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Research Article

AN ASSESSMENT OF INFORMATION TECHNOLOGY, DATA SECURITY, CONFIDENTIALITY, AND ORGANIZATIONAL PERFORMANCE WITHIN THE BANKING INSTITUTION: A CASE OF A COMMERCIAL BANK IN SIERRA LEONE, 2015 - 2023

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ABSTRACT

Commercial Banks in Sierra Leone have tremendously profited from technology innovative sciences in the form of information and communication technology (ICT) usage, which have positively impacted the performance of employees and stimulated customers' actions and reactions with the desire to keep doing business with these banks. Data security and confidentiality have become very important as delivery systems and productivity tools of electronic data and information. The focus of this study is to assess information technology, data security, confidentiality and organizational performance within banking institution in Sierra Leone from 2015 – 2023, a case of the Commercial Bank (CB). This study principally focuses on the effectiveness of computerization, confidentiality, and data security on the performance of the banking system in the targeted Commercial Bank and to examine how computerization and data security has impacted the performance of the Commercial Bank. Sixty (60) questionnaires were given out and fifty-two (52) of the questionnaires were responded to, which were used for this study. The questionnaire drawn distinctly to suit the purpose were administered to various respondents in a 4-point Likert scale of Agree, Strongly Agree, Fairly Agree or Disagree. The chi square statistical tool was used in testing the hypothesis by testing the "Goodness or Fitness" of the frequencies. Some of the major findings were: information and communication technologies are widely accepted by the banking sector; commercial banks in Sierra Leone have now realized that banking today requires prompt delivery of services, efficiency, and the ability for customers to be served in any of their branches any part of the country, without any encumbrance. This study recommends-that - the CB invests hugely on ICT for efficient management of technological innovations and the use of (ICT) and capacity building of staff should not only be restricted to the cities alone, but rural banks should also be improved upon from time to time.

Keywords: Information and Communication technology (ICT), Data Security, Commercial Banks, Organizational Performance, Confidentiality.

INTRODUCTION

The current world is strongly tempted to believe that the most successful organization are those who search for optimality by regulating themselves in accordance with the 'Cyber Revelation' cybernetics which is otherwise known as electromechanical systems, or computerization has provided and will continue to provide lot of jobs for majority of the world's population.

The introduction of computerization in the commercial banking has made tremendous impact on the performance of this sector. With introduction of automated systems, tasks that were done manually have now been computerized. The introduction of systems affects every aspect of the banking industry.

The service which the bank render to customers have now been fully computerized, for example the process of opening account, deposit making withdrawals from account statement request, money transfer etc. all these services are now computerized, customers spend less time in the bank. Laudon and Laudon (2015) contributed that technology in communication deals with the physical devices and software that link various computer hardware components and transfer data from one physical location to another.

Banks have been major users of this technology. The computer gained influence into the commercial banking system of Sierra Leone as far back as 1981, the National Cash Register (NCR) first installed micro-computers at the Bank of Credit and Commerce International (BCCI). The International Bank of Trade and Industry (IBTI) later followed in 1982 and the next was the Sierra Leone Commercial Bank Limited in 1984. Both installed a micro and the first main computer respectively. Today all commercial banks have computerized their operations. Computers have immensely contributed to the growth of commercial banks in Sierra Leone; therefore, customers service has increased and efficiency improved.

However, the most important benefit of this system is the reduction in the volume of manual work done by the computerized system, which cannot be compared to human being. For example, the accuracy of information. Moreover, the computerized system makes the banking process more effective and efficient than the manual system. It is globally believed that the computers can provide useful information if properly fed with a reasonable input or it will result in "garbage in garbage out". The use of computers to carry out a very wide range of activities for work, study and leisure have become part of our everyday life. It is no longer something that you may want to use if you are interested; rather like a motor car, it is an essential part of our lives. We are constantly told that anyone can use a computer, and to some extent, this is true. Laudon and Laudon (2015) opined that Information and Communication Technology (ICT) is at the centre of this global change curve and added that the managers of these financial institutions can never disregard the directives these Information and Communication Technology (ICT) gives in its application to enhance success in the dispensation and recording of data processing.

Computers in commercial and industrial settings have been around for several decades, nothing new about that. What is new however is the availability of computing power at modest cost to managers and

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workers throughout business organization and banking industries. However, in the banking industry computers have been used in various areas carrying out their day-to-day activities. Thanks for the introduction of microcomputers, the power to retrieve and process data no longer belongs exclusively to computer specialists. This data is protected through the awareness of confidentiality by the employees of the institution and different security measures in place. The Information technology has evolved around with a sense of data security of all information in securing the confidentiality of all their valued customers. According to Frenzel (2013), information and communication technology came into proper use in the 1980s which replaced the use of Electronic Data Processing (EDP), Management Information Systems (MIS), but these two systems are still in use by many banking institutions. Confidentiality is an assurance or a promise not to release any information in any way that will allow the person or establishment to be identified publicly. Wherein this helps us achieve our mission of exceptional care without exception.

The Sierra Leone Economy - Sierra Leone, a small nation in Western Africa, has approximately 8.606 million inhabitants with an area of approximately 72,000 sq.km endowed with substantial agricultural, minerals, marine resources and is classified as an underdeveloped country (Lokuge *et al*., 2016; United Nations Development Group [UNDG], 2015). The country has been classified by the United Nation as one of the Least Developed Countries (LDCs) with a large proportion of the people living in abject poverty. The country's economic development has always been hampered by overdependence in mineral. As a result, large scale agriculture of commodity products, industrial development and sustainable investments have been neglected by governments.

Agriculture is the largest employer with 80 percent of the population working in the sector. The sector accounted for 58 percent of the national GDP in 2007 in which Two-thirds of the population of Sierra Leone are directly involved in subsistence agriculture. However, there is a large income difference between the employed and the unemployed. The financial sector and its roles in the process of economic development have attracted notable attention in the country. Financial sector development began deteriorating in the 1970s and 1980s but gradually improved in subsequent periods. Therefore, like many other countries in Sub-Saharan Africa, financial sector reforms have been adopted by the government of Sierra Leone since the 1990s. Sierra Leone is bounded by Guinea on the Northeast and Liberia on the Southeast.

A 1991 - 2002 civil war ravaged the country and caused major destruction of the health care infrastructure (Chan, 2014; Lokuge *et al*., 2016; [UNDG], 2015) however, adversely affected the implementation of reform measures and contributed to deteriorating the financial sector performance and growth in the economy. The country's dilapidated situation was complicated by the Ebola disease and the COVID-19 pandemic of May 2014 and March 2020 respectively, which spread to almost all the 14 districts (Lokuge *et al*., 2016). The Growth in real Gross Domestic Product (GDP) dropped significantly to an average of -4.5 percent per annum between 1990 and 2000 (Sierra Leone Poverty Reduction and Strategy Paper, 2005). Several strategies and economic development plans have been formulated and implemented to combat the problem. These include the Vision 2015 and the Millennium Development Goals (MDGs), the Agenda for Change and the Second Poverty Reduction and Strategy Paper (PRSP II).

