

# A study on the Impact of Information Technology on the Performance of Sierra Leone Public and Private Sector Banking Industry: Comparative study of Sierra Leone Commercial Bank (SLCB) and Zenith Bank of Sierra Leone (ZBSL)



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**Abstract:-** Commercial Banks in Sierra Leone have tremendously profited from technology innovative sciences in the form of information communication technology (ICT) usage, which have positively impacted the performance of employees and also stimulated customers' actions and reactions with the desire to keep doing business with these banks. This piece of work studied the reactions of both employees and customers towards the application of ICT by commercial banks and the outcome of the performance of these banks. The research used two major commercial banks as case studies to represent both public and private commercial banks in the country. The only public commercial bank, the Sierra Leone Commercial bank (SLCB) and the Zenith Bank Sierra Leone were used to represent all the commercial banks within and without the capital city, Freetown. Three null hypotheses were created according to the questionnaire shared to the two banks, to test if there is no scientific connection between technology innovation, customers' satisfaction and employees' performance. The research used a software application known as KoBo Collect Tool Box to share the questionnaire with the two banks. The research used 199 responses from the many responses that came from the banks' employees and customers. The Chi-square was used to test the hypotheses, and regression analysis and ANOVA were used to test the linearity of high levels of

automation of banking service in Sierra Leone. The result shows that innovative technology has influence on employees' performance, customers' satisfaction that leads to increase in bank profitability. It recommends the banks invest hugely on ICT for efficient management of technological innovations.

**Keywords:-** Information Communication Technology (ICT), Performance, Sierra Leone, Banking Industry, Sierra Leone Commercial Banks (SLCB), Zenith Banks Sierra Leone (ZBSL).

## I. INTRODUCTION

Technology is the sum of the techniques, skills, methods, and processes used in the production of goods and services for the accomplishment of objectives (Liddell, et al., 1980). In the last ten or more years, technology, specifically information technology (IT) had been at the core of global competitiveness, and that have a profound influence on all fields of pecuniary, which has been cohesive into lots of manufacturing activities. Nevertheless, there have been challenges in determining the nexus between investing in information technology and performance of financial productivity of institutions like the banking sector. In light of that, some writers have doubted the influence of technology on the productivity in the

banking sector. This doubt came about when Robert Solow won the Nobel Prize in economics in 1987, where in his speech was quoted saying “You can see the computer age everywhere, but in the productivity statistics”. A statement he made that ignited researches in Europe and USA that brought about different accounts. Since then, studies evaluating the effect information technology (IT) has on banking investment had started (Romdhane, S. B., 2013).

According to Romdhane, S. B. (2013), the idea of financing technology in contribution to the performance of an institution has been looked at a lot of times, and experts agreed that there are challenges that have emerged. Romdhane, in his research have confirmed that a lot of studies have been conducted about the relationship between productivity and information technology investments in an attempt to comprehend the elucidation behind the “production paradox”. Contradictorily, some researches were conducted to explicate the ineffectiveness of (IT) in improving the performance of banks. Those that doubted the effectiveness of technology in development of the performance of banks were; Loverman (1994), Morrisson and Brendt (1990), Licht and Moch (1990), and Oluwagbemi, Abah and Achimugu (2011). Furthermore, some researchers have found the effective relationship between (IT) investment and the productivity of a banking industry, among which are; Lichtenberg (1995), Brynjolfsson and Hitt (1996), and Prasad and Harker (1997).

A lot of writers have investigated the outcome of investing on information technology has on the efficiency of banks, however, not many economics have shown curiosity to investigate on the outcomes these investments have on productivity. Among these researchers, Licht and Moch (1999), and Prasad and Harker (1997) in their studies resolved that there was no relationship between information technology investments and bank profitability, but Brynjolfsson and Hitt (1996), Siegel and Griliches (1992), and Greenan L’Horty and Mairesse (2002) came out in their research with a contrary view all together.

