



NEAR EAST UNIVERSITY  
INSTITUTE OF GRADUATE STUDIES  
BANKING AND ACCOUNTING PROGRAM

**THE IMPACT OF THE BANKING SECTOR DEVELOPMENT ON THE FINANCIAL  
PERFORMANCE OF THE COMMUNICATION SECTOR IN SIERRA LEONE**

AROUN RASHID KAMARA

MASTER'S THESIS

NICOSIA  
2021

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THESIS SUPERVISOR  
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NICOSIA  
2021

## **ACCEPTANCE/APPROVAL**

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## DECLARATION

I Aroun Rashid Kamara, hereby declare that this dissertation entitled '**The Impact of the Banking Sector Development on the Financial Performance of the Communication Sector in Sierra Leone**' has been prepared myself under the guidance and supervision of '**Asst Prof.Dr. Ahmed Samour**' in partial fulfillment of the Near East University, Graduate School of Social Sciences regulations and does not to the best of my knowledge breach any Law of Copyrights and has been tested for plagiarism and a copy of the result can be found in the Thesis.

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Above all, I thank God for his Grace and Mercies, without Him this study would not have been done.

I remain solely responsible and accountable for any shortfalls in this thesis.

## **DEDICATION**

**To Alvia and Mayra**

## ABSTRACT

### **THE IMPACT OF THE BANKING SECTOR DEVELOPMENT ON THE FINANCIAL PERFORMANCE OF THE COMMUNICATION SECTOR IN SIERRA LEONE**

*The banking sector is regarded as an engine of growth especially in sub-Saharan nations and also considered to be the blood-line for growth for other institutions and economic development. This is an explorative experimental study that strive to examined the impact of the Banking Sector development on the financial performance of the communication sector in Sierra Leone. Secondary Panel data were used from 2001 to 2020, and were obtained from audited annual financial statement of the selected institutions. The test for stationarity was done by using the Augmented Dickey Fuller (ADF) unit root test which confirmed that the data are stationary at first difference and the Johansen cointegration test was also conducted and confirmed that, the variables are integrated and cointegrated. The ARDL model was used to established the relationship. Results revealed that, loans and advances volume have a positive significant impact on the financial performance of the selected communication institutions in Sierra Leone, whiles interest rate and debt rate prove to have a negative insignificant impact on the financial performance of the communication sector in Sierra Leone. The results further established that, there is an evidence of a positive long-run relationship between the banking sector services to that of the financial performance of the communication sector in Sierra Leone. Stability tests and other diagnostic test were conducted to examine the validity of the results and to also established that, the model can be used for policy formation and implementation in Sierra Leone.*

*In respect to the above, regulators and policy makers should provide adequate support to the banking sector to enhance their productivity and also ensure sustainability and stability, which shall in turn provide support in respect of increased loan and advances to other sectors within the economy in order foster national economic growth.*

**Keywords:** Banking Development, Communication Sector, Financial Performance, Return on Assets, Interest Rate, Loan and Advances, Debt Ratio, Autoregressive Distributed Lag.



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## **ABBREVIATIONS**

**ADF** - Augmented Dickey Fuller

**AIC**- Akaike Selection Criteria

**ANOVA** - Analysis of Variance

**ARDL** - Autoregressive Distributed lag

**ATM** - Automated Teller Machine

**BLUE** - Best Linear Unbiased Estimator

**BSL** - Bank of Sierra Leone

**CAR** - Capital Adequacy Ratio

**CB'S** - Community Banks

**DOLS** - Dynamic Ordinary Least Square

**ECM** - Error Correction Model

**EG** - Economic Growth

**FSA's** - Financial Services Associations

**GDP** - Gross Domestic Product

**IFAD** - International Fund for Agricultural development

**IR** - Interest Rate

**LTE** - Long Term Evolution

**MFI's** - Micro Finance Institution

**NATCOM** - National Communication for Telecommunication

**NPL** - Non- Performing loans

**POS** - Point of sales

**PV** - Probability Value

**ROA** - Return on Assets

**ROE** - Return on Equity

**SLE** - Sierra Leone Leone (Currency)

**USD** - United states Dollars

**VAR** - Value at Risk

**VEC** - Vector Error Correction

## INTRODUCTION

Banks over the decades has being the engine of economic growth as they moved from their traditional role of just providing contemporary banking services and embracing a sustainable banking system that goes beyond just circulation of money, wealth generation, capital formation, savings and checking accounts offering, amongst others. The banking system have now incorporated selling policies, offering equipment leasing, making venture capital loans, providing expert advices to customers and other financial related services.

Banks plays a key central role in a country's financial structure and the national economy at large. Their unique nature aids the easy flow of money within all sector of the economy and also among other financial institutions, they do also support the payment system that is widely used on a day to day basis. Banks requires robust regulations and controls as they are inherently unstable because of their business model and risky environment and also their balance sheet structure which portray their uniqueness and position them in a special place in the economy.

This is an experimental explorative study in Sierra Leone that seeks to examine the impact of banking development sector on the financial performance of the communication sector in Sierra Leone for the past twenty (20) years starting from 2001 to 2020, it also discusses the role of banks and also strive to establish the relative relationship between banking services in respect of loan and advance on financial performance of firms. However, this study discusses the role of banks in their intermediation role within the economy sectoral development, which is not that common in previous literatures. The following sections of this study, will high spot relevant details of the study and examine previous literature, published articles, reports and developed hypothesis to bring forth critical evidence of the significance of this study. The other sections shall deal with the methodology, empirical analysis, data and data collection. The results, discussion and recommendations follow thereafter.