These reforms covered a broad category of issues including interest rate liberalization, elimination of direct credit, and adoption of indirect methods of monetary control, abolition of price controls and exchange restrictions, institutional strengthening, and review of legislations. One of the selected preconditions for achieving the priorities of Poverty Reduction Strategy Paper (PRSP II) is 'growing the private sector', especially improving access to finance by building and sustaining a responsive financial sector. An efficient and effective financial system will be important for financing private sector activities.

Despite the reforms, the financial system is still characterized and dominated by a retail banking system. Financial sector development is constrained by physical barriers imposed by weak infrastructure; worsen by institutional, administrative, and legislative obstacles involved in conducting banking and financial transactions (PRSP II, 2012) Poverty Reduction Strategy Paper. Besides, the legal system does not provide the enabling environment to strengthen creditors' rights and enforce commercial contracts and consequently hinders bankers' ability to recover their loans. This undermines the efforts by these institutions to effectively allocate credit to the private sector to stimulate investment and growth. It also undermines the potential of the financial sector to effectively support private sector development initiatives.

Currently, a Financial Sector Development Plan (FSDP) has been developed to ensure an efficient and effective financial system that will play a pivotal role in financing private sector activities. The over-riding priorities of the plan are to strengthen the commercial banking system and improve its competitiveness, enhance rural financial access through microfinance institutions and community banks, and strengthen the enabling environment through the legislative, regulatory, and policy infrastructure. The reforms were expected to impact positively on the financial growth and economic development in the country (PRSP II, 2012) Poverty Reduction Strategy Paper. The current government flagship strategy for its first term was Free Quality School Education (FQSE) program is dedicated to the promotion of quality education (GoSL, 2018) while for its second term is 'Feed Salone' Is expected to boost productivity to fuel inclusive growth, increase local food production and reduce dependence on food import, reduce hunger, increase export earnings, create jobs and build resilient food system (GoSL, 2023).

The financial sector comprised of the Bank of Sierra Leone (BSL) as the regulatory bank, several commercial banks, microfinance institutions, community banks, Credit Unions, and other financial institutions. Commercial banks in Sierra Leone include - Sierra Leone Commercial Bank (SLCB), Standard Chartered Bank, Rokel Commercial Bank (RCB), Guarantee Trust Bank (GTB), Union Trust Bank, First International Bank, First Bank of Nigeria (formerly International Commercial Bank and of Bank of British West Africa), Access Bank Group, Ecobank, Skye Bank, United Bank for Africa, and Zenith Bank. List of Microfinance Institutions include: Bangladesh Rural Advancement Committee (BRAC) Sierra Leone, LAPO Microfinance and Finance Salone (formerly the American Refugee Committee – ARC). Lists of community banks include: Kabala Community Bank, Marampa Masimera Community Bank, Mattru Community Bank, Segbwema Community Bank, Yoni Community Bank and Zimi Community Bank.

The achievement of the 2021 fiscal target required continued tight control on expenditures and sustained effort to improve tax administration and collection. More work is needed to be carried out on structural and sectoral returns that were implemented in 2002, which were the basis for a strong program that could be supported by donors in Sierra Leone's development.

Background of the Case: After the establishment of the Central Bank of Sierra Leone in 1963, there was the drive to establish the first

indigenous commercial bank in the country with the recommendation of the steering committee, which was set, incorporated, and opened for business. On February 15, 1973, vision of an indigenous commercial bank became a reality as the country's first indigenous bank, the Commercial Bank Limited (CB), opened its doors to customers. Established under the Companies Act of 1948 as a limited liability company, with its first offices at Walpole Street in Freetown, the CB was the first commercial bank to be wholly owned and managed by Sierra Leoneans. Two years later, the Walpole Street offices became too small to accommodate the many customers the bank had captured. Consequently, planning commenced for the bank to acquire its own building, and on April 11, 1980, CB formally opened its 12-storey ultra-modern building at Siaka Stevens Street in Freetown with its own resources. That building came to be known as the Christian Smith Building on 29–31 Siaka Stevens Street, Freetown. With a view to extending services to the provinces, the CB opened its first provincial branch in Koidu in 1975, followed by Kenema and Njala branches within another 2 years.

The CB leverages a large network of strategically located branches across the country, with its headquarters at 29–31 Siaka Stevens Street, Freetown. The brick-and-mortar ("Mi Yone CB Kiosks") branches are found in all regions of the country while most of these branches are situated in strategic locations in Freetown and its environs. In 2016, the bank, in its strategic branch expansion drive, worked to move away from its usual brick-and-mortar structures to a new service known as "Mi Yone CB Kiosk" and "Mi Yone CB Tellers". The Mi Yone CB Kiosk is a low-cost digital outlet offering full-fledged banking services to the unbanked and underserved communities. Whereas the 'Mi Yone CB Tellers' is a digital branchless banking solution that is meant to increase penetration of basic banking services such as account opening, making deposits and withdrawals, checking balances, printing mini statements, and funds transfers. Basically, it targets the unbanked and therefore reaches their doorsteps. The banking application works on a mobile handset or tablet that is used by a teller to facilitate operations within or outside the branch or Mi Yone CB Kiosk.

Sierra Leone's leading financial institution, the Commercial Bank (CB), celebrated its 50th anniversary celebration in 2023. The CB has been serving as an engine for economic growth in the country, the bank has remained true to its vision of being the country's leading financial services provider, delivering value to all stakeholders. Today, the CB is celebrated as the most profitable commercial bank in the country, boasting thousands of active customers in the country and the diaspora with an ever-increasing client base. The bank continues to implement the governments financial inclusion policy by acting as an intermediary between financial services and the public, providing customized banking services and products. The bank has positioned itself as the ideal partner for foreign investors in Sierra Leone. Managing Director, explained during an interview, "The commercial bank (CB) is comparable with any other high quality banking institution around the world. We abide by international best standards. The total asset of the bank is well over €74.6 million, up 20% over in 2009. 2021 was also a very positive period for the bank in terms of balance sheet growth, income generation and profits".

The service offered at various branches and outlets includes accepting deposits in the forms of cash and cheques on behalf of customers, money transmission services, saving account, fixed deposits account, safe custody facilities and many others. The mission statement of the CB is to prove a full range of banking and financial service in a high quality and efficient manner to customers in all sectors to maximize return an investment to shareholders, thereby fostering growth and contribution to economic and social development of the nation and to be the number one bank in Sierra Leone. Some years ago, the Commercial Bank launched the Automated Teller Machine (ATM) installed at strategic locations to avoid the jam-packer banking hall and long queues in the various Freetown branches.

The bank has also established the on-line banking facility for customers at home or in their office. Customers can check their balance, transfer payment from one account to another, print statement of account and many more.