According to Olanrewaju, B. E. (2016), the application of electronic payment in concept, technique, and in policies, and the implementation of electronic devices equipment in the banking industry has become a subject of essential significance and concern to all banks operating within Nigeria territory, which as he puts it, has become a requirement for local and global competitiveness. The fast progression in the world of banking sector has added the burden on African countries, including Sierra Leone banking industry to increase efficiency in service delivery. This era of banking services has tolerated customers to enter any bank that deals with information technology to do banking transaction in the shortest possible time. All public and private sector banking operations in Sierra Leone are digital. Through the improvement of information technology, to augment efficient and effective banking services, a lot of banks in Sierra Leone, specifically the 21<sup>st</sup> century banks have all espoused the electronic banking services, including the Sierra Leone Commercial Bank (SLCB) and the Zenith Bank (ZB), which are the banks

under investigation, to enable them deliver their services to customers through the improvement in information technology.

## II. REVIEW OF RELATED LITERATURE

### 2.0.1 Brief History of Sierra Leone Commercial Bank (SLCB) and Zenith Bank (ZB)

#### *Sierra Leone Commercial Bank*

Sierra Leone Commercial Bank Limited was founded on the 15<sup>th</sup> February, 1973, with the motive of serving large corporations, small and medium enterprises and personal account holders. SLCB is the country’s first fully indigenous bank with a wide range of world class services. They have their headquarters in Freetown, the capital, with thirteen branches across the country. Though the government is the majority shareholders, the bank is operated like a private enterprise.

SLCB’s core value is continuous commitment guided by their fundamental core principles and values. They are active in modus operandi and are revitalized with the following; team ethics, integrity and commitment, driving customers’ success, insist on excellence, creating a climate of openness, trust and personal values.

SLCB is expected to nurture customers’ strength 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 development approach is to provide their staff with international experience in line with the employees’ career aspiration, skill, experience and strengths. They believe to feel different from other organisations; as their workplace 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’.

#### *Zenith Bank Sierra Leone*

Zenith Bank Sierra Leone is a subsidiary of Zenith bank plc. Nigeria. It commenced operation in September, 2008, with its exceptional approach to excellence service delivery has endeared Zenith franchise to its teeming customers. It occupies a leading position in development of cutting-edge Information and Communication Technology (ICT) infrastructure to create innovative products that meet the need of its customers.

Zenith Bank Sierra Leone Limited leverages on large network of Zenith Bank group to render unparalleled service to its customers. Headquartered in Lagos, Nigeria, Zenith Bank plc has over 500 branches spread across every part of Nigeria. It has other subsidiaries in; United Kingdom, Zenith bank (UK) Limited, Zenith bank (Ghana) Limited, Zenith Bank (Gambia) Limited. The bank also has

representative offices in South Africa, People's Republic of China and United Arab Emirate (UAE).

With its headquarters at 18-20 Rawdon Street, Freetown, with branches in Kenema (Eastern Region) Lumbly (Freetown) and Freetown International Airport, Lungi (Northern Region). They have strategic expansion plans in place that will enable them have their presence in every part of the country.

Driven by culture of excellence and strict adherence to global best practices, the bank has combined vision, skillful banking expertise, cutting-edge technology to create product and services that anticipate and meet customers' expectations; enable businesses to thrive and grow wealth for customers. Zenith Bank's strategic objective is to clearly distinguish itself in the banking industry through superior quality service, unique customer experience and sound financial indices; which has become part of their corporate culture with the following attributes; Best-in-Class customers experience, creativity, excellence financial performance, good asset quality, stable management, dedicated and high skilled workforce, cutting-edge information and communication technology, efficient and effective distribution channels.

Zenith Bank's mission is "to build the Zenith brand into a reputable international financial institution recognised for innovation, superior performance and creating premium value for all stakeholders". Their vision is "to become the leading Nigerian commercial bank, technology driven global financial institution, providing a distinctively unique range of financial services. Their culture is and always will be exceptional service delivery that surpasses customer expectation.

### ***The Concept of Technology***

The concept of technology can be considered to be referred to as the knowledge acquired for the accomplishment of assigned task. Technology deals with the expertise and essential procedures needed to execute those assigned responsibilities in a specific situation. Information technology deals with computer and its operations, telecommunications networks, and multimedia applications (Frenzel, 1996). According to Frenzel (1996), 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 ICT has gone beyond the responsibility of just supporting services in banking institutions, its usage is now everywhere in the world. The devices used in ITC 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 (2005) added that other ICT equipments like data recognition equipment, factory automation hardware and services, tele-computing and tele-

conferencing are been utilised in real time for effective and efficient delivery of services. The idea of the introduction of technology in the banking industry is a noteworthy endeavour 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 computer in the daily processing of data in the storage and retrieval of data has enhanced improved development in the 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 modern use of information technology in its institutions, including the banking sector. Ovia J. (2005) added that this modern technology usage has fetched a greater change in modern society that has transmuted most banking industries.

