach financial services and has therefore reduced transactional costs and finally contribute to market penetration. The study also revealed different challenges that limit the adoption of electronic banking system such as customers' low understanding about the use of electronic banking tools especially due to low level of education, lack of electronic banking experts to assist the he customers while they encounter challenges in the use of this technology and unreliable network and electricity. Results also showed that customers are not familiar with this technology and many are sometimes reluctant to use electronic banking due to uncertainty about this baking technology. However, solutions were suggested such as reinforcing education as electronic banking is currently used by educated customers only. Other solutions such as decentralization of ICT infrastructure in all areas where populations live and provision of reliable network and regular electricity were also mentioned. Therefore depending on the findings, recommendations and suggestions were formulated accordingly in the section below.

6.0 Recommendations

The study recommends that customers of the Bank of Kigali should adapt their attitudes and behaviors towards the inevitabilities of change and technological advancements in the electronic banking system. Customers would benefit from learning about e-banking from their peers and strictly adhering to the terms and conditions related to security measures to safeguard against cybercrimes in online financial transactions. It is also advised that customers proactively seek information and assistance from their financial service providers whenever they face challenges related to e-banking. For the staff of the Bank of Kigali, the recommendations are to assist customers with the e-banking application process actively and ensure that e-banking facilities such as ATM and Visa cards are readily available. The staff

should also encourage customers to use electronic banking by highlighting its cost-effectiveness and convenience, aiming to increase the adoption of e-banking services among the bank's clientele. By implementing these recommendations, the Bank of Kigali can enhance the digital banking experience for its customers, making banking more efficient and secure.

Acknowledgments

I wish to acknowledge **Dr. RUSIBANA Claude** for his contribution to this work from the beginning up to its completion. I also wish to extend my acknowledgement to the Bank of Kigali Plc authorities for their support and collaboration during the data collection.

REFERENCES

Agboola (2016). *Information Technology in Business Industry*, Operational Application, Problems and future Challenges, Boston: Houghton Mifflin

Ahmad, (2018). *Guidelines on Electronic Banking in Rwanda. Kigali* Central Bank of Rwanda.

Aladwani, A. M (2018). *An Introduction to e-commerce,* New York: Ronald Press

Aliyu, & Tasmin, (2019). *E-commerce fundamental and applications"New York*: John Wiley and sons Ltd.

Alsulamy (2015). *Financial management in commercial banks,* New York: Macmillan Publishing Co.

Ameer et al. (2013). *Online banking 2006: Surfing to the bank*, New Jersey: Prentice-Hall

Amir et al. (2013). *Boosting Payment Solution with visa Cards.* New York: Basic Books

Ansoff and Mc Donnell, (2020). *Six Puzzles in Electronic Money and Banking, IMF Working Paper*, IMF Institute, (February, 2005).

Bauer, Hammerschmidt, and Falk (2015). *Frontier of Electronic Commerce*, New York: Meridian Books

Berger et al. (2003). *Electronic Cash and the End of National Markets,* New Delhi: Sterling Publishers

Bailey, (2010). *Business Research Methods,* Colombia : The New Age International

Certo (2017). Importance of e-payment on Clearing and Forwarding. Chicago: University of Chicago Press

Charles (2014). *Emergence of Information Technology in the Kenyan Banking Sector:* An Empirical Study, Khalsa College, G.N.D. University Amritsar.

Charles (2014). E-payment and its Challenges. New York: John Wiley & Sons

Cheruiyot (2019). *Raising Business Finance from Banks.* Enugu: Fourth Dimension Publishing Company Limited.

Costanzo, 2019). *Financial management in commercial banks,* New York: Macmillan Publishing Co.

Creswell, (2004). *Research and Report Writing for Business and Economics,* New York: Random House,

Cooper, (2006). *Research Methodology* London Pearson Education Limited.

Dapo (2018). Element of Banking, Enugu, Nigeria: Rock Communication Publication.