MATERIALS AND METHODS

Materials

Modern-day technology has greatly changed the business of banking operations in Sierra Leone. Commercial Banks in Sierra Leone have tremendously profited from technology innovative sciences in the form of information and communication technology (ICT) usage, which has positively impacted the performance of employees and stimulated customers' actions and reactions with the desire to keep doing business with these banks. The 2018 Information Technology Curricular Guidelines state: "IT in its broadest sense encompasses all aspects of computing technology. IT, as an academic discipline, is concerned with issues related to advocating for users and meeting their needs within an organizational and societal context through the selection, creation, application, integration and administration of computing technologies" [9, p.9]. Instead of using hard copies of documents, which was referred to as the old-fashioned way of banking operations; banks have shifted to computer-based soft copy programs with quality data security and the orientation of customer's confidential information. Computer application to business and commerce data from the middle world-war II led to economic expansion and rapid technological development throughout the industrialized world. Today, most large, and medium-sized companies are not dependent on their computers for numerous administrative functions. Increasing numbers of smaller concerns are pursuing computing for themselves whereas previously they made use of the services of computer bureaus or were not involved with computers at all.

In the future, the impact is likely to be even greater. Micro-electronic technology is enabling offices to function faster and more efficiently, and the cheapness of the technology means computing is within even the smallest business. As we look in the future of information technology, data security, and confidentiality services in the industry, it may be useful to revisit the root of banking. Banking theories provide us with insight into why banks exist in the economy. If these theories are correct, then it is because they perform certain special functions that no other financial services firms can replicate. The problems of information systems with quality data security development, which are complex have resulted in the development of several theories, explanations, arguments, and assertions (World Bank 2011).

Information Technology in the Banking Sector: Banks and financial institutions are now offering many services that benefit their potential and current customers in many ways. The management has now seen that with the technology they have to keep up with the times to keep the customers happy and interested in their products. Information Technology (IT) has also brought about stiff competition wars within the industry. Information Technology (IT) also aids the employees of the bank as well as the banks and financial institutions themselves. Operations are now automated making life simpler and easier. Telecommunication Mobile Operators, Internet Service

Providers (ISPs), computer hardware manufacturers, software developers, mobile device manufactures, and operating software manufacturers have all assisted in giving the banking sector the much-needed boost. Mobile devices meet the following criteria, having light operating software (mobile phones, smartphones, tablets, and Personal Digital Assistant (PDA) and being portable to carry out the services.

Problems of IT in Banking: Customers are at great risk of receiving fake Small Messaging System (SMS) messages and scams from hackers and scammers pretending to be the bank. The loss of a person's mobile device often means that the customer's information can be accessed unlawfully which is referred to as unintentional disclosure. To have a better experience with mobile banking customers need to have access to more modern mobile devices such as smartphones, and tablets. Some problems:

- ***Security and Risk:*** *Customers having little, or no idea of IT are susceptible to scammers. A customer receives a fraudulent email from a sender posing as a bank or financial institution. Requesting for the customer to send their bank account details. When a mobile device is stolen the customer is at great risk. Most customers automatically set their devices to save their personal information leaving the customers vulnerable to scammers;*
- **Compatibility:** Banks offer banking services to all customers; some customers are limited to the number of services offered as they do not have compatible devices by. Thus, the customer is limited to several services only with the constraint of the type of access they have;
- **Scalability and Reliability:** Banks need to ensure that banking systems are working for customers to access the service from anywhere and anytime. There can be a loss of customer confidence if banking services are not met continuously, found to be consistent with; and
- **Application Distribution:** Customers would expect that the mobile application would be updated, upgraded, and downloads are available. On the other hand, there are numerous issues to ensure that the upgrade, update, and downloads are implemented successfully.

Information Technologies and Applications used in Banking Sector: The technologies listed below are currently in use in the banking industry around the world. The technologies are still being utilized. The future will see more technologies being introduced and used in the developing and developed world. The advancement of technology will also assist in infrastructure advancements. Here is a list of some old and new technologies used in banking today.

- **Automated Teller Machine (ATM)**: The most visible form of electronic fund transfer about the Sierra Leone banking sector with the introduction of ATMs. The ATMs released banks from the constraints of time and geographical location, they presented banks with more economical substitutes for brick-and-mortar branches. ATMs are generally connected to bank computers by private lines, the branches are being linked by sophisticated computer-based systems, drastically cutting down transaction time and cost. ATM is a technology in use the world over. Money can be withdrawn from anywhere in the world. If withdrawn from another country or ATM a service charge will be issued for each transaction. The following are facilities available to the customer at the ATM; check their account balance, withdraw cash, mini statement prints out, money transfer with linked bank accounts, pre-paid mobile top-up, and credit card payment.
- **Mobile Banking**: Mobile Banking Application is the latest of technologies used in the banking sector that is offered to the customers. A customer must have a smartphone, tablet, or Personal Digital Device (PDA). An application is developed which must be compatible with Windows, Android, and other mobile phone operating software. The mobile application is downloaded straight to the mobile device. The customer must have an active Internet connection be it mobile data or Wi-Fi that they will be able to use on the go to be able to utilize mobile banking service. The features offered are balance inquiry, view of a mini bank statement, funds transfer, checking of recent account activity, create and update standing order and direct debit payments, finding the nearest bank branch and ATMs, and making payments. To use the service of mobile banking the customer must be registered for internet banking service, and they are given the choice of creating their password and memorable information. Mobile banking is a service that is offered free of charge. The customer must register using an active mobile line.
- **Internet Banking**: One of the older technologies, where mobile banking aimed to go paperless. One might remember the days when he/she physically went to the bank to deposit or withdraw, transfer, and even to get a bank statement book manually updated by a teller. Today, internet banking (IB) frees both bankers and customers of the need for proprietary software to carry on with their online banking transactions. A customer accesses their bank account online by using an active Internet connection and can access the account balance inquiry, make payments, funds transfer, international money payments, create and update standing order and direct debit payments and check recent transactions. The customer accesses the website via a personal computer or laptop and the account information can be accessed from anywhere in the world.
- **Secure Short Messaging Service (SSMS)**: SSMS banking is used for customers to send and receive text messages on their mobile phones. Banks keep records of the customer's mobile number; the customer can make inquiries on their bank account. A customer must register their mobile number to utilize the SSMS banking service through the bank. The bank also sends the customer messages about each transaction that has occurred on the account.
- **Mobile Money**: Also referred to as mobile wallet, mobile payment, and mobile money transfer. Mobile money service is used worldwide, mainly used in Africa for those with or without bank accounts. The service is provided by mobile network operators who are in partnership with commercial banks. The mobile money accounts can also be linked with a customer's bank account. The mobile money service is another way of banking money, without the hassle of opening a bank account. The money in the virtual "wallet" can be used to pay for anything for example buying mobile credit, payment of bills, goods, and services rendered. The service is at a cost to both the sender and receiver. Mobile Money customers have a virtual wallet where their funds are kept, they deposit, make payments, and withdraw from funds.