David R. (1982) asserted that there had been reasonable transfer from the issues of cash to digital monetary transaction with customers. Patrick F. (1985) had further added that the benefit cash allure as the worth of customer transaction has increased in light of that, the use of digital banking imbursement has increased with rising worth, as this type of service delivery in the banking sector has led to 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 swift and easy as it is now. Information and communication technology has modernised the banking procedures for the payment and withdrawal of cash within and without a country. Cashiers now-a-days are given the necessary training and expertise to give out slips for deposition of cashing transaction, as well as withdrawal processes.

According to (Ikechukwu, 2000), the mandate customers give to banks in draft of cheque to make payment to third parties has widely been done through computerisation. In the 18<sup>th</sup> and 19<sup>th</sup> 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 times through digitalisation. Ovia J. (1997) asserted that the modern technology and performance augmentation in the banking system sector have made the movement of 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, Bill G. (1996) purported that in the banking industry, the modern methods of money transaction have not only created challenges of managements to adapt to the new technology, but also created many opportunities to successfully utilise the technology.

Stan M. (1997) in his own contribution defined electronic payment as a system of payment in which transactions take place electronically without the use of money. Steve W. (1996) also added that electronic payment is a system that is computerised using information

technology where banking transaction 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 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 in order to aid customers easily transact business easily and successfully. Debit cards are those computerised 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 access their monies as and when they want to.

Olanrewaju, B.C. (2016) asserted that the modern corporate environment is lively and going through swift dynamism, due to technological innovations, improved consciousness and the need for customers. Corporate organisations like the banking industries in this generation functions in a very complex and highly impulsive economic environment. Laudon and Laudon (1991) opined that 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 ICT gives in its application to enhance success in the dispensation and recording of data processing. Olanrewaju B.E. (2016) continue to contribute to the debate that ICT has provided self service facilities, through the use of automated customer service machines from where prospective customers can complete their account opening documents directly online. Customers these days through the use of information communication technology can now check their accounts where ever they are to access their financial statements without going to the banks for such information through the use of their mobile phone devices. In Sierra Leone, the Sierra Leone Commercial Bank (SLCB), and a lot of other private commercial banks, including Zenith Bank 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. Olanrewaju B.E. (2016) added that ICT aids customers in the authentication of their account numbers and receive their checkbooks, credit and debit cards. Laudon and Laudon (2001) 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. The researcher added that ICT products in use in the banking industries included Automated teller Machine (ATM), Smart cards, Telephone Banking, MICR—Magnetic Ink Character Recognition technology, Electronic Fund Transfer,

Electronic Data Interchange, Electronic Home and Office Banking etc.

### ***2.0.2 The Novelty of Banking: The Main Instrument for Advantageous Competitiveness***

The concept of novelty or innovation was basically 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 reward that is given for a performance. He was popularly known for his theories of capitalist development and business cycles, and for his views on the importance of entrepreneurship and innovation.

Schumpeter discerned between entrepreneurs who create innovations and bankers who invests in these innovations. Schumpeter J. A. (1939) believes that bankers are branded as "the monetary complement of innovation" who prioritised 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 versa. Schumpeter emphasised the significance of bankers' responsibility in funding innovative ideas. In this 21<sup>st</sup> century, banks' responsibilities are not just to credit business ventures but to be modern by the use of technologies to stay and be at the top in competitiveness, in the changing, intricate, and competitive environment. Farouk B.K.U. and Dandago K.I. (2015), asserted that financial activities in this 21<sup>st</sup> century can never be implemented without an innovative information systems 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 (Sujud H., Hassan B.; 2017, Berger A.N.;2003, Mukund J.M.; Suresh N.N. and Arvind P.P; 2015).