Estrella et al (2018). Adoption of Internet banking by Australian consumers: an empirical investigation. *International Journal of Bank Marketing, 17*(7), 324-334

Fishbein and Ajzen, (2005). *Challenges for Monetary Policy: New and Old*, Bank of England Quarterly Bulletin, *2* (7), 12-15

Foster et al; (2017). Electronic payment systems and Tele banking Services in Nigeria. *Journal of Internet Banking and commerce, 11(3), 1-10*

Foth and Jackson, (2015). online banking ;A field study of drivers, development challenges And expectations. International Journal of information Management .Volume 21 Issue 3,June, 2001 pages 213-225. https://doi.org/10.1016/S0268-4012(01)00011-1

Fuller & Perry,(2014). Managing legal liability of the Net: a ten step guide for IT managers." *Information Management & Computer Security* 8(2): 98-100. https://doi.org/10.1108/09685220010321335

Galton, (1911). *Statistical Methods for Research Workers, (*13th ed.). New York: Hafner Publishing Co

Gefen J. and T. Glaessner, (2013). *The theory of planned behavior: Some unresolved issues." Organizational Behavior Human Decision Processes 50(2): 179-211.n https://doi.org/10.1016/0749-5978(91)90020-T*

Giglio, (2018). An investigation into the acceptance of online banking in Saudi Arabia. *Technovation, 29*(2), 130-141. https://doi.org/10.1016/j.technovation.2008.07.004

Glenn Lowry, 2002). *Research design: Qualitative, quantitative, and mixed methods approaches.* New York: John Wiley & Sons

Hernando and Nieto (2016). The adoption of electronic banking in Tunisia: an exploratory study. *Journal of Internet Banking and Commerce, 14*(3), 1-11.

Hesketette All, (2014). *Institutional Theory of Innovation: International Journal of Information Technology. vol.40, pp 41-95*

Horst, Kuttschreuter and Guttering (2017). *Developing trust in internet commerce. Proceedings ofthe centre for Advances Studies Conference on Collaborative Research, October 6-9,* (pp. 1-15). Toronto, Ontario

Hsu J. and Robinson. (2016). *Web Banks Beat Branches on Ratios but there's no competition*

Jayawardhena (2018). *Understanding internet banking adoption and use behavior: a Hong Kong perspective. Journal of Global Information Management (JGIM), 12(3), 21- 43. https://doi.org/10.4018/jgim.2004070102*

Jegede (2014). *The diffusion of internet banking amongSingapore consumers". The International Journal of Banking Marketing.(Online).Available at http://www.proquest.umi.com/pqdweb?index.Accessed on 2004-04-25.*

Julius (1990). *Business Research Methods.* Columbus O.: Grid, Inc.

Kariuki (2017). *Technology and the customer interface: what customers want in the physical and virtual store? Journal of the Academy and Marketing Science, Vol.30 (4), 411- 32.* https://doi.org/10.1177/009207002236914

Karjaluoto et al., (2013). *Adoption of internet banking: an empirical study in Hong Kong. Decision Support Systems, 42(3), 1558-1572.* https://doi.org/10.1016/j.dss.2006.01.002

Kelly (2019). *What Determines Turkish customers' acceptance of internet banking?" International Journal of Bank Marketing 26(5): 353-370.*

Khalifa and Liu (2019). *Adoption and Diffusion of Internet Banking. A chapter in Ravi, V (ed) Advances Banking Technology and Management: Impact of ICT and CRM. IGI Global.*

Kleijnen, M. H. P., and M. Wetzels, 2014). *Factors underlying attitude formation towards online banking in Finland*. The International Journal of Bank Marketing. Vol.20. pp.261-273

Littler, (2016). *Branch employees' perceptions towards implications of e-banking in Greece. International Journal of Retail & Distribution Management, 32(6), 302-311.*

Liu and Arnett, (2016). *Provision of Electronic Banking in UK and The Republic of Ireland": International Journal of Bank Marketing, 17,2,72,82.* https://doi.org/10.1108/02652329910258934

Mabrūks and Mamogli, Mamoghli, (2019). *The Performance of Internet-based Business Models: Evidence from the Banking Industry", Journal of Business, Vol. 78 No. 3, pp. 893-94.*

Mahmoud (2016). *Factors Impacting the Adoption of the Internet among SMEs." Small Business Economics 23: 311-322.*

Mattila et al., (2017). *Electronic for Panacea. Potential and Pitfalls*.

