Digital financial services and quality service delivery in Rwandan commercial bank: Case study Bank of Kigali

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Abstract— *Digital financial services have a profound contribution to quality service delivery in Rwandan commercial banks. Using the survey research design, the study examines commercial bank user's perceptions of digital financial services, and quality service delivery in aspects like the Automated Teller Machine, telephone banking, internet banking, retail service and points of sale. The study equally analyzes the reliability of services, responsiveness, assurance of services, customer loyalty and the tangibility of services. The main objective for this research was to analyze the contribution of digital financial services to quality service delivery in Rwanda Commercial Bank, and to this end, research questions were generated to establish the respondents' characteristics, what their perceptions are on digital financial services as well as the quality of service delivery in Rwandan commercial banks. The population of this study comprised 21,072 customers from four branches of Bank of Kigali who use digital financial services. Primary data was collected using questionnaires and data treatment done using SPSS version 22. The regression analysis found that most digital financial services have a significant and positive effect on quality service delivery in Rwandan commercial banks. This paper concluded that digital financial services contribute to the quality of service delivery in Rwanda commercial Banks. Therefore, the study recommends that the Bank of Kigali should improve its digital financial services by increasing the number of agents in different corners of Kigali. Similarly, Bank of Kigali should also make its digital financial services more accessible to customers who don't have smartphones.*

Index Terms— ATM, Assurance of Service, Customer Loyality, Internet Banking, POS,Retails agents, Reliability services,Responsiveness Telephone Banking, Tangibility of service

1 Introduction

Effective utilization of technological(IT) innovations has been a major theme in most of the recent studies relating to the influence of digital banking on quality service delivery. Effective utilization of IT innovations requires changes in the organizational structure and management practices in the banking industry. Not all organizations can easily incorporate necessary changes to benefit from IT innovations (Chirongo and Motayana D. 2018).

By the early 21st century, financial institutions had become increasingly large with a more sophisticated and interconnected range of retail banking activities (Adem, 2015)

This global financial system emerged during the first modern wave of economic globalization, marked by the establishment of the central banks, multilateral treaties, and intergovernmental organizations aimed at improving the transparency, regulation, and effectiveness of international markets (Graham, 2016). The revolution of information technology has influenced almost every facet of life, among them, is the banking sector. Service delivery in banks has greatly transitioned from visiting banking halls to making transactions remotely. The need to reach customers in areas gave rise to retail banking (Graham, 2016).

The United Kingdom has one of the highest rates of retail banking adoption in the world: around one-third of customers use mobile banking applications and mobile banking is now available to customers of all the major banks. While there are profound differences in the sophistication and functionality of the mobile banking applications offered by the established banks in the UK, customers are typically able to check their balance, set up personalized alerts, send payments to other accounts using a mobile number, and locate their nearest branch or ATM. In its end-to-end digital transformation, Lloyds Bank in the UK focused on ten customer journeys, using agile delivery, deploying cross-functional customer journeys, and empowering product owners with responsibility. Lloyds also modernized its IT architecture to extend the use of microservices, and cloud environments. The results were dramatic. Between 2014 and 2016, the number of customers using Lloyds' mobile channel grew from five million to eight million (Mackinsey, 2017).

Platform companies that orchestrate these ecosystems have become the de facto interface for customers across multiple services, and financial service players are at risk of being reduced to white-label manufacturers for the platform player. Already, in China, digital attackers managed $6.5 trillion in transactions in 2015, five times the level just two years earlier, and exceeding the $6 trillion in offline point-of-sale transactions handled by traditional banks in 2015. Similarly, digital attackers increased their share of the unsecured lending market in China from 1 percent in 2013 to 25 percent in 2016 (Kothari, 2011)

According to Shyamala (2015), there have been a number of in-

novations in Australia's retail banking market in recent years with respect to products (such as the introduction of reward accounts), services (as part of the wider digitalization of retail banking); and new business models (for example by firms with only an online presence). When assessed individually, there is a considerable degree of variation in the development of each innovation and the extent to which each innovation has impacted (or is likely to impact) the market. Both the introduction of reward accounts and mobile banking (as part of the wider digitalization of retail banking) are well established. In contrast, other innovations, such as the use of account aggregation services, big data, and digital wallets are in the early stages of development, particularly when considering their application to the wider retail banking market (Finscope World, 2013)

Africa's retail banks have compelling reasons to embrace digital transformation. Firstly, African banking customers are among the most enthusiastic adopters of mobile and digital channels of any developing region. Secondly, a number of disruptive competitors, including numerous mobile money players and digital attackers such as Tyme Bank in South Africa or Alat in Nigeria, are emerging and posing a threat to revenue share *(*Honohan C. 2016). Additionally, advances in technology are raising the bar and the opportunity for innovation; these include increased affordable computing power for processing big data; the rise of artificial intelligence and machine learning; robotics lowering the cost of automation; and blockchain. Finally, ecosystems, which have emerged most notably in China, are likely to become more of a feature in the African economy, and banks need to have the digital sophistication to play a role as they develop the retail banking sector (Naison, 2013).

Good business environment, sound regulatory framework of the banking sector as well as the retail banking sector network extension facilitated the entry of regional banks in Rwanda. As a result, the level of financial inclusion in Rwanda increased from 24% to 72% in 2012 and from 48% to what % in 2008 (FinScope, 2013). BNR (2016), to reduce transaction costs as another barrier of financial inclusion, digital financial services such as mobile payments, mobile banking, and internet banking were introduced in Rwanda. This contributed to the expansion of financial services in the country between 2012 and 2016. The use of digital financial services boosted access to formal non-bank financial services to 42% in 2015 from 19% in 2012. For example, in 2015, 74% of adults in Rwanda (2.8 million) used mobile money services. Clearly, the formulation and adoption of economic policies are important in achieving sustainable economic development. It is about how leaders adjust strategies and choices to changing circumstances (Jawadekar,2016)

Gopinath (2015) asserts that the advancement in technology has played a vital role in improving service delivery standards in the banking industry. In its simplest form, Automated Teller Machines (ATMs) and deposit machines now allow consumers to carry out banking transactions beyond banking hours. As most Rwandans now own mobile phones, banks have also introduced mobile banking to cater to customers who are always on the move FinScope (2013). Mobile banking allows individuals to check their account balances and make fund transfers using their mobile phones. This was popularized in Rwanda first by Ecobank Rwanda and Bank of Kigali before other banks followed suit. E-banking has made banking transactions easier around the World and it is fast gaining acceptance in Rwanda.The current technology in the bank plays a vital role in helping financial managers to retrieve data, process them and then analyze them to make effective and efficient growth sustainability decisions, unlike in the past where most commercial banks used to face fatal difficulties. Therefore, the researcher carried out a study on the contribution of digital financial services to quality service delivery in Rwandan commercial banks focusing on BK as a case study on account of its wide range of solutions for mobile and digital devices that are fast, safe and easy to use.