In Haniel El Chaarani's (2018) research, made mention of Coras et al. (2015) who indicated that the changing 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. According to Martim de Condo, et al. (2016), 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. Ionescu A. and Dumitru N. (2015) opined that technological innovation is the leading force of competitiveness and durable growth in organisations. Haniel C. (2018) 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.

Saeidzadeh 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. The researchers further exhibited the significance of information and communication novelty as the means to banking success. In support of Saedizadeh 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 pretty obscuring to be talking about in the service sector as it happens throughout the industrial process.

The actual gains in competitiveness for 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 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, use of astuteness in competition, in the management of technology by the banks seem to be a very significant instrument for 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 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 transaction by accessing customers with the needed capacity to perform their banking operations anywhere and at any time.

### **2.0.3 Impact of ICT on the Banking Sector in Sierra Leone**

Sierra Leone is a very low country in financial development. A country with a population of six million people, with an annual per capita ~~annual~~ income currently around US\$315. The country has thirteen commercial banks; source (Financial Sector Reform and Development in Sierra Leone), including the Sierra Leone Commercial Banks (SLCB) and the Zenith Bank (ZB), which are the two banks under investigation. The (SLCB) has branches everywhere in Sierra Leone, whereas not all the foreign banks have branches across strategic locations in the country. Now-a-days, the banking system has experienced massive revolution which has brought about turnaround performance in the survival, growth, and behaviour 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 (Kama 2006; Okpara 2011; & Essien 2012).

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

financial 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 compare to those customers that has transacted banking businesses before 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 or not there at all for banks in Sierra Leone to manage their information technology implementation on a stand-alone basis with the uprising of (IT), 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 operation.

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:

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

### **III. THE RESEARCH QUESTION (S)**

Below are the questions the research intends to find answers to, that will lead to an investigation using the research fields.

- a. Is there any meaningful relationship between use of ICT and service delivery to customers at (SLCB) and (ZBSL) in Sierra Leone?
- b. Does information technology have any meaningful effecton easing the network transactions of the bank workers and customers of (SLCB) and (ZBSL) in Sierra Leone?
- c. How does the use of innovative technology impactful on the delivery of services to customers at (SLCB) and (ZBSL) in Sierra Leone?

- d. How has the use of (ICT) enhanced profitability and cutdown on expenses on stakeholders at (SLCB) and (ZBSL) in Sierra Leone?

#### IV. RESEARCH HYPOTHESES

H<sub>01</sub> There is no significant relationship between the use of ICT and customers satisfaction at the two banks.

H<sub>02</sub> The use of ICT has enhanced easy access to bank service with less time spent by customers to transact business at the banks.

H<sub>03</sub> There is no significant impact between the use of ICT and the satisfactory provision of services by ATM, call centre operation and network development.

#### V. RESEARCH METHODOLOGY

The researcher used exploratory and descriptive investigative approach in achieving the objective of the study.

##### 5.0.1 Sampling Design

Simple Random Sampling (SRS) is the sampling design this study uses; as it is known to be the most appropriate design for studies of this nature. It is not possible to study the entire population of the research, so the study uses 95 sample sizes from each bank, comprising; bank workers and customers. There are 30 clerical staff, 30 managerial staff, and 35 customers from each bank respectively.

The study design is a field survey, using the two banks as the research fields. The main focus is on the staff of both banks and their customers which forms the population of this study. The Sierra Leone Commercial Bank (SLCB) and Zenith Bank (ZB) are randomly selected, representing the commercial banks in Sierra Leone. Appropriate and necessary data were collected to determine the degree of benefits and challenges on the impact of the use of modern information communication technology on banking overall performance of Sierra Leone public and private commercial banking industry and the service delivery to customers in Sierra Leone. To realise the objective of the study, primary data was sought for. The main source of primary data collection was the use of questionnaire which was disseminated through a software application data collection tool known as KoBo Collect ToolBox, and responses will be collected from the two commercial banks workers and their customers, representing the public and private banks in Sierra Leone.