Data Security and Confidentiality in the Banking Sector: Data Security is very keen in the banking institution to:

- To maintain customer information privacy;
- To protect data from unauthorized access and retrieval;
- To protect data from potential corruption and loss;
- To prevent unauthorized hackers not to alter the credibility of the information;
- To build trust between customers and providers; and

- To ensure that Personal Identifiable Information (PII) is not disclosed to unauthorized persons.

Confidentiality: Banking activities in the business process, a large quantity of basic customer information, transaction information, and other information derived from the bank based on cost control considerations tend to slack protect customer information, customer information may even be seeking to take advantage of the phenomenon of illegal benefits. Banks are based on credit, once the customer on the banks generates a credit crisis, it will affect the healthy development of the financial market. Therefore, the bank-client confidentiality obligations related to the healthy development of the financial markets are important, we must be given adequate attention, which is the topic of practical significance.

Confidentiality is an assurance of promise not to release any information in any way that will allow the person or establishment to be identified publicly. Everyone in the institution is responsible for customer's Personal Identifiable Information (PII). Personally identifiable information (PII) refers to data that can be used to identify, locate, or contact individuals or establishments, or reveal the characteristics or other details about them. It might consist of direct identifiers, such as the name, address, or other information that is unique to an individual, or indirect identifiers such as extreme age, unusual occupation district or chiefdom, or information from other sources such as work roster, etc. The principle of banking confidentiality is significant and is located at the heart of all human, legal, and commercial transactions. Also, there is banking confidentiality of a different nature, linked to the confidentiality of individuals, and the country's economy in general.

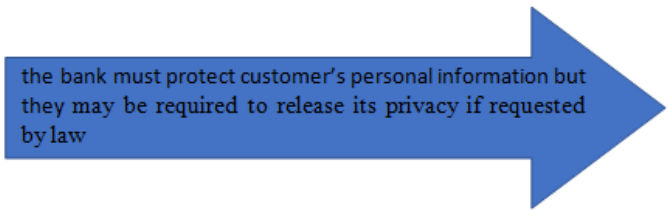
In the banking sector there are principles of confidentiality:

- Access customer's information only if there is a 'Need to Know;
- Discard confidential information appropriately – (for example, locked trash bins or shredders);
- Do not discuss confidential matters where others might overhear (for example in the cafeteria, elevator, etc.);
- Do not leave customers' information charts or files unattended;
- Release customer's information only to authorized persons (doctor, family, immediate supervisor, etc.); and
- Report suspicious activities that may compromise customer's confidentiality to the authorities.

Privacy: Banks also have obligations under the Privacy Act 2020, which contains 13 privacy principles about personal information. In the banking sector, these principles govern: the disclosure of personal information:

- Banks' collection and storage of customer information;
- Customers' rights to access and correct information about themselves; and
- The disclosure of personal information.

Privacy



Source: *Developed by the Researcher, September 2023*

Security: Protection of customers' information can be of two types; physical security and electronic security.

- **Electronic Security** – Electronic Data security is a plan to protect the data within the best practices of the IT framework and institutional regulatory compliance with the use of technology equipment and software tools to protect your data stored on electronic devices. Data Information of both qualitative and quantitative values that represents objects, ideas, etc. Information Technology (IT) personnel should be involved in both the formulation and implementation of electronic data access security policies; and
- **Physical Security –** This is the most paramount for data security because most times it's often overlooked, its importance is underestimated.

Theoretical Framework and Literature Review: For almost a century, innovators have been debating on the role of the financial sector in the process of technology development. Schumpeter (2013) put forward an argument pointing at the productivity- on growth-enhancing effects of the services provided by a developed financial sector; a considerable amount of theoretical literature has emerged. Initially, this literature focused on the question of whether computerization, data security, and confidentiality are of essence or plays a causal role in banking institutions. Even though this pioneering work broke ground to change the direction of thinking, the causality question has remained an important issue in the theoretical debate over time.

In essence, therefore, it is also important to make a quick analysis of the most fundamental development theories in existence since development computer literates became established as a discipline in the 1950s. As discovered by all the literature read, the demand for mobile banking has increased worldwide but a small percentage of people utilize the service. Thus, prompting banks, micro-finance institutions, software houses, and service providers to offer the services to existing and potential customers of information technology in banking services within developed and developing countries. The banks, micro-finance institutions, software houses, and service providers are to ensure they are to make potential and existing customers aware of the huge benefits that are involved with information technology and data security in the banking institution. Theoretical models were used to attain information on different customer's perceptions of the acceptance of banking by Chitungo, S.K., & Munongo, S. (2013), using the Extended Technology Acceptance Model (TAM). The Commercial Bank's core value is continuous commitment guided by their fundamental core principles and values. They are actively revitalized with the following; team ethics, integrity, and commitment driving customers' success insist on excellence, creating a climate of openness, trust, and personal values.

The CB is expected to nurture customers' strengths and values their perspectives, and in return expect the customers to share their passion for effective and efficient service delivery. A very significant aspect of their developmental approach is to provide their staff with international experience in line with the employees' career aspirations, skills, experience, and strengths. They believe to feel different from other organizations; as their work atmosphere is relaxed but highly professional, research-driven, and very much connected to real events in the economy. Their vision is to market leader in financial services, while their mission is endurance and, in the medium, and long-term strategic focus and direction, thus; their mission is restated to 'A leading financial services provider delivery value to all stakeholders.

Concept of Technology: The concept of technology can be referred to as the knowledge acquired for the accomplishment of an assigned task. Technology deals with the expertise and essential procedures needed to execute those assigned responsibilities in a specific situation. Information technology deals with computers and their operations, telecommunications networks, and multimedia applications (Frenzel, 2013). According to Frenzel (2013), information communication technology came into proper use in the 1980s which replaced the use of Electronic Data Processing (EDP), Management Information Systems (MIS), but these two devices named are still in use by many banking institutions around the world. It is interesting to know that the use of information communication technology (ICT) has gone beyond the responsibility of just supporting services in banking institutions, its usage is now everywhere in the world. The devices sued in ICT with special reference to internet usage in the World Wide Web (WWW), and now the excessive use of email services have just added more strength to the early means of communications, like telephones or fax, etc. Adeoti (2015) added that other ICT equipment like data recognition equipment, factory automation hardware, and services, telecomputing being utilized in real-time for effective and efficient delivery of services.

The idea of the introduction of technology in the banking industry is a noteworthy endeavor in the ease of life of mankind. Information is the apparatus used to enhance world growth through technology. After almost about four decades in the application of computers, daily processing of data in the storage and retrieval of data has enhanced improved development in human life. This development has ignited developing nations like Sierra Leone to not be left behind by joining other nations that strive for growth to reach up to a higher height in the modern use of information technology in its institutions, including the banking sector. Ovia J. (2017) added that this modern technology usage has fetched a greater change in modern society that has transmuted most banking industries. David R. (2015) asserted that there had been reasonable transfers from the issues of cash to the digital monetary transaction with customers. The benefit cash allure as the worth of customer transaction has increased considering that, the use of digital banking reimbursement has increased with rising worth, as this type of service delivery in the banking sector has led to the rapid increase in the influx of customers wanting to be part of the information technology banking system. Had it not been for the improvement of information and communication technology (ICT) in the banking industry in Africa and the world at large, the service delivery in the banking sector would not have been as swift and easy as it is now.