1.1. Statement of the Problem

According to Mackinsey (2017), in the past, customers' demand for banking services was driven basically by the safety of their monies as well as interest accruing from such savings. However, the present-day customer demand has shifted from just the safety of money to how banks deliver their services. The reason is that the present-day customer requires efficient, fast and convenient services. Since its establishment, some commercial bank has remained bank of choice for urban and rural dwellers, rich and poor, ordinary and privileged, and active workers and pensioners. Even if those banks have been advanced in digital financial services like Mobile application, ATM, and others, they still face the challenge customers crowding different branches in town and rural areas to access financial services in lieu of using the digital financial services that are quick and save time. It is upon this background that this study sought to investigate the contribution of digital financial services to quality services delivered to customers of Bank of Kigali. Abd-El-Salam, (2013) reports that in the recent past, growth in information technology has had massive consequences on flexible modes of payment, banking services that are user-friendly and led to more resourceful and successful banking systems. Although internet banking makes the transaction faster and more convenient, several commercial banks in Kenya have not adopted this new banking product. The banks that have adopted the product face various obstacles thus necessitating a need for a study to ascertain the challenges facing internet banking and to determine how they can be overcome to enhance internet banking.

1.2 Objectives of the Study

The main objective of the study is to find out the contribution of digital financial services to quality service delivery in Rwanda Commercial banks. This research guided by the following specific objectives:

1. Examine the perception of respondents on the reliability of services from Rwanda commercial banks
2. Investigate the perception of respondents on their responsiveness to Rwanda commercial banks.
3. Evaluate the perception of respondents on the assurance of services from Rwanda commercial banks.

4. Find out perception of respondents on customer loyalty in Rwanda commercial banks.
5. Examine the perception of respondents on the tangibility of services from Rwanda commercial banks

6. Investigate the effect of DFS on the quality of services delivered by Rwanda commercial banks.

1.3 The research Hypotheses

According to Johnson (2001), a hypothesis is a proposal projected to explain facts and observations to questions asked. It is like a statement which can be shown, confirmed and made to order. It can be accepted or rejected depending on the result of the statically tested data. A hypothesis provides direction to research. The hypotheses for this study were as follows:

Ho_1:There is no significant effect of DFS on the reliability of quality service delivery.

Ho_2: DFS does not significantly affect the responsiveness of commercial banks in Rwanda.

Ho_3: DFS do not have a significant effect on the assurance of quality service delivery in a commercial bank in Rwanda.

Ho_4: There is no significant effect of DFS on customer loyalty in commercial banks in Rwanda.

Ho_5: No significant effect of DFS on the tangibility of service in a commercial bank in Rwanda

HO_6: There is no significant effect of DFS on quality service delivery in commercial banks.

1. 4 Justification of the Study

Dietz (2016) argues that as long as technology and digital services continue to ingrain themselves into more aspects of our lives, the financial sector is not immune. New technology has given way to new services and with new services comes disruption of the old. Whether it's a service such as PayPal or Apple Pay; or digital banks such as HSBC's "First Direct," digital transformation of the financial industry is ongoing. Customers are gravitating more towards digital experiences and digital products. At the same time, providers within the industry are rethinking the playbook. Although financial services have been computerized for decades, with products such as retail brokerage using digital channels for some 20 years, a more radical transformation of the industry was delayed due to the market advantages of traditional financial service providers. These included the established trust of customers, regulatory barriers to entry in banking and insurance, and supervisory approaches that created a bias to internalizing all or most of the value chain. This research sought to assess and measure the quality of services delivered in regard to digital banking services, the research was carried out through a survey design that questioned and measured respondents' perception on the contribution of digital financial services adopted by many financial institutions in Rwanda, to the quality of services delivered by those financial institutions.

2 REVIEW OF RELATED LITERATURE AND STUDIES

2.1 CONCEPTUAL REVIEW

Digital financial services: The ultimate goal for banks is to maintain a certain level of customers who generate profits. Therefore, the aim is to retain existing and gain new customers. By so doing, customer growth becomes a paramount objective to the bank. Banks are realizing that revenue growth cannot be taken for granted anymore and that survival is not simply a question of turning revenues into reasonable profits, but of actively securing a flow of revenues through retail banking (Kossowki, 2013).

2.1.1The role of Automated Teller Machine (ATM) on quality services delivery

Using the ATM, customers can access their bank deposit or credit accounts in order to make a variety of transactions such as cash withdrawals, check balances, or credit mobile phones. If the currency being withdrawn from the ATM is different from that in which the bank account is denominated, the money is converted at an official exchange rate. Thus, cash machines often provide the best possible exchange rate for foreign travelers and are widely used for this purpose (Pandey, 2013). ATM is so widely accepted that the first cash machine was put into use by Barclays Bank in its Enfield Town branch in north London, United Kingdom, on the 27th of June 1967. This design used paper cheques issued by a teller or cashier, marked with carbon-14 for machine readability and security, which is a later model that was matched with a personal identification number (PIN). Shepherd-Barron states, "It struck me [that] there must be a way I could get my own money, anywhere in the world or the UK (Mwangi, 2016).

According to Kossowki (2017), in the modern cash machines, the customer is identified by inserting a plastic ATM card with a magnetic stripe or a plastic smart card with a chip that contains a unique card number and some security information such as an expiration date. Authentication is then provided by the customer by entering a personal identification number (PIN). An electronic card is a physical plastic card that uniquely identifies the holder and can be used for financial transactions on the internet. For instance, Automated Teller Machines (ATM) and Point-of-Sales (PoS) terminal are usually used to authorize payment to the merchant or seller.

However, bank customers usually enjoy the convenience of ATM debit cards to take out money from a machine and to buy products or services. One doesn't have to carry cash because they can get it from almost any ATM machine, though they may end up paying a fee if they use an ATM that's not in their bank's network. Customers can pay your bills easily and quickly with a debit card because the number on the card acts like a credit card number (Garry, 2012). Criminals target ATMs, so using an ATM could place the customer at risk of robbery after withdrawing

money from the machine(Mwangi, 2016).

2.1.2 Telephone Banking on quality services delivery

Revathy (2012) reveals that telephone banking is a service provided by a bank or other financial institutions that allows its customers to conduct a range of financial transactions remotely using a mobile device such as a mobile phone or a tablet and using a software, usually called an app, provided by the financial institution for the purpose. Telephone banking is usually available on a 24-hour basis. Some financial institutions have restrictions on which accounts may be accessed through telephone banking, as well as a limit on the amount that can be transacted.

The types of financial transactions which a customer may transact through telephone banking include obtaining account balances and the list of latest transactions, electronic bill payments, and funds transfers between a customer's or another's accounts. Some also enable copies of statements to be downloaded and, sometimes, printed at the customer's premises; while others charge a fee for mailing hard copies of bank statements (Sridhran, 2017). According to Phanindra (2015), from the bank's point of view, telephone banking reduces the cost of handling transactions by reducing the need for customers to visit a bank's branch for non-cash withdrawal and deposit transactions. Transactions involving cash or documents (such as cheques) are not able to be handled using mobile banking, and a customer needs to visit an ATM or bank branch for cash withdrawals and cash or cheque deposits (Paxton, 2015).