The questionnaire was specifically designed in a way that the respondents have alternatives in selecting their responses from the options given where they are expected to honestly express their opinions. The Five Point Likert Scale measurement of variables was used, which expects the respondents to specify a degree of agreement or disagreement. A Statistical Package for the Social Sciences (SPSS) was used to acquire the correct results given. The Chi-Square, a non-parametric statistic was used in testing of

the hypotheses set, and a regression analysis and ANOVA were used to test if there is a linear relationship and a level of linearity between high levels of automation of banking services and improvement in the service delivery in Sierra Leone.

##### 5.0.2 Study Population and Sampling Procedure

The commercial banks in Sierra Leone make up the population of this research, with a comparative case study of **Sierra Leone Commercial Bank (SLCB) and Zenith Bank (ZB) respectively**. There are thirteen indigenous commercial banks which is indicated in table 1 below, but the two banks above were singled out specifically for the purpose of data collection.

Table 1- Banks under review in Sierra Leone and their website addresses.

Name	Web Address	Description
Sierra Leone Commercial Bank	www.slcb.com	National Bank
Zenith Bank of Sierra Leone	www.zenithbank.com.sl	Foreign Bank

Source: (Financial Sector Reform and Development in Sierra Leone)

The two main banks randomly selected (SLCB) and (ZBSL) among the thirteen commercial banks in Sierra Leone, were contacted and agreed to participate in the survey, but first observed the questionnaire to see if there is any variable that demands the release of classified information. The researcher distributed a soft copy of the software application-built questionnaire to the two banks workers. To get customers fill the questionnaire, the researcher himself went to the two banks within a period of one month, every day talking to customers when they come to transact business at the banks, explaining to them the purpose of the research to gain their interest before they will fill the forms. The application used to build the questionnaire known as HoBo Collect ToolBox is very easy to use application which can be done through a mobile phone, a respondent can fill the questionnaire and submit. Submission of a filled questionnaire comes directly into my computer, from where a monitor of the responses is made. At the end of it all, lots of responses, more than needed came into the computer, from both customers the employees. Each of the two banks' employees and customers were to fill in ninety-five (95) questionnaires which sums up to one hundred and ninety (190) responses from the two banks.

A senior lecturer and Head of Department of Population Studies at Fourah Bay College, University of Sierra Leone, Freetown was consulted on the suitability of the items in the questionnaire, after observing it agreed to its usage. Content and face validity of the work perception scale were done. The researcher and some senior colleagues in the research committee of the university where he works, certified the instrument as being valid. An expert in statistics Sierra Leone, an Agency of one of the MDAs in Freetown confirmed the same.

**5.0.3 Reliability of the Instrument**

Reliability refers to the extent that the instrument yields the same results over multiple trials. Validity refers to the extent that the instrument measures what it was designed to measure. Cronbach alpha reliability was used to determine the internal reliability of the scales used for this study. The full-scale reliability is highly crucial for lower error change. Based on the pilot study conducted in this research, the instruments results were found to be highly reliable.

**5.0.4 Descriptive Analysis of Information on the research Instrument**

The results of the data collected with the questionnaire were examined. Elucidations of the relations found among the data and groups of data are thus presented in this piece of work.

**VI. DATA PRESENTATION AND ANALYSIS**

The demographic features of the respondents are of relevance to this kind of research. This kind of information provides the structure of the population studied, which tells the relationship between individual characters and the degrees of impact on their behavior. Gender, age, academic qualification, number of years in the banking business as staff or customer, and type of respondent (staff or customer), are part of the demographic variables used in this study, which all constitute part of the independent variables used in the study.

All the respondents live in Freetown Rural and Urban Districts. There are 103 responses that came in from the two banks (SLCB and ZBSL), from employee and customers living in the Western Rural District with 51.1%, while 96 responses from employees and customers living in the Western Urban District, with 48.5% which total to 199 respondents in all that took part in this survey. The tables below indicate the interpretations from responses to the variables in the questionnaire relating to demographic features.

The respondents took thirty-one calendar days to complete the responses, before the researcher processed the data. The raw data was imputed into Excel spread sheet, to enable the researcher arrange the data appropriately before transferring to IBM SPSS Statistic 22 version, as indicated in the tables below.