Information and communication technology has modernized the banking procedures for the payment and withdrawal of cash within and without a country. Cashiers nowadays are given the necessary training and expertise to give out slips for deposition of cash transactions, as well as withdrawal processes. The mandate customers give to banks in the draft of the cheque to make payment to third parties has widely been done through computerization. In the 18th and 19th centuries in Africa and most other parts of the world, the movement of huge cash from one bank to the other was made boring. These days, money moves most of the time through digitalization. Ovia J. (2017) asserted that the modern technology and performance augmentation in the banking system sector has moved the huge amount of money from point 'A' to point 'B' easier, as it is done in bits and bytes due to satellite transponders, fiber optic cables or regular telephone lines. In addition, in the banking industry, the modern methods of money transaction have not only created challenges for management to adapt to the new technology, but also created many opportunities to successfully utilize the technology.

Stan M. (2014) in his contribution defined electronic payment as a system of payment in which transactions take place electronically without the use of money. He also added that electronic payment is a system that is computerized using information technology where banking transactions are done within and without banking halls, and not necessarily at the customer's branch. Information technology since its existence has been the key reason for banking institutions' improvement of the electronic system to enable customers' access easy delivery of banking services. Mobile devices, wireless networks, etc. are part of banking operations today because of information technology with the aid of mobile telecommunication devices. These days cards are what bankers use to identify customers, and sometimes use the machine to introduce documentary or electronic payment of cash to customers. Currently, in most countries, monetary institutions give out credit/debit cards created to aid customers easily transact business easily and successfully. Debit cards are those computerized cards used to suitable payment of cash to the bank; as compared to credit cards which are those cards given to customers to enable them to access their monies as and when they want to.

The modern corporate environment is lively and going through swift dynamism, due to technological innovations, improved consciousness, and the need for customers. Corporate organizations like the banking industries in this generation function in a very complex and highly impulsive economic environment. Laudon and Laudon (2015) opined that Information Communication Technology (ICT) is at the center of this global change curve and added that the managers of these financial institutions can never disregard the directives these Information Communication Technology (ICT) gives in its application to enhance success in the dispensation and recording of data processing. Laudon and Laudon (2015) continue to contribute to the debate that Information and Communication Technology (ICT) has provided self-service facilities, using automated customer service machines from where prospective customers can complete their account opening documents directly online. Customers these days using information communication technology can now check their accounts wherever they are to access their financial statements without going to the banks for such information with their mobile phone devices.

In Sierra Leone, the CB, and a lot of other private commercial banks, can now allow their numerous customers to purchase items online, using their mobile phone devices with connection with their various banks successfully. Customers can now pay their electricity meter bills using their accounts with their banks through applications installed in their mobile phone devices successfully, and immediately after a successful transaction, an alert comes in the phone with information of the transaction. Information and Communication Technology aids customers in the authentication of their account numbers and receive their check books, credit, and debit cards. Laudon and Laudon (2015) contributed that technology in communication deals with the physical devices and software that link various computer hardware components and transfer data from one physical location to another. He added that ICT products in use in the banking industries included ATMs, Smart cards, Telephone Banking, MICR - Magnetic Ink Character Recognition technology, Electronic Fund Transfer Electronic Data Interchange, Electronic Home and Office Banking, etc.

The Novelty of information technology, data security and confidentiality in Banking Institution: The concept of novelty or innovation was deliberated on by Joseph Schumpeter, an Austrian economist (1883-1950), who believed that an entrepreneur could earn economic profits by introducing successful innovations or new ideas. His theory of profit posits that the main function of an entrepreneur is to introduce new ideas that will enhance profit in the

form of a reward that is given for performance. He was popularly known for his theories of capitalist development and business cycles, and his views on the importance of entrepreneurship and innovation. Schumpeter discerned between entrepreneurs who create innovations and bankers who invest in these innovations. Schumpeter J. A. (2013) believes that bankers are branded as "the monetary complement of innovation" who prioritized their responsibilities in credit creation. Bankers should be known for their expertise in assessing if a business venture will succeed or fail. If their evaluation comes out that a business venture will succeed, then they will fund it and vice visa. Schumpeter emphasized the significance of bankers' responsibility in funding innovative ideas.

In this 21st century, banks' responsibilities are not just to credit business ventures but to be modern using technologies to stay and be at the top in competitiveness, in the changing, intricate, and competitive environment. Ovia J. (2017) asserted that financial activities in this 21st century can never be implemented without an innovative information system and technology in the banking industry, which will enhance the delivery of standard superior services with very minimal efforts by the banking institutions and augment a significant performance of the banking sector. Changing the needs of customers, the progress of technology, and the pressure of competition had forced banks to look for the sources of competitive advantages, shifting their focus towards innovation. Laudon and Laudon (2015) opined that technological innovation is the leading force of competitiveness and durable growth in organizations and further asserted that the innovation all the contributors are making mention of has to do with new technology, new working methods, and new business models for the banking industry.

Saeidizadeh *et al.,* (2013) in their investigation, came out that the issuing of delivery of modern methods in providing banking services is a crucial aspect in the improvement of performance, fascinating new customers to satisfaction. The researchers further exhibited the significance of information and communication novelty as the means to banking success. In support of Saeidizadeh *et al.,* (2013) proposition, Hobe I. and Alas R. (2016) inveterate the significance of technological innovation as the elementary factor in the competitive advantage in the banking sector. Notwithstanding, Hobe and Alas further asserted that the achievement of novelty is obscuring to be talking about in the service sector as it happens throughout the industrial process. The actual gain in competitiveness for the banking sector is the ableness of the banks to serve customers with a faster procedure that has to do with customers contacting the banks with a high-security level in place, with no difficulty of customer defection. The main task novelty performs is to fascinate emerging customers and make comfortable those that are already doing business with the banks. Currently, the use of astuteness in competition, in the management of technology by the banks seems to be a very significant instrument for the achievement of operational objectives. Due to the involvement of novelty technology in information and communication in the banking industries, as it aids in the improvement of banking services and operational cost efficiency; with very few employees and less establishment of branches. The use of information communication technology reduces the cost of the transaction by accessing customers with the needed capacity to perform their banking operations anywhere and at any time.