Khan (2016) mentioned that key challenges in developing sophisticated mobile banking applications arise from a large number of different mobile phone devices given that banks do not offer telephone banking solutions on any type of device. Some of these devices support Java ME and others support SIM Application Toolkit, a WAP browser, or only SMS. There is a myth that there is a challenge of interoperability between telephone banking applications due to the perceived lack of common technology standards for mobile banking. In practice, it is too early in the service lifecycle for interoperability to be addressed within an individual country, as very few countries have more than one telephone banking service provider. As telephone banking matures, money movements between service providers have naturally adopted the same standards as in the banking world.

2.1.3 Internet banking and quality service delivery

Jude (2014) defines internet banking as an electronic payment system that enables customers of financial institutions to conduct financial transactions on a website operated by the institution such as a retail bank, virtual bank, credit union or building society. Internet banking is also referred to as online banking, virtual banking and other terms. To access a financial institution's online banking facility, a customer with Internet access would need to register with the institution for the service, and set up some password (under various names) for customer verification.

Kitwa (2014) argues that the customer can link to the customer number any account which the customer controls, which may be cheque, savings, loan, credit card, and other accounts. Customer numbers should also not be the same as any debit or credit card issued by the financial institution to the customer.

To access online banking, a customer would go to the financial institution's secure website and enter the online banking facility using the customer number and password previously set up. Some financial institutions have set up additional security steps for access to e-banking, but there is no consistency in the approach adopted.

Mukhopadhay (2013) claims that internet banking facilities offered by various financial institutions have many features and capabilities in common, but also have some that are application specific. The common features fall broadly into several categories: a bank customer can perform non-transactional tasks through online banking, including - viewing account balances, viewing recent transactions, downloading bank statements, for example in PDF format, viewing images of paid cheques, ordering checkbooks, downloading periodic account statements and applications for M-banking, E-banking.

2.1.4 Agency banking and quality service delivery

Agency banking was introduced to aid increasing convenience in banking for customers especially for those based in rural areas as the agents operating hours are more since some agents open as early as 3hours and close late. Through agency banking, customers can deposit at free or low costs and withdraw at a cost that would have previously included transport. In addition, agency banking is deemed more convenient as they open for longer hours compared to formal banks, there are shorter queues to access services, and are more accessible for illiterates and the very poor who might feel intimidated in branches. Therefore, customers save on time they have to travel to a bank branch, and the time they have to wait in line to be served (Mwangi, 2016).

Similarly, banks are now providing special services, value-added services, by way of increasing convenience, tapping a broader market, increasing service channels and lowering cost in accessing their services. When there is a great demand for these services like school opening times, month end and other prime times, the long queues are a disservice to customers, who may choose to go to competitors; thus, taking away the business (Jaldesa, Muturi & Sumba, 2015).

Commercial banks are institutions that engage in two distinct types of activities, one on each side of the balance sheet and lending. Commercial banks' deposits are dependent on depositor's money as a source of funds (Werner, 2014). Bank deposits represent the most significant components of the money supply used

by the public, and changes in money growth are highly correlated with changes in the prices of goods and services in the economy (Mashamba, 2014). Bank deposits are made to deposit accounts at a banking institution, such as savings accounts, checking accounts, time deposit accounts, and money market accounts. The account holder has the right to withdraw any deposited funds as set forth in the terms and conditions of the account. The "deposit" itself is a liability owed by the bank to the depositor (the person or entity that made the deposit), and refers to this liability rather than to the actual funds that are deposited (Adem, 2015). Consumers deposit their money in banks as a safety measure, for ease of access and the possibility of returns. The motive is to keep the money in safety for future use.

Bank deposits represent the most significant components of the money supply used by the public, and changes in money growth are highly correlated with changes in the prices of goods and services in the economy. Deposits provide most of the raw materials for bank loans and thus represent the ultimate source of the bank's profits and growth. Banks make a profit by using their deposits, therefore it is said that depositors can disciple banks (Gemedu, 2013). Commercial banks are critical to the development process. By granting loans in areas such as agriculture, manufacturing, services, construction and energy sectors, they contribute to the development of the country. Bank loan portfolios including volume, tenor and structure may be generally influenced by their expectations of the performance of the economy both in terms of stability and level of performance. As cited by (Churchill, 2014), banks make out more loans during periods of boom and reduced level of macroeconomic uncertainty and curtail lending when the economy is in recession.

Since agency banking is targeted toward financial inclusion, transaction costs related to the financial services have to also reduce considerably. This is because the segments targeted are often customers with low balances but with frequent transactions. Banking agents should be the lowest cost channel for cash transactions, and the charges for using them should reflect that. Transaction charges should be lower on deposit than on withdrawal, reflecting the additional revenue deposits. This may seem at odds with the higher commission the bank might pay the agent for a deposit, but this reflects that the bank stands to gain far more from a deposit than from a withdrawal. So the bank should aim to recover more of its costs when the money is on its way in, not out. As is expected, most commercial banks that have rolled out agency banking have put in place a transaction cost model on withdrawals and no fees for cash deposits. This is expected to increase the volume of deposits into the bank, making money available for loans and other investment opportunities. Agent banking systems are the most cost-effective for transactional accounts with low balances and frequent transactions (Veniard, 2015).

Agent banking systems are up to three times cheaper to operate than branches for two reasons. First, agent banking minimizes fixed costs by leveraging existing retail outlets and reducing the need for financial service providers to invest in their own infrastructure. Although agent banking incurs higher variable costs from commissions to agents and communications, fixed costs per transaction for branches are significantly higher (Veniard, 2015).

Some of the benefits that commercial bank gain from agency banking are: huge savings on cost of construction of bank premises and leasing costs when a bank is using the agency premises; human resource expenses have reduced as bank do not have to employ new staff to manage the agency and the cost of training if any is to the bare minimum; savings on equipment like furniture and computers (Mashamba, 2015). Formal approval for each branch opening is required in 78 percent of developing countries. In several countries, such as in Kenya, physical inspection from a central bank representative is required as part of the approval process, which may substantially delay a branch opening in remote areas. In several countries, such as in India, regulating authorities limit the number of branches in geographical areas. Whether a branch opens and when a branch opens, therefore, depends on administrative processes. These regulations impose restrictions on efficient branch installation, thus may substantially affect investment costs and the profitability of branches (Mwangi, 2016). The construction and facilities of bank branches are subject to regulation and therefore cause substantial investment costs.

2.2. Quality Service Delivery in Rwanda Commercial Banks

Quality service is one of the most important competitive factors in today's business industry. A fundamental question is how to make it excellent. However, excellent service is not a one-way street. It depends on how the customer gives feedback to that particular service. That being said, one fact is without question; if the service quality is not sufficiently high, the service provider is likely to disappoint the customers regardless of their expectations (Nkusi, 2018).