Table 2 – Frequency and percentage distribution showing the gender of the respondents

Variables	Absolute Frequency	Relative Frequency in %
Male	112	56.3
Female	87	43.7
Total	199	100

Source: Researchers field survey in 2021

Table 2 shows the gender distribution of the respondents. A total of 199 from the valid population of 199 respondents, 112 (56.3%) are male, while 87 (43.7%) are

female; indicating the huge dissimilarity in gender structure of staff in the two banks.

Table 3 – Frequency and percentage distribution showing the age of the respondents

Variables	Absolute Frequency	Relative Frequency in %
21—30	21	10.6
31—40	122	61.3
41—50	48	24.1
51—60	7	3.5
Above 60	1	0.5
Total	199	100

Source: Researchers field survey in 2021

Table 3 shows the age structure of the sample respondents, which explains that out of all the age differences, age bracket (31- 40) years constitutes the largest percentage of the respondents of (61.3%). The table further discloses that age bracket (41 - 50) are the second largest percentage in the population with (24.1%). Notwithstanding, the table also reveals that (51 - 60) years, and (above 60) years with (3.5%) and (0.5%) respectively are the least respondents in the population of the study. This above difference might be as a result of disparities in employment policies across the two commercial banks.

Table 4 – Frequency and percentage distribution showing the educational qualification of the respondents.

Variables	Absolute Frequency	Relative Frequency in %
First Degree	116	58.3
Masters	46	23.1
Diploma/HND	31	15.6
WASSCE/O' Level/A' Level	5	2.5
PhD	1	0.5
Total	199	100

Source: Researchers field survey in 2021

The frequency and percentage distribution of the respondents reveals that the First-degree holders are the largest respondents in the survey sample with 116 (58.3%), followed by Master's degree holders with 46 respondents of (23.1%) of the population. Those with Diploma and Higher national Diploma comprise of 31 responders with (15.6%) of the population, followed by respondents with WASSCE/ O' Level/A' Level certificates comprising 5 respondents with (2.5%) of the population, and PhD holders been the least partakers in the survey with 1 respondent (0.5%) of the population. This kind of result reads that the population of the survey is literates.

Table 5 – Frequency and percentage distribution of number of years spent in the banking business as staff or customer.

Variables	Absolute Frequency	Relative Frequency
4 - 9 years	116	58.3
1 - 3 years	69	34.7
10 years and	12	6

above		
Less than 1 year	2	1
Total	119	100

Source: Researchers field survey in 2021

Table 5 above explains that respondents who have spent between 4 - 9 years in the banking business either as staff or customer in the two banks are in the largest in the population sample with 116 (58%), followed by respondents who have spent between 1 - 3 years in the banking industry as both staff or customer with 69 (34.5%). The respondents who have spent 10 years and above are 12 in the population with (6%), while respondents who have spent less than a year with the two banks either as staff or customer are 2 with (1%) of the population sample. This kind of result shows that the two banks are having younger working experienced staff and customers, which may indicate that most of the long serving staff may have retired, left or have died, to be replaced with staff that have spent less ten years in the industry.

Table 6 – Frequency and percentage distribution of the type of respondent (staff or customer)

Variables	Absolute Frequency	Relative Frequency
Customer	127	63.8
Staff	72	36.2
Total	199	100

Source: Researchers field survey in 2021

The frequency and percentage distribution above shows that the customers from the two banks took part in the survey more that the staff with 127 respondents with

Service toward Customers	Respondent	N	Mean	Std. Deviation	Std. Error Mean	P-Value
This bank introduced the use of ICT to satisfy the demand for quality services and products by customers.	Customer	127	2.0000	.00000	.00000	.005
	Staff	72	2.1250	.50176	.05913	.038

The P value of (.000), according to decision rule to assess if the test is significant, shows that if  $P \leq 0.01$  then the test is significant, but if  $P > 0.01$  then the test is insignificant. According to hypothesis one, there is no significant relationship between the use of ICT and customer services, but the table above indicate that there is significant relationship between the use of ICT to the satisfaction of the demand of customers for quality services and product by customers. The mean ( $X = 2.0000$ ) with a

(63.5%) of the population, followed by 72 staff respondents with (36%) of the population sample. This could be interpreted as the staff where maybe too very bust with work to have had ample time to respond to the questionnaire.