Mitroff (2013). *Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology", MIS Quarterly, Vol. 13, pp. 319-339, 2009.*

Monteiro (2006). *Risk management principles for electronic banking, Switzerland: Bank of International Settlements. Retrieved from http://www.bis.org/publ/bcbs98.pdf.*

Momeni, (2018). *Perceived usefulness, perceived ease of use, and user Acceptance of information technology" MIS Quarterly 13(3): 319-340.*

Mosley (2016). *Provision of Electronic Banking in the UK and the republic of Ireland. International Journal of Bank Marketing Vol.13 (3), 319-340.*

Muhammad, Akin & Abdul, (2017). *Towards modeling the effects of national culture on IT implementation and acceptance. Journal of Information Technology, 16(3), 145-158.*

National Bank report, (2018). *Understanding internet banking adoption and use behavior: Journal of Global Information Management (JGIM), 12(3), 21-43.*

Nyangosi, (2016). Toward a model for the acceptance of internet banking in developing countries. *Information Technology for Development, 11*(4), 381-398.

Nyhans (2006). *Trust and ATM in online shopping: An integrated model. MIS quarterly, 51-90.*

Ogbuji (2012). *The Market for Electronic Cash Cards*, Journal of Money, Credit and Banking, Vol. 34, pp. 299-314. https://doi.org/10.1353/mcb.2002.0047

Osage (2017). *Adoption of Internet banking by Australian consumers*: an empirical investigation. International Journal of Bank Marketing, 17(7), 324-334. https://doi.org/10.1108/02652329910305689

Padwal (2018). *Customer Choice Between Electronic and Traditional Markets: an Economic Analysis", in Proceedings of 35th Hawaii International Conference on System Sciences (HICSS 2012), IEEE Society Press, 2012.*

Padwal, (2015). *Challenges for Monetary Policy: New and Old*, Bank of England Quarterly Bulletin, November, 2003.

Santos, (2003). *Electronic Money: A Challenge to the Sovereign State?* Journal of International Affairs, Vol. 51.

Sathye, (2019). *Changes in the banking sector: The case of Internet banking n the UK. Internet Research: Electronic Networking Applications and Policy, 10(1), 19- 30. https://doi.org/10.1108/10662240010312048*

Sullivan and Richards (2018). *The adoption of electronic banking technologies by US consumers. International Journal of Bank Marketing, 22(4), 238-259. https://doi.org/10.1108/02652320410542536*

Sushant et al. (2016). *Technology adoption and usage as a social- psychological-economic phenomenon: A study of online investing", Decision Support Systems, Vol. 39:505-524, 2011.*

Steven, A. (2002). *Statistics: an introductory analysis,* (2nd ed.). New York City :Harper and Row Publishing.

Tan and Teo (2019). *Consumer Adoption of Electronic Banking Technologies", Consumer Interests Annual, Vol. 46: 180-184, 2000.*

Thanulingmom, (2007). *Methods of Social Research.* New York: Ronald Press. Delhi: Vikas Publishing House Pvt. Ltd.

Teresa, (1992). *The Research Report: A Guide for the Beginner*, New York: Ronald Press.

Van Horne (2015). *Satisfaction with Internet–Based Services: The Role of Expectations and Desires, International Journal of Electronic Commerce, Vol. 7(2), 31-49. https://doi.org/10.1080/10864415.2002.11044267*

Wheelen and Hunger (2014). The influence of trust on Internet banking acceptance. *Journal of Internet Banking and Commerce, 12*(2), 1-10.

Yegon (2018). *Electronic Cash and the End of National Markets" Foreign Policy, No. 107 (Summer), pp. 65-67*