The low and middle-income countries, including my country [Rwanda], as opposed to the upper-middle-income economies (currently referred to as developed countries), need to focus much attention on quality services. While the upper-middle-income economies are far ahead of the low and middle-income countries in terms of service delivery due to tremendous penetration of technology in every aspect of life, the latter must embark profoundly on continued or improved quality service. The concept of service climate plays an important role in understanding how to deliver excellent service quality, as it captures what employees experience in terms of organizational practices regarding service delivery. It also influences employee motivation regarding service behavior (Trotter, 2010).

If employees experience excellent service quality with the organization, they are more likely to be motivated to deliver excellent quality services outside of the organization. Today, findings show that training, empowerment, and rewards are the three most significant factors which determine the level of performance, and in turn, lead to the delivery of service strategy and excellent service quality. To illustrate more, training of service employees, as one

of the most important tools of equipping the employees with relevant skills has long been identified as the most important factor behind higher service quality. For years, studies have proved that there is a strong correlation between the number of employee training hours and the degree of service quality. To make it a success, the employer should focus on more than the basic service-specific competencies. The main emphasis should rather be on training of service management and other soft skills such as social skills, attitude and language abilities. This enhances the overall capabilities of service employees and improves the overall performance of the service system (Nkusi, 2018)

Secondly, empowerment means providing employees with enough autonomy to allow them to handle unforeseen situations and challenges and let them be more self-sufficient in their work. It, however, doesn't imply doing away with monitoring and evaluation of the service delivery. It simply means to give them the requirements to be able to do things at a certain level of independence while bearing in mind that accountability and transparency must be envisaged (Nkusi, 2018)

Another thing is the reward for excellent performance. The term reward should in this context be understood as a broad term referring to more than just monetary reward. Contrary to common perceptions, monetary rewards play a much smaller role in aligning performance with the service organization's values and goals compared to non-monetary rewards. For both types of goals, it is of high importance that the goals are realistic and achievable and that the employee has been involved in the goal-setting process. The intangible nature of services means that performance can be difficult to measure. Therefore, employees must be trusted to monitor their own performance. Performance appraisals should include input from employees as well as customers and the appraisal results must be used in determining training needs. For this to be achieved, it requires, however, to invest largely in young people's education, health and protects and guarantee their rights. The corollary of that is the change of mindset towards better service delivery (Mackinsey, 2017).

It is arguable that today's youth are tomorrow's innovators, creators, builders and leaders. nevertheless, they need the required support to attain desirable knowledge and skills to be part and parcel of a broader transformational agenda. The precursor for improved service delivery is to have people with changed mindsets. To put it succinctly, improved service delivery must be premised on the shift of patterns of doing things and without a push-button. For instance, Rwanda's largest segment of the population is youth, and thus a lot more needs to be done to train and inculcate young people to contribute more meaningfully to better service delivery. Change of perspectives is the fulcrum for changing the patterns of behavior in service delivery. Change of mindsets is not the only yardstick but a driving force behind improved services (Nkusi, 2018)

Though all other factors remain constant, we can never underestimate the role of information technologies to improve service quality. The integration of information technology in virtually all services would tremendously lead to improved service quality. Harnessing information technologies is equally a fundamental tool in improved service delivery. Technologies can be used in quality control to collect customer data, monitor operations and facilitate service recoveries, among others. Indeed, technology now is able to help provide key advantages to businesses in engendering customer loyalty by improving customer service. The goal of any business in terms of its customer interactions is to generate loyalty. There's no better way to do that than to offer quality products and services and to be responsive to your customers (Nkusi, 2018).

According to Arora, (2013) service can be defined as the performance of work or duty by an official or an act of helping others, or power to control or make use of resources, or an organization or system providing the public with something useful or necessary (The Universal customers).

2.2.1.Reliability of Services within Commercial Banks

According to Abdullah, (2013) reliability refers to the ability to deliver expected standards at all times, how the organization handles customer service problems, performing right services for the first time, providing services within promised time and maintaining error-free records. In regard to ATM services, he notes that the reliability of machine parts or product parts is considered as consistently good quality or performance which is able to be treated at any time.

Barry (2014) defines reliability as a fundamental criterion of superior electronic service quality and he states that reliability consists of accurate order of fulfillment, accurate record, accurate quote, accurate billing, and accurate calculation of commissions which keep the service promising to the customer.

Self Service Technology (SST) is opted for as an alternative for banks to cater for the withdrawal and deposit of cash besides over the counter transactions. According to the World Bank (2014), the number of ATMs available (per 100,000 adults) has increased from 36% in 2010 to 69% in 2016. This indicates the sizeable capacity and accessibility of ATM services provided. The variation of services reflects the significant attention and potential growth in ATMs services. There are two issues that affect service quality of ATMs. First, reliability of ATMs is affected by the situation where the ATM runs out of cash due to a large number of customer usage or late replenishment (Kundeliene, 2011).

The process in which service providers remain faithful in rendering services to its customers can be considered as the reliability dimension of service quality, Reliability assures the customer of a service provider's ability to consistently provide a perceived quality of service. Reliability has an impact on trust and the overall impression left in the mind of a customer after service consumption, the reliability dimension of service quality is vital and perceived through the people aspect of service quality, Reliability means the ability of a service provider to provide the committed

services truthfully and consistently. Customers want trustable services on which they can rely (Abd-El-Salam, 2013).

According to Arora (2013), reliability is the most important dimension of market segmentation, which is also an important dimension in the SERVQUAL scale (A multiple item scale for measuring customer perceptions of service quality). In the virtual environment, it is vital to make customers trust that an organization is going to perform what it promises to do. The principal objective of organizations is to maximize profits and to minimize costs. Profit maximization can be achieved through increased satisfaction because satisfaction leads to customer loyalty, recommendation and repeat purchase.

The following attributes in reliability dimension can make customers recognize the consistency and credibility: accurate delivery of services, complete order service, a company being truthful about its offering, the correct and timely digital financial services keeping service promise, keeping promotion promise, accurate online booking records and a running website (Arora, 2013).

2.2.2 Responsiveness of services in Commercial Banks

According to Olusanya (2015), responsiveness is defined as the ability to respond to customer requirements quickly and flexibly. The Evolution of information technology has brought astonishing changes in the banking business environment more than in other sectors. Banks have to adopt technology to deliver their services and at the same time reduce cost due to the creation of value-added services for customers.

According to Al-Hawary (2011), the willingness to help customers and to provide prompt service is responsiveness. It may also refer to the help customers get when they bring forward E-banking complaints such as accounts being debited when money has not been dispensed, cards being captured as underpayment, lack of certain currency denominations, no receipts being issued and situations where the e-banking is out of service for very long hours and at times days. This is another area that needs attention to prevent the customer from feeling that the services are below their expectations.