Impact of ICT on the Banking Sector in Sierra Leone: Sierra Leone is a very low country in financial development. The country has thirteen commercial banks; source (Financial Sector Reform and Development in Sierra Leone), including the CB which is under investigation. The CB has branches everywhere in Sierra Leone, whereas not all the foreign banks have branches across strategic locations in the country. Nowadays, the banking system has experienced a massive revolution which has brought about turnaround performance in the survival, growth, and behavior of the banking industry. The reforms were focused on ease of banking, guaranteed competition, and positioning the banking industry to carry out the role of financial intermediation and economic development. Information and Communication Technology (ICT) is the driving force that has contributed to the ease of banking activities and transactions in Sierra Leone. Among all the banks and financial institutions in Sierra Leone, none of them operates without the excessive use of information and communication technology. In Sierra Leone, the sudden change in the use of information communication technology in the banking sector has set the stage for the first time to increase the activities across the country.

The improvement of technology and the growth of global networks have remarkably reduced the cost of transfer of funds within and outside the country through the banking sector in Sierra Leone. It is information technology that has enhanced banks in Sierra Leone to meet the demanding high expectation of customers, who are more understanding as compared to those customers that have transacted banking businesses before the evolution of information communication technology. The customers these days want to access immediate, all the time, and everywhere banking facilities. The expansion of IT into the banking industry has taken such a very high level in application and usage that the possibility is very slim for banks in Sierra Leone to manage their information technology implementation on a stand-alone basis with the uprising of information technology, where banks are progressively interrelating their IT soft and hardware equipment across the country. Due to the above, information communication technology systems and networks are now visible to the increasing numbers of customers and banking operations. As promising the evolution of technology becomes in Sierra Leone, so it has controlled the banking industry, which impacts can be looked at in these categories:

- Information Communication Technology has influenced a high level of competition amongst banks in terms of the delivery of services;
- Technology has opened new products and services, new markets, and effective and efficient delivery of services in the country;
- Information technology has provided the framework for banking industries to meet challenges in the present competitive environment;
- Information technology has also enabled banks and financial institutions to cut the loss of global fund transfers;
- The rise of the internet and mobile banking has made banking even more convenient for customers; and
- Banks have taken advantage of information and communication technology development by offering different types of products, like online savings in-branch and online fund transfers, etc.

Empirical Literature Review: Many studies have focused on the information system in the financial sector in Sierra Leone generally, and the CB to be specific. However, none of these studies provided direct information on measuring the effectiveness of information technology and data security in financial institutions to the development of the country. The role of financial institutions in promoting economic growth and development in the country is widely discussed in this part of the literature.

Early economists, such as Schumpeter, identified the importance of banks in facilitating technological innovation through their intermediary role. He believed that efficient allocation of savings through identification and funding of entrepreneurs with the best

chances of successfully implementing innovative product technologies and data security processes affects development growth, stagnation, or even decline in any technology system globally. Various studies have shown that there is a strong positive relationship between the financial sector and technological growth.

Information system has long been recognized to play an important role in banking sector of development. Information communication technology literature has provided support for the argument that countries with better or efficient computerization systems with adequate data security and confidentiality grow faster while inefficient monetary systems bear the risk of bank failure. In a further review of the information communication technology literature, the findings were that better functioning technology systems ease the external operating constraints that prevent firms and industrial expansion. Banks accept deposits from individuals and institutions thereby transferring funds from the surplus sector to the deficit sector of the economy. The management information system serves as a catalyst to economic development through various institutional structures. The system strongly seeks out and attracts easy ways of savings for households and government for investments projects and other purposes with a view of getting quality data security.

Hobe I. and Alas R. (2016) in a review of the various analytical methods used in information communication technology literature, found strong evidence that management information system development is important for banking growth and development. To them, it is important to motivate policymakers to prioritize technology sector policies and devote attention to policy determinants of technologies, data security, and confidentiality development as a mechanism for promoting growth. In assessing the relationship between management information system development and data security growth, many recent empirical studies have relied on measures of the size or structure of financial institutions to provide a link between information technology system development and the quality of data security growth/development. They used macro or sector level data such as the size of technology intermediation or external finance relative to gross domestic product (GDP) and found out that information system development has a significant positive impact on the economic growth of a country. Despite countervailing views in Sierra Leone, but there are lot of evidence that a developed information technology system positively influences real economic growth activity. Sierra Leone's financial system, like those of other developing countries, sub-Saharan Africa has over time remained weak and a cause for concern to policymakers.

In conclusion, therefore, the theoretical, and empirical literature on measuring the effectiveness of information technology systems, data security, and confidentiality in the banking sector development are hard to come by in Sierra Leone.

Research Methodology

The head office of the CB has over one hundred employees of which some of them were targeted at senior and middle levels - 20 clerical staff, 10 managerial staff and 22 customers of the bank. Thirty (30) employees and twenty-two (22) who are au fait with the operations of the bank especially the technological deployment. The target population is the total group of individuals from which the sample might be drawn (Saul McLeod 2019). The target population were selected using random sampling techniques and are individuals who deal directly and indirectly with the banking systems. Data sources are broadly classified into primary and secondary data. Primary data means original data that has been collected specifically for the purpose of this study meaning the data was collected from the original source first hand. Secondary data is a data that has been already collected by and readily available from other sources (Manu, 2013). For the purpose of this study, the secondary data collection include – relevant textbooks, journals, internet website, the bank's annual performance reports since the deployment of technology, financial magazines, newspapers, paper presentations and the Internet. For primary data collection, qualitative and quantitative methods were used through the use of questionnaire administration and direct interviews. This will help the readers to understand the different variables and issues that are involved in this study. Two methodologies were used for this study – pre-survey and actual-survey interviews with the three categories of targeted respondents i.e. senior level and clerical staff and customers of the commercial bank (CB). A field survey, which entailed the administration of questionnaire after all recommendations on errors were taken into consideration from the pre-survey in order to increase the credibility of the questionnaire. The pre-survey interviews lasted for 5 working days while the field survey was conducted on another 10 working days at the bank's head office – in March 2024. The primary data were collected using the structured questionnaire, which comprised seven sections - section A deals with the demographic features of the respondents; section B focuses on the extent to which the adoption of information technology influences performance in the Sierra Leone banking sector; section C focuses on the extent to which information technology influences the performance of staff in the Commercial Bank; section D deals with the examination of the technological factors that can enhance the growth of commercial banks; section E deals with establishing the relationship between ICT and staff performance in the commercial bank; section F focuses on the extent to which staffs are aware of data security and confidentiality in the CB; and section G focused on the examination of data security and confidentiality that can enhance the growth of Sierra Leone banks. The questions comprised Likert scale type, closed- and open-ended questions that provided answers to the research questions. A final sample size of fifty-two was obtained from properly and completely filled questionnaires. After the collected data have been coded, edited, compiled and computerised, it was analysed using SPSS version 25 to analyse the questions and statements therein.

FINDINGS AND DISCUSSIONS

Analyses of Data from the Literature Review

Results from the Theoretical Literature Review: There have been different theories on information technology growth and development of a country. For sometimes now, information technology specialists have been debating on the role of technology and data security process of growth development. In support of Saeidizadeh *et al.,* (2013) proposition, Hobe I. and Alas R. (2016) inveterate the significance of technological innovation as the elementary factor in the competitive advantage in the banking sector. Saeidizadeh *et al.,* (2013) in their investigation, it came out that the issuing of delivery of modern methods in providing banking services is crucial aspect in the improvement of performance, fascinating new customers to their satisfaction. He pointed out the essence of information technology in the banking sector and saw that data security could create more productive processes.