Table 7 – Frequency and percentage distribution of respondents from the two banks

Variables	Absolute Frequency	Relative Frequency
Zenith Bank SL Ltd.	113	56.8
SLCB Ltd.	86	43.2
Total	199	100

Source: Researchers field survey in 2021

The frequency and percentage distribution of the above table shows that respondents from the Zenith Bank Sierra Leone Limited participated more in the survey that those at the Sierra Leone Commercial Bank Limited with 113 respondents of (56%) and 86 respondents of (43.5%) respectively of both staff and customers. The researchers expected more participation in the survey from the (SLCB) than the (ZB), because the former is the oldest with more staff and customer capacity than the latter according to the Financial Sector Reform and Development in Sierra Leone. Again, it cannot be judged by that as per the result before us. Another interpretation could be that the respondents from the ZB were more interested in the survey that the SLCB.

**Hypothesis Testing**

Hypothesis One – There is no significant relationship between the use of I C T and customers satisfaction at the two banks.

standard deviation of (.00000) with a P-Value of .005 indicate that the relationship between ICT usage at the two banks and the customer satisfaction is **greatly highly** significant.

Hypothesis Two - The use of ICT has enhanced easy access to bank service with less time spent by customers to transact business at the banks.

Service toward Customers	Respondent	N	Mean	Std. Deviation	Std. Error Mean	P-Value
The use of ICT has enhanced easy access to bank service with less time spent by customers to transact business at the banks.	Customer	127	2.0000	.00000	.00000	.089
	Staff	72	2.0833	.55029	.06485	.203



According to the decisive rule, to enhance significant relationship with variables, the P – Value must be at  $\leq 0.01$ . The above table speaks contrary to that rule, with mean ( $X=2.0000$ ) and a P – Value of .089, it is interpreted that the use of ICT at the two banks has no correlated relationship with the customers spending less time at the banks for services.

The table explains that customers still spend more time at the banks even with ICT usage.

Hypothesis Three - There is no significant impact between the use of ICT and the satisfactory provision of services by ATM, call centre operation and network development.

Service toward Customers	Respondent	N	Mean	Std. Deviation	Std. Error Mean	P-Value
The continuous use of ICT has increased the provision of services and managed costs of ATM Networks, Bill's payments, Software Development, Call Centre Operations and Network Management.	Customer	127	2.0000	.00000	.00000	.000
	Staff	72	2.4861	.53056	.06253	.000

According to hypothesis three, the impact between the use of ICT and the satisfactory provision of services by ATM operations and network development is not significant, but the table above shows that there is great significant relationship between ATM usage and customer service satisfaction, with a mean ( $X=2.0000$ ) with a P - Value of (.000) expresses positive correlation between ATM usage and customer satisfaction at the two banks.

## VII. DISCUSSION, CONCLUSION RECOMMENDATION

### 7.0.1 Discussion

The key discoveries of the study as exposed by the results presented in this paper as deliberated above can be abridged as follows:

- The banks habitually engross young graduates in the banking industry.
- The staff employed at the two banks work in collaborative relationship, devoid of gender with competence in the use of ICT for competitiveness.
- Features that impact the banks' strength of ICT usage include the bankers' age, educational qualification, computer literacy and type of ICT devices used.
- The use of ICT has positive and significant impacts on the effective and efficient service delivery, operations, output and profit level of the banks.

### 7.0.2 Conclusion

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. In light of the above, Sierra Leone has experienced changes in the way employment, business relationships between organisations, and the way these organisations 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, has contributed greatly to impacting the input and value of the Sierra Leone banking procedures. According to the result of this research, 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 commercial banks 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 research that 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 been paid. When customers result to using the ATM, it most often not in use, as it undergoes maintenance.

### 7.0.3 Recommendations

- The banking sector in Sierra Leone need to invest more in modern technological equipments to ease service delivery by the staff to enhance satisfaction of the customers to avoid long standing in queues at certain periods non the months.
- The commercial banks must regularly train their employees with the successful use of the technological equipments to enable them be comfortable with the banking operations to avoid customers, as fresh men are usually employed in the banks. By so doing, the employees' efficiency and eminence in service delivery will be ensured, which will in turn retain customers and enhance productivity, and banks' viability, with all other thing been equal.

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