Responsiveness means compliance to help customers and to present punctual examination, as well as the notion of flexibility and the ability to customize the service to customer needs. Responsiveness reflects on the motivation to help customers and provide on time service; a bank must avoid keeping customers waiting for no apparent reason, especially when they come to the bank for some products or services. These are no excuses given for the charges/price to any late service gotten from the bank (Brenda, 2012).

Customer satisfaction is a degree of satisfaction provided by the goods or services of any company as measured by the number of repeat customers or how service meets the customer's expectations From the viewpoint of business administration, service quality is an achievement in customer satisfaction. It reflects at each service encounter. Customers form service expectations from past experience, word of mouth and advertisement; in general, customers compare perceived service with expected service in which if the former falls short of the latter, the customers get disappointed.

Responsiveness includes documenting customer complaints, tracking the actions taken to resolve them and surveying customers on their satisfaction with the result. The responsiveness system compares high levels of reliability, competence, and delivery to the level of customer satisfaction (Biwott, 2015).

2.2.3. Assurance of Services to Customers of Commercial Banks

According to Abd-El-Salam (2013), assurance is to inspire trust and confidence. Assurance is defined as employee's knowledge of courtesy and the ability of the firm and its employees to inspire trust and confidence. Trust and confidence may be embodied in the person who links the customers to the company, for example, the marketing department. Thus employees are aware of the importance to create trust and confidence from the customers, in order to gain competitive advantage and for customers 'loyalty (Al-Hawary, 2011).

Assurance means competence and courtesy of employees and the ability to convey trust and confidence. This category includes these measured components: competence, courtesy, credibility, and security guaranteed to the customers. The quality of assurance is embedded on the knowledge and courtesy of employees and their ability to inspire trust and convert confidence among customers (Abd-El-Salam, 2013)

2.2.4. Tangibility of Services within Commercial Banks

Tangibility is defined as the appearance of physical facilities, equipment, personnel and written materials. Malik (2011) referred to tangibility as modern looking equipment, healthy physical employees and visually appealing materials.

According to Rehman (2012, facilities' management is the integrated management of the workplace to enhance the performance of an organization. More specifically, facilities' management can be defined as the management of promises and services required to accommodate and support the core business activities of a client organization, while constantly adding value to the stakeholders. Facilities' management is, therefore, a key function in managing facility resources, as well as supporting services and the working environment to support the core business of an organization in both the long and short term. According to Sulieman (2013), tangibility is defined as the degree to which a service or product can provide a clear concrete image of services.

Among different service quality dimensions, tangible aspects of banking services play a pivotal role in satisfying all kinds of customers of any bank. However banking is basically intangible in nature and bankers are converting it into tangible with the help of physical facilities, equipment, personnel and communication materials. The banker who converts these tangible factors well, reaching successfully every customer, leads to customer satisfaction. Conversely, at the same time, several banks are experiencing increasing customer dissatisfaction and resulting in the customers switching behavior. This dissatisfaction could be the cause of missing tangible options of the bank. Because the rate of customer retention and satisfaction highly depends on various tangible factors like bank providing data, information, modern-looking equipment, staff appearances, bank providing materials associated with services and visually appealing parts of the bank, banks

ought to do better in this area. This excellent tangible service quality is a major optional competitive strategy that may or may not, be adopted to differentiate one bank from another: today it is essential to customer satisfaction (K.Kalidoss, 2014).

Customer satisfaction is a major issue for any business that is operating in technology-based tangible facilities and related services. Good customer service quality is the determinant factor in the future survival of any business. Most consumers now prefer technology based service delivery such as ATM, mobile banking, internet banking and SMS offered by employees (Caffasso, 2011)

ATMs are self-service technology devices that are used by banks for financial service delivery. They can also be described as electronic computerized telecommunications devices that provide the clients of a financial institution with access to financial transactions in a public space without the need for a cashier, human clerk or bank tellers. Customers can access their bank accounts in order to make cash withdrawals, check their account balances as well as purchase prepaid cell phone credit whilst using an E-Banking (Narteh, 2013).

The appearance of physical facilities, equipment, personnel and communication materials. This relates to the physical appearance of e-banking. It should be appealing to the customer and should be brightly lit at night. The surroundings should be maintained clean by way of the bank providing waste bins for litter generated from receipts. The personnel that provide guidance to the customers should also look presentable (Malik, 2011).

2.3. Theoretical Review

This study stems primarily from three theories; Game Theory, Disruptive Innovation Theory and Technology Acceptance Theory. These theories enhance understanding of innovative strategies like retail banking. This section comprises different theories which are related to the research topic.

2.3.1. Technology Acceptance Theory

The technology acceptance model was introduced by Davis in 1986. According to this theory, emerging technologies cannot improve organizational effectiveness and performance if the change has not been accepted by the users.

The theory of technology acceptance is one of the most popular theories in understanding the adoption of computer technologies. Adoption of any innovation or information technology requires investment in computer-based tools to support decision making, planning, and communication. However, these systems may be risky. It is therefore very critical that the systems are specified on organizational preference and logic. It is also necessary to understand that people may resist technological changes. There must be an effort to understand why people resist changes and the possible ways through which such issues can be resolved. Appropriate organizational culture must be inculcated; the change must be adopted in an incremental way accompanied by communication. Everyone involved must be informed of their roles and empowered to perform those respective roles (Graham, 2015).

Acceptance theory of technology is based on two assumptions; perceived usefulness of the system such as improved performance, enhanced productivity, effectiveness, and efficiency in operations, and the perceived ease of use of the new systems such as ease to learn, easy to use, ease to control and ease to remember. This theory brings an understanding that acceptance and use of new technology is a function of the users' feelings about the system and its perceived benefits (Graham, 2015). This theory is so important to this study since digital financial services cannot be effectively implemented and used when users do not appreciate it; commercial banks need to formulate strategies that encourage customers to use digital financial services.

2.3.2. Disruptive Innovation Theory

Barahona and Elizondo (2013) point out that digitalization is an innovation in the banking sector. As such, it requires continual improvements to avoid disrupting the normal banking operations and processes. The theory of disruptive innovation is characterized by small and costly client base and non-attractiveness at the initial stages of implementation, some level of acceptance as the system is implemented, new competition as innovation continues and continuous quality improvement to improve adaptability by users and stakeholders.

Disruptive innovations require critical resources, processes, and values. Critical resources include resources supporting normal business activities such as people, technologies, product designs, brands, customer and supplier relationships, relationship management with its clients and suppliers and marketing activities. Critical processes include decision-making protocols and coordination patterns that support operations of existing business operations. In addition, organizational cultural values, belief system, and assumptions are also critical (Barahona & Elizondo, 2013).