Olanrewaju B. E. (2016) added that ICT aids customers in the authentication of their account numbers and receive their check books, credit, and debit cards. Laudon and Laudon (2015) contributed that technology in communication deals with the physical devices and software that link various computer hardware components and transfer data from one physical location to another. There is every indication of technological progression and innovation having huge

contribution to the growth of national economies and businesses over the last ten years. The innovation that all the contributors made mention of has to do with new technology, new working methods and new business models for the banking industry. Schumpeter (2013), for example, put forward argument pointing at the productivity-on-growth-enhancing effects of the services provided by a developed financial sector. He pointed out that a sound and efficient financial sector has a positive relationship with the technology growth and development of a country.

A considerable amount of theoretical literature has emerged since Schumpeter's proposition. Initially, these literatures focused on the question whether information technology, data security and confidentiality are of essence to the growth of financial sectors. The causality question of whether information technology promote growth and development has remained an important issue in the theoretical debate over time. Also, from an international dependence point of view, underdevelopment of confidentiality and data security exists because of the lack of awareness. According to this theory, developing countries are far ahead with the awareness of confidentiality especially data containing Personal Identifiable Information (PII). To achieve this progress nationwide, government should enforce stringent rules of data security and confidentiality.

Results from Empirical Literature Review: Although many studies have focused on information technology, data security and confidentiality in financial sector of Sierra Leone in general, and the CB, the results from the empirical investigation show that none of these studies have provided direct information on measuring the effectiveness of financial institutions such as the CB in the development of the country.

From an empirical standpoint, therefore, the results were also mixed. Schumpeter identified the importance of banks in facilitating technological innovation through their intermediary role. He believed that efficient allocation of the awareness of data security and confidentiality to staffs through different trainings will aid chances of successfully implementing innovation product and processes.

In conclusion therefore, various studies have shown that there is a strong firm positive relationship between the information and data security in financial sector growth.

Data Analyses from the Questionnaire

Results from data collection (personal interviews and self-administered questionnaires) are also discussed here. A total number of 60 questionnaires were given out, 52 questionnaires were responded to and duly received and, 8 questionnaires were not responded to. Therefore, the non-responsive rate is 13.3%.

Demographic Characteristics: Every question/statement on each questionnaire was thoroughly checked for different types of errors before they are entered for analysis. If, in the process of identifying errors a questionnaire is found to have some missing data, the questionnaire was either rejected or accepted based on the tent of the errors. The questionnaire comprised seven (7) sections. Data were obtained from 52 respondents out of 60 questionnaires circulated; representing 87% response rate. The 13.3% non-responsive, improperly and uncompleted questionnaires were not considered for the analysis. The demographical factors revealed that majority of the responsive respondents were female (59.6%) while the rest were male (40.4%). This disproportion in the gender of respondents could be as a result of the fact that more women are recruited in the banking sector across the country. The analyses revealed that 42.3 % of the respondents are between the age of 22 – 28 years, 34.6% of them are between 29 -35 years, 17.3% of them are between 36 – 44 years and while 5.8 % are 45 years and above, this implies that there are more staff under the age of 45years in the organization. The result on the marital status of the respondents revealed that 55.8% were single while 44.2% were married. On the educational qualification of the respondents, the analysis showed that all the respondents are educated and the least educated (15.3%) with diploma have basic knowledge and understanding of the topic of study, 48.1% have higher national diploma (HND), 23.1% have first degree while 13.5% have master in business administration (MBA).

RQ1: Assessment of information technology on data security, confidentiality and organizational performance within the banking institution in Sierra Leone over the period of years under review - 98.1% of the respondents agree that information technology adoption has influenced staff performance in Sierra Leone Banks, while only 1.9% of the respondents disagreed. This implies that information communication technology has indeed influenced staff performance in Sierra Leone banks. 92.3% of the respondents strongly agreed that greater percentage of the employees/employers appreciates information technology, while only 7.7% respondents disagreed. This implies that greater percentage of employees and employers appreciates information communication technology in the organization. On whether the commercial bank is using ICT to satisfy customer demand for quality services, 88.5% respondents strongly agree that junior worker makes use of Information Technology, while 11.5% disagree. This implies that information and communication technology has indeed been used to satisfy the demand for quality services and products in the banks.

RQ2: The importance of information technology on data security, confidentiality, and organizational performance within the banking institution over the period under review - 96.2% of the respondents strongly agree that ICT and data confidentiality have helped to improve the skills of workers within the banking institutions while 3.8% of respondents fairly agree. This shows that information communication technology, data security and confidentiality is indeed a vital tool in staff skills acquisition. On the extent to which ICT and data confidentiality have increased staff productivity based on the automated processes in the organisation; 96.2% of the respondents agree that the awareness of data security, confidentiality and information communication technology has improve the skills of workers in the organization, while 3.8% of the respondents disagree. This implies that information communication technology has indeed increased staff productivity with the introduction of automated processes within the organization. On the extent to which the advent of ICT has reduced the rate of repetitive works and errors, 90.4% of the respondents agree that ICT has reduced the rate of repetitive work in all areas of banking processes, while 9.6% of the respondents fairly agreed. On the extent to which data confidentiality and ICT have enhanced the rate of communication and interaction; obviously, an overwhelming majority 100% of the respondents strongly agreed that information technology has ease the rate of communication and interaction within the organization. This implies that ICT and data confidentiality have totally enhanced the rate of communication and interaction within the organization. The enquiry into ICT being a tool for staff learning and development in the bank, 98.1% of the respondents agreed that ICT is a tool for learning and development in the CB, while 1.9% of the respondent disagreed. This implies that ICT is readily acceptable as a tool for staff learning and development within the organization. Moreso, 84.6% of the respondents strongly agree that information technology has exposed the ignorance of many workers, while 15.4% of the respondents fairly agreed. This implies that data confidentiality and information communication

technology has indeed exposed the ignorance of many workers. On the extent to which ICT and data security have reduced stress and workload, 80.8% of the respondents agree that information technology and data security have reduced stress and workload, while 19.2% of the respondents disagreed. This implies that ICT have made work to be not just something we do at a certain time or place; work can be anytime, and anywhere.

Research Testing: In testing the hypothesis, H0: The assessment of information technology on data security, confidentiality, and organizational performance within the banking institution in Sierra Leone over the period of years.

Test Instrument:
Chi – square
Formula for Chi – Square = $X^2 = \sum (o - E)^2 \div E$
Where = X^2 = chi – square

$\sum$= *summation (sigma)*
O = Observed frequency
E = expected frequency.

Assumptions

1: Level of significance
2: E is distributed equally among all responses.

To find the Degree of freedom (DF)

DF = (R -1) (C -1).