According to Barahona and Elizondo (2013), the theory of disruptive innovation recognizes the fact that companies and systems are less flexible. Therefore, the adoption of some strategies requires a strategic and proactive approach so as to build the system within the existing structures rather than adoption of completely new systems. Adequate preparation in terms of the right technology, leadership to foster change process, training of the employees and

awareness campaign among users is critical. It is important to note that sometimes disruptive innovations may only work in the short run. Clayton, (2015) criticizes the theory by arguing that the problem with conflating a disruptive innovation with any breakthrough that changes an industry's competitive patterns is that different types of innovation require different strategic approaches. To put it another way, the lessons learned about succeeding as a disruptive innovator (or defending against a disruptive challenger) should not be applied to every company in a shifting market. He adds that "If we get sloppy with our labels or fail to integrate insights from subsequent research and experience into the original theory, then managers may end up using the wrong tools for their context, reducing their chances of success. Over time, the theory's usefulness was be undermined."

This theory is very meaningful to this study since it reminds commercial banks' management that consistent innovation and improvement of digital financial services are key not only on customers but also to a bank's competitive advantage.

2.3.3 The Game Theory

Game theory was developed extensively in the 1950s by many scholars. It was later explicitly applied to biology in the 1970s, although similar developments go back at least as far as the 1930s. Game theory has been widely recognized as an important tool in many fields. Modern game theory began with the idea regarding the existence of mixed-strategy equilibria in two-person zero-sum games and its proof by John von Neumann in 1950. It is one of the important theories that management at tactical levels consult before taking durable company strategies. This theory helps to analyze dynamic and sequential decisions at the tactical level. The main value of game theory in strategy is to emphasize the importance of thinking ahead, thinking of the alternatives, and anticipating the reactions of other players in your "game." Key concepts relevant to strategy are the payoff matrix, extensive form games, and the core of a game. Application areas in strategy are new product introduction, licensing versus production, pricing, R&D, advertising and regulation (Brandenburger and Nalebuff, 2015).

Morgan (2013) criticizes this theory on grounds that successful strategy cannot depend just on one firm's position in industry, capabilities, activities, or what they have. It depends on how others react to your moves, and how others think you react to theirs. By fully understanding the dynamic with others, you can recognize win-win strategies that make you better off in the long term, while signaling tactics that avoid lose-lose outcomes at the same time. Moreover, if you understand the game, you can take actions to change the rules or players of the game in your favor

Branden burger and Nalebuff (2015) give some good examples of this. One way a company can change the game and capture more value is by changing the value other players can bring to it; companies can change their game of business in their favor by changing: players ("Value Net") - customers, suppliers, substitutes, and complements (not just the competitors), added values - the value that each player brings to the collective game, rules - laws, customs, contracts, etc. that give a game its structure, *tactics* - moves used to shape the way players perceive the game and hence how they play and *scope* - boundaries of the game.

Game theory has been a burgeoning branch of economics in recent years. It is a complex subject that spans games of static (one-time) and dynamic (repeated) nature under perfect or imperfect information. For strategy, though, it can often be a major step just to recognize certain situations as games, and thinking about how a player can set out to change the game (Morgan, 2013). This theory is also very important to this study because it can help commercial bank managements to strategize at a high level of other players within the game.

3. METHODOLOGY

3.1. Research Design

According to Somekh (2012), research design is defined as a careful set of plans developed by a researcher that provides criteria and specifications for the study or research. The research design is the conceptualized architectural structure within which research is conducted with reference to appropriate research approach. It constitutes the blueprint for the data collection, measurement, and analysis (Cooper & Schindler, 2008). This research used the survey research design. A survey research design is a procedure in quantitative research in which an investigator administers a survey to a sample or to the entire population to describe their attitudes, opinions, behaviors, or characteristics of the population. In this procedure survey the researcher collected quantitative numbered data using questionnaires.

3.2 Population

According to Somekh (2005), population is the totality of all elements, subjects, or members that possess a specified set of one or more common characteristics that define it; in inferential statistics, the group to which inferences are drawn.

A Population is the total collection of elements about which the researcher wishes to make some inferences (Cooper & Schindler, 2008). This study based on commercial banks,

specifically BK and the research was only able to cover 4 of its branches located in Kigali city. The study targeted a population of 21,072 customers who used digital financial services.

3.3. Sample size & Sampling Technique.

A sample within context is a subset of the population. This research used a probabilistic sampling technique. The researcher decided to adopt and utilize a probabilistic technique based on the fact that every member of a population has a known and equal chance of being, so simple random sampling was used.

Kothari (2012), asserts that if the sample, let's say 100 respondents, is properly used from a population of 1000, the information presented by the sample equals the information presented by the entire population. The sample size was generated by applying the following formula (Venable 2002).

$$n = \frac{NZ^2\frac{\alpha}{2}pq}{(N-1)e^2 + Z^2\frac{\alpha}{2}pq}$$

Where

n= Sample size

N=Number of population

e = Significant Error Term (0.05)

z = Standard associated with the chosen level of confidence

$1-\alpha$= Confidence

P=estimated percent in the population

q =1-p

For the purpose of this research, the researcher took a sample with 95% of confidence and 5% error of estimation and the sample size was calculated using the following Formula:

$$n = \frac{NZ\frac{\alpha}{2}\sqrt{2}}{(N-1)e^2+Z\frac{\alpha}{2}\sqrt{2}} = \frac{21072*1.96^2}{(21072-1)0.5^2+1.96^2} = 192$$

3.4. Research Instrument

The researcher used a questionnaire which is a tool for collecting and recording information about a particular issue of interest. It is mainly made up of a list of questions, but should also include clear instructions and space for answers or administrative details. Questionnaires should always have a definite purpose that is related to the objective of the research. But it needs to be clear from the outset how the findings were used. There were mainly two parties: the first one focused on particulars of the respondent, and the second one emphasized on the research objectives. The respondents were given questionnaires built on a four-point scale ranging from 1 to 4 (Completely disagree, disagree, Agree, completely agree). The distributed questionnaires gathered all information as per their content, with the aim to find out whether there is any contribution of digital financial services to quality service delivery in Rwanda commercial banks. The structured questionnaire was distributed to the respondents for the achievement of the study objective. Secondary data were collected from published books, newspapers, magazines, journals, online portals etc. There is an abundance of data available in these sources about business studies, almost regardless of the nature of the research area. Therefore application of appropriate set of criteria to select secondary data to be used in the study played an important role in terms of increasing the levels of research validity and reliability.

3.5 Data Gathering Procedures

It is imperative to the researcher to collect all necessary data after getting approval to distribute questionnaires to the respondents. The approval emanated from the supervisor. Then, the researcher personally distributed the questionnaires to the targeted respondents. Even though the researcher gave the opportunity to the respondents to explain freely, the results came up from the answers found on the questionnaires. The researcher distributed copies of the questionnaires corresponding to the total number of respondents and retrieved them at100% of retrieval rate. For about a month, the researcher met customers at the bank and requested them to respond to the questionnaires.

3.6 Validity and Reliability of the Instrument

Validity and reliability are the two main concerns on the credibility of scientific research (Silverman, 2013); these were tested by using the results from a pilot study.

Validity is the extent to which an instrument measures what it is supposed to measure and performs as it is designed to perform. It is rare, if nearly impossible, that an instrument be a hundred percent valid, so validity is generally measured in degrees. As a process, validation involves collecting and analyzing data to assess the accuracy of the instrument. Thus, the questionnaire was approved by the supervisor of this work, before its distribution to the respondents. The reliability and constructed variability was done from 10 copies of questionnaires that were administered to 10 customers from other commercial banks.

The variability and reliability of questionnaires were tested from different customers from other commercial bank

which are not part of the not case study and SPSS was used to access average variance extracted and compared to measure, and Cronbach's Alpha coefficient was used.

The results from the reliability test demonstrated that all the variables under this study passed the reliability test where the Cronbach's Alpha Coefficients were 0.880 for ATM, 0.865 for Telephone Banking, 0.800 for Internet Banking, 0.889 for Retail agents, 0.790 for POS. Thus, these results showed that all independent variables are highly reliable

For the dependent variables, it was shown that the Cronbach's Alpha Coefficients were: 0.854 for reliability services, 0.874 for responsiveness, 0.861 for assurance of service, 0.822 for tangibility of service and 0.845 for customer loyalty. All of the statistical evidence from Cronbach's Alpha Coefficients show that the variables of dependent variables are also highly reliable; all the indicators of variables and those of value creation passed the minimum coefficient test requirement of 0.79.

3.7. Multiple Regression model

There was a test of multicollinear, normality and a test of autocorrelation to establish that the results were not biased before any inferences were made.

RES= β0+ β1ATM+ β2TEB+ β3INB+ β4REA+ β5POS+ μ Model 1

RPS= β0+ β1ATM+ β2TEB+ β3INB+ β4REA+ β5POS+ μ Model 2

ASS= β0+ β1ATM+ β2TEB+ β3INB+ β4REA+ β5POS+ μ Model 3

CL= β0+ β1ATM+ β2TEB+ β3INB+ β4REA+ β5POS+ μ Model 4

TAS= β0+ β1ATM+ β2TEB+ β3INB+ β4REA+ β5POS+ μ Model 5

QSD= β0+ β6DFS+ μ Model 6

4. Results and Discussion

This section presents the data, the analysis and interpretation of the data. It contains their perceptions on each of the sub variables as well as the regression model analysis for the hypotheses testing.

4.1 Testing Hypotheses

Regression analyses are a set of statistical techniques that allow one to assess the relationship between one dependent variable and several independent variables. This section concerns the determination of the best variables of digital financial services that best predict the quality of service delivery within Rwandan commercial bank. This was done by using the multiple regression analysis for testing hypotheses that have been formulated in chapter one.

Testing Null Hypothesis H01

Hypothesis One: There is no significant effect of DFS on Reliability on quality service delivery.

The results from findings indicated the effect of digital financial services on Reliability of services in commercial bank (β1=.012; t=.156; p-value (sig of 0.876) >0.05). This means that ATM doesn't have an effect on the reliability of services in Rwandan commercial bank.

The result from the table above shows that telephone Banking has positive but insignificant effect on reliability of services in commercial bank ((β2= 0.021; t=0.164; p-value > 0.05). This means that telephone Banking doesn't have an effect on reliability of services.

The results again indicated that internet banking has positive but insignificant effect on reliability of service in commercial bank. (β3= 0.19; t=660; p-value > 0.05). This means internet banking doesn't have any effect on reliability of service in commercial bank. However, retail agents have a significant effect on reliability of services in commercial bank (β4= .474; t= 3.152; p-value of 0.02 < 0.05). This means that retail agents have an effect on reliability services in commercial bank.

The results showed that POS (point of sales) has a positive but insignificant effect on reliability of services in commercial bank (β5= .058; t=.525p-value of .600 > 0.05). This means that point of sales doesn't have an effect on the reliability of services at commercial banks.

RES= β0+ β1ATM+ β2TEB+ β3INB+ β4REA+ β5POS+ μ Model 1. Therefore, based on the results the econometric model one is represented as follows:

RES = 2.604 + 0.12ATM+ 0.21TEB+ 0.119INB+ 0.474 REA+ 0.58POS +0.659

Where;
RES: Reliability of Services
REA: Retail agents
ATM: Automated teller Machine
TEB: Telephone Banking
INB: Internet Banking
POS: Point of sales

Testing Null Hypothesis H02

Hypothesis Two: There is no significant effect of DFS on Responsiveness of service at commercial banks.

The results indicated the effect of digital financial services on responsiveness in commercial bank (β1=.009; t=.115; p-value (sig of 0.909) >0.05). This means that ATM doesn't have an effect on responsiveness in commercial bank.

The results shows that also telephone Banking has positive but insignificant effect on responsiveness (β3= 0.26; t=200; p-value of (0.841) > 0.05, this mean that telephone banking

doesn't have an effect on responsiveness in commercial bank

The results again indicated that internet banking has positive but insignificant effect on responsiveness in commercial bank (β3= 0.117; t=657; p-value of (0.514) > 0.05). This means internet banking doesn't have any effect on responsiveness in commercial bank. Also retail agents have a significant effect on responsiveness in commercial bank (β4= .498; t= 3.331; p-value of 0.01 < 0.05). This means that retail agents has an effect on responsiveness in commercial bank.

The results showed that POS(point of sales) has positive but insignificant effect on responsiveness in commercial bank (β5= .079; t=.713p-value of .0.477 > 0.05). This means that point of sales doesn't have effect on responsiveness at commercial bank. The second model of the study was as follows:

RPS= β0+ β1ATM+ β2TEB+ β3INB+ β4REA+ β5POS+ μ Model 2

Therefore, based on the results the econometric model one is represented as follows:

RPS= 2.604 + 0.09TM+ 0.26TEB+ 0.117INB+ 0.498 REA+ 0.79POS +0.659

Where;
RES: Reliability of Services
REA: Retail agents
ATM: Automated teller Machine
TEB: Telephone Banking
INB: Internet Banking
POS: Point of sales

Test Null Hypothesis Three (H03)

Hypothesis Three: There is no significant effect of DFS on Assurance of service at commercial banks.

The results indicated the effect of digital financial services on assurance of services in commercial bank (β1=.272; t=4.664; p-value < 0.05). This means that ATM have effect on assurance of services in commercial bank.