Where R = Number of Rows in the contingency Table
C= Number of Columns in the contingency Table.
DF = (4 – 1) (4 – 1) = 1x1 DF = 3

Decision Rule: Accept Ho, if calculated value is less than or equally to the table value, otherwise Reject.

Response	O	E	O - E	(O – E) 2	(O-E)2/E
Agree	16	13	3	9	11.31
Strongly Agree	34	13	22	484	37.23
Fairly Agree	1	13	-11	121	1.69
Disagree	1	13	-12	144	1.69
Total	**52**	**52**			**51.92**

Calculated value = 51.92
Table value = 3.84

Since the calculated value is higher than the table value 51.92 > 3.84, the Researchers reject the H0 (Null hypothesis) and accept the HI (Alternative hypothesis) this entails that the important of ICT has significant effect on organization performance in the Sierra Leone Banking Sector.

H0: The importance of information technology on data security, confidentiality, and organizational performance within the banking institutions in Sierra Leone over the period of years.

Test Instrument:

Chi – square
Formula for Chi – Square = $X^2 = \sum (o - E)^2 \div E$
Where = X^2 = chi – square

$\sum$= *summation (sigma)*
O = Observed frequency
E = expected frequency.

Assumptions

1: Level of significance = 5% 0r 0.05
2: E is distributed equally among all responses.

To find the Degree of freedom (DF)

DF = (R -1) (C -1).
Where R = Number of Rows in the contingency Table
C = Number of Columns in the contingency Table.
DF = (4 – 1) (4 – 1) = 1x1 DF = 3.

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Since the calculated value is higher than the table value 51.92 > 3.84, the researchers reject the H0 (Null hypothesis) and accept the HI (Alternative hypothesis) which implies that there is significant impact of (ICT), data security and confidentiality on staff performance in the CB.

Summary of Findings: Information and Communication Technology has already become the nervous system of the banks all over the world. As we move into the new era, Sierra Leone banks will become uncompetitive if they do not have the means to deliver their banking services online and in real time across all their branches within the country and abroad. They need to invest a lot more on Information and Communication Technology both in terms of installed base, staffing and training of Information and Communication Technology staff, as well as the training of all categories of the bank staff to become (ICT) literate.

This study was conducted in order to investigate the Impact of Information and Communication Technology on staff performance in Sierra Leone Banking Sector. However, based on the data analysis and findings from the case are stated thus: the research brought to light the fact that IT has been of great impact on the Commercial Bank and other commercial banks in Sierra Leone. The findings both from the questionnaires and the observation research revealed that IT leads to saving the time of the customers and the employees conspicuously, cutting down the expenses and facilitating the network transactions.

- First, in providing answers as to the level of service improvement of the CB, (85%) of the respondents strongly agree to the perception that the services of the CB are good. In addition, (10%) agree that the services of the CB are much better. A minority of (5%) fairly agree and disagree that there has not been any improvement in the level of service improvement of the CB;
- Second, another important question as to staffs' awareness of data security of customers personal identifiable information (PII) in CB. In response to this, hundred percent (100%) of the respondents interviewed and the response of data security was quite impressive;

- Third, the findings to the question on the level of ICT as a learning tool in the CB delivering to customers was also strongly agreed upon with (100%) response;
- Fourth, respondents hold different perceptions on the level of satisfaction on confidentiality of customers Personal Identifiable Information (PII). The response was not satisfactory; and
- Finally, by overall service satisfaction of information data security and confidentiality effectiveness in the CB was quite impressive. Information technology has made tremendous positive impact in the banking sector.

From an empirical standpoint, therefore, the results were also mixed. Schumpeter identified the importance of banks in facilitating technological innovation through their intermediary role. Many of the bank customers enjoy efficient and prompt service delivery by the bank because they can perform many transactions without visiting the bank physically, and this is done via the use of information technology into banking operations. The use of technology internet banking and other component of IT has therefore brought about ease and convenience to effectively make financial transactions by customers.

The adoption of information technology with the use of data security and confidentiality by banks in Sierra Leone has brought about enormous change in the bank with a better and wider range of services since then. In doing this, they evolve appropriate structures necessary for the intermediation role which they perform.

In conclusion therefore, various studies have shown that there is a strong positive need of information data security and confidentiality to the development and growth in the financial sector.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Development in technology with specificity in the expanses of information and communication technology has transformed, and still transforming the techniques used in corporate establishment in Sierra Leone. Considering the above, Sierra Leone has experienced changes in the way of employment, business relationships among organizations, and the way these organizations are linked with one another within and without. Sierra Leone has created the stage for the banking market environment to change drastically. It is for this reason that the banking industry in this country, as have started, to continue, investing huge capital in ICT to further enable the public and private sector banks in the country to be global in their approach in banking services.

By implementing technological diversification, this has contributed greatly to impacting the input and value of the Sierra Leone banking procedures. According to the result of this study, it came out clear that the novelty of technology in Sierra Leone has positively impacted the performance of the banking industry in the country. ICT usage at the CB in Sierra Leone has to a greater extent made customers satisfied, created impartiality and return on investment.

However, it also came out clear from the study that there is strong relationship between information and communication technology (ICT) and staff performance. There is no doubt that information technologies have made a significant penetration into the banking sector. The banking operations in Sierra Leone are still facing some challenges, as customers sometimes stay long in queues to access quick services, especially during the end of months when salaries are being paid. When customers result to using the ATM, it most often not in use, as it undergoes maintenance.

The analysis showed that the CB has embraced the ICT ideology and have extensively applied ICT into their operations over the years. It further shows that most bank operations today are informed by the availability of ICTs and that increased adoption of ICT by banks have positive impacts on their operations towards customers and staff. Based on the findings of this study, it can be concluded that ICT has positive effect in the banking sector.

Recommendations

Knowing full well that information and communication technology, data security and confidentiality cannot be separated from the banking sector due to its immense contributions to the banking sector and based on the respective responses gathered from the sample and contribution from respondents.

Recommendations to Management of the CB

The researchers therefore make the following recommendations to the institution with the intent that if adopted would have positive effects on the banking sectors;

- The banks should improve more on its information technology to enhance staff productivity;
- There should be capacity building training on the awareness of confidentiality for staffs;
- The use of (ICT) in the banking sector should not only be restricted to the cities alone, but rural banking should also be improved upon;
- From time to time there should be in-house and external trainings for staff on new concept and technological development in the world of ICT;
- From time to time there should be enlightenment given to the public through the various media on how to use some of the (ICT) equipment's like the smart cards, ATM etc. and its importance should also be made known to the public; and
- Staff should be used side by side with ICT rather than reducing human capital which will in turn lead to unemployment in the country.

Recommendations to the Government of Sierra Leone

An important finding from this was that the CB as a hundred percent (100%) indigenes and government owned financial institution mostly concentrates on the financial side of the business rather than focusing on capacity building for the staffs on data security and confidentiality. Therefore, government needs to pay more attention on empowering the staff's knowledge for the protection of the customers' personal identifiable information (PII).

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