The result shows that also telephone Banking has positive and significant effect on assurance of services (β3= 0.340; t=3.437; p-value < 0.05, this mean that telephone banking has effect on assurance in commercial bank

The results again indicated that internet banking has positive and significant effect on assurance of service in commercial bank (β3= 1.145; t=8.267; p-value < 0.05). This means internet banking has effect on assurance of services in commercial bank. Also retail agents have positive but insignificant effect on assurance of services in commercial bank (β4= .225; t= 2.206; p-value of 0.29 > 0.05). This means that retail agents doesn't have effect on assurance of services in commercial banks. The results showed that POS (point of sales) has positive and significant effect on assurance of services (β4= .784; t= 9.169; p-value < 0.05). This means that point of sales has effect on assurance of services in commercial bank. The model three of the study was as follows:

ASS= β0+ β1ATM+ β2TEB+ β3INB+ β4REA+ β5POS+ μ Model 3

Therefore, based on the results the econometric model one is represented as follows:

ASS= 2.604 + 0.272TM+ 0.340TEB+ 1.145INB+ 0.255REA+ 0.784POS +0.659

Where;
RES: Reliability of Services
REA: Retail agents
ATM: Automated teller Machine
TEB: Telephone Banking
INB: Internet Banking
POS: Point of sales

Test Null Hypothesis Three (H04)

Hypothesis Four: There is no significant effect of DFS on customer loyality at commercial bank.

The results indicated the effect of digital financial services on customer loyalty in commercial bank (β1=.016; t=.212; p-value of .833 > 0.05). This means that ATM doesn't have an effect on customer loyalty in commercial bank.

The results shows that also telephone Banking has positive but no effect on customer loyalty (β2= 0.016; t=.127; p-value of .899> 0.05, this means that telephone banking doesn't have an effect on customer loyalty in commercial bank

The results again indicated that internet banking has positive but no effect on customer loyalty in commercial bank (β3=.118; t=.649; p-value of .517>0.05). This means internet banking doesn't have an effect on customer loyalty in commercial bank. Also retail agents have positive and has an effect on customer loyalty in commercial bank (β4= .456; t= 3.014; p-value < 0.05). This means that retail agents have an effect on customer loyalty in commercial bank.

The results showed that POS (point of sales) has positive but no effect on customer loyalty (β4= .784; t= .687; p-value of .493 > 0.05). This means that point of sales doesn't have an effect on customer loyalty in commercial bank. The model three of the study was as follows:

CL= β0+ β1ATM+ β2TEB+ β3INB+ β4REA+ β5POS+ μ Model 4

Therefore, based on the results the econometric model one is represented as follows:

CL=2.604 + 0.16TM+ 0.16TEB+ 0.118INB+ 0.456REA+ 0.77POS +0.659

Where;
RES: Reliability of Services

REA: Retail agents
ATM: Automated teller Machine
TEB: Telephone Banking
INB: Internet Banking
POS: Point of sales

Test Null Hypothesis Three (H05)

Hypothesis Five: There is no significant effect of DFS on tangibility of service at commercial banks.

The results indicated the effect of digital financial services on tangibility of service in commercial bank (β1=.103; t=1.836; p-value of .068 > 0.05). This means that ATM doesn't have an effect on tangibility of service in commercial bank.

The results show that also telephone Banking has positive and has an effect on tangibility of service (β2= .302; t=3.182; p-value < 0.05, this means that telephone banking have effect on tangibility of service in commercial bank

The results again indicated that internet banking has positive but no effect on tangibility of service in commercial bank (β3=.180; t=1.352; p-value of .178.>0.05). This means internet banking doesn't have an effect on tangibility of service in commercial bank. Also retail agents have positive value but doesn't have an effect on tangibility of service in commercial bank (β4= .193; t= 741; p-value of 0.84 > 0.05). This means that retail agents doesn't have an effect on tangibility of service bank.

The results showed that POS (point of sales) has positive and has an effect on tangibility of service (β5= .680; t=8.282 p-value < 0.05). This means that point of sales has effect on tangibility of service in commercial bank.

The model three of the study was as follows:

TAS= β0+ β1ATM+ β2TEB+ β3INB+ β4REA+ β5POS+ μ Model 5

Therefore, based on the results the econometric model one is represented as follows:

TAS= 2.604 + 0.103TM+ 0.302TEB+ 0.180INB+ 0.193REA+ 0.680POS +0.659

Where;
RES: Reliability of Services
REA: Retail agents
ATM: Automated teller Machine
TEB: Telephone Banking
INB: Internet Banking
POS: Point of sales

Test Null Hypothesis Three (H06)

Hypothesis six: There is no significant effect of DFS on quality service delivery at commercial banks.

The results indicated the effect of digital financial services indicators jointly on quality service delivery in commercial bank (β1=.355; t=4.897; p-value < 0.05). This means that ATM as one of digital financial service indicators have effect on quality service delivery in commercial bank. The results shows that also telephone Banking have positive and doesn't have an effect on quality service delivery (β2= .259; t=2.113; p-value of 0.036>0.05, this means that telephone banking doesn't have effect on quality service delivery in commercial bank.

The results again indicated that internet banking has positive and have an effect on quality service delivery in commercial bank (β3=.614; t=3.567; p-value < 0.05). Also retail agents have positive value and have effect quality service delivery in commercial bank (β4= .590; t= 4.111; p-value < 0.05).

The results showed that POS (point of sales) has positive and no effect on quality service delivery (β5= .143; t=1.343 p-value of 0.181> 0.05). This means that point of sales doesn't have effect on quality service delivery in commercial bank. The model three of the study was as follows:

QSD=β0+ β1ATM+ β2TEB+ β3INB+ β4REA+ β5POS+ μ Model 6

Therefore, based on the results the econometric model one is represented as follows:

QSD=2.604 + 0.355TM+ 0.259TEB+ 0.614INB+ 0.590REA+ 0.143POS +0.659

Where;
RES: Reliability of Services
REA: Retail agents
ATM: Automated teller Machine
TEB: Telephone Banking
INB: Internet Banking
POS: Point of sales

5 Conclusion and Recommendations

5.1. Conclusion

Based on the findings of this paper, independent variables (ATM, telephone banking, internet banking, retail agent and point of sales) have a positive and significant effect on the quality of services delivered in commercial banks in Rwanda. This means that automated teller machines, internet banking and retail agents are important for quality service delivery in commercial banks.

The paper concludes that digital financial services have positive and significant effects on quality service delivery in commercial banks. This means that as long as commercial banks continue to enforce digital financial services, the quality of services and customers are be able to do any transaction in an efficient way. This paper also concludes that digital financial services have positive and significant effect on (reliability of service, responsibility of services, assurance of services, customer loyalty and tangibility of services). This indicates that once commercial banks con-

tinue to protect and innovate those digital financial services, the quality of services which is sometimes affected by many factors will be boosted.

5.2. Recommendations

Based on the aforementioned findings of the study, the following recommendations were made to management of commercial bank(BK):

1. More ATMs should be installed in different areas so that some clients who live from those areas can access digital financial services.
2. Commercial banks should make sure that there is money in those ATMs
3. Commercial banks should care about those customers who don't have phones which can facilitate them like to install bank application so that they can access digital financial services.
4. Internet banking should be strongly protected so that customers can trust doing transactions online
5. Retail agents are still few, those banks should increase agents especially BK which has less retail agents since they help customers to get bank services immediately by using their cards
6. Those banks should enforce professionalism of their employees since customers still need services and go to banks. This means employees of those banks should know better how to provide good services to customers since some customers are still unhappy with the services they get from those bank.

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