## **CHAPTER ONE**

### **BACKGROUND OF STUDY**

#### **1.1 Introduction**

The great depression of 1930 and the financial crises of 2007 – 2008 that brought big financial institutions to their knees and causes stock markets crash and recession forced banks and financial regulators to adopt a robust financial regulations and policies to protect banks and other financial institutions and also provide substantial structural practices to avoid recurrent of such crisis in the future. The industry suffered severely during these period which raised the awareness of world leading economies to institute a lot of reforms, regulations in order to reduce bank's instability and reenforce them to be able to adequately prepared to absorb any shock in the foreseeable future.

A well functioned banking system is considered as the heart and lifeblood of any functioning economy and also regarded as the key to economic growth and development. According to (Douglas, 2008), a well functioned banking system is essential to unlocking wealth, creating opportunities, providing jobs, and facilitating commerce. It provides a mechanism for individuals and businesses to participate in the global economy. Importantly, banks, when they do their jobs correctly, allow their customers to have a vested interest in a strong and stable society.

The banking system ease trade in large scale both local and international and mostly done by facilities in terms of loan and advances approved on behalf of their customers to transact business on credit, they also provide guarantees and stand as referees on their customers behalf, in order to facilitate trade for

mutual benefits. From a clearer perspective, it is viewed that nations with larger financial institutions and bigger banks with enormous capital market, grows faster and powerful over the years. Industries that depends on external financing grows adequately faster in nations with good capital market and well-developed banking system, compared to developing nations with weak capital market and underdeveloped financial and banking system. However, the structure and quality of a financial system is influenced by technological transformation in terms of new innovations, economic activities and also the telecommunications advancements, legal and political environment affects financial development of a nation.

Banks plays fundamental role in boosting the communication sector financial performance in Sierra Leone. Banks provides facilities in terms of loans and advances to aid the purchasing of equipment's, gadgets and also provides liquidity in cash form to enhance their daily operational activities. In the past decades however, there has been a serious concern in respect of the decline rate of the sector financial performance output that led to the collapse of some communication institutions and the administration of others. It from these negative scenarios that gave rise to the establishment of the National Commission for telecommunication Act, charged with the responsibilities to reform and regulate the sector. The commission has embarked on instituting strategies and policies gears towards improving their productivity and management capability. The communication sector undoubtable plays a very vital role in modern development and with immense benefits crucial for economic development within the nation.

The impact of the banking sector on the financial performance of the communication sector in Sierra Leone has not been fully assessed and evaluated to determine the exact position. The communication sector over the years has been challenged and growth was limited with low contribution to gross domestic product. However, banking facilities in terms of credit were at the increase every year allocated to the sector, even though some are still challenged for funding facilities from banks. Communication institutions that were unable to withstand the pressure, shut down others almost liquidated and

acquired over and some are still battling for sustainability. The role of the communication sector in a developing nation is regarded as a growth engine and crucial to economic development. The banking sector is of crucial importance for a nation economic growth and sectorial development. A well-developed financial system will be in a good position to provide the right funding and other financial services at ease to credible projects that anticipate adequate returns.

## 1.2 An Overview of the Sierra Leone Banking Sector and Financial System

The banking sector in Sierra Leone has emerged from a terrible difficult time that gave rise to the liquidation and insolvency of at least six (6) banks in the early start of the sector. Its momentum starts to get back on good footings in the early nineties and was again brutally damaged by the long decade civil war. This period was a total devastating era that forcefully led to the closure of all the international banks and even some local ones, others were permanently shut down. The sector then started its recovery after the devastating decade civil war by the late nineties with two (2) state owned banks and keep progressing gracefully over the years.

The current banking sector in Sierra Leone as at review period comprises of the followings;

**Table 1: Licensed Banking Institutions in Sierra Leone**

	<b>Gov't</b>	<b>Domestic</b>	<b>Inter'l</b>	<b>Multinat'l</b>	<b>Total</b>
Commercial banks	2	1	11	0	14
Community banks	17	0	0	0	17
Fin Ass (FSA)	59	0	0	0	59
M-FinInst's (MFI's)	0	10	3	3	16
Dep Taking M-Fin	0	1	1	1	3
Mob-Money ops	0	1		2	3
<b>Total</b>	<b>78</b>	<b>13</b>	<b>15</b>	<b>6</b>	<b>112</b>

The sector is very stable as at the period under review and dominated by the commercial banks as they accounted for about Ninety- Nine percent (99%) of the sector financial assets with Le 5.29 trillion. The eleven (11) foreign banks accounted for 60% of the sector's total assets. The capital adequacy ratio (CAR) for the sector recorded an increase of about 3.5% in 2017 and steadily increasing over the years indicating that the sector has adequate capital reserve to serve as cushion in case of losses. The sector keeps experiencing a steady improvement over the years even though facing some challenging circumstances. The sector Non-performing loan portfolio was about 34% by the year 2014 and in 2016 a declining trend of about 10% and 12% and stands at 23% and 18% respectively as at the end of 2017 and keep declining as at 2020 according to the bank of Sierra Leone financial stability report. This indicates the sector is keeping a close watch on assets quality to ensure a better productive asset that characterized good assets quality management. The industry profitability improved immensely over the years. Return on Assets (ROA) from 2016 to 2017 increases to 5.3% from 2.9% and Return on Equity (ROE) from 22.3% to 25.6% respectively, this shows how the industry keep developing over the years. The banks' deposits keep growing over the years, this is so because of the rapid growth in branches, agencies and outlets all over the country.

The Sierra Leone Commercial Bank and the Rokel Commercial bank Limited, the only two big state-owned banks face grave financial stability challenges despite the entrance of numbers of international banks into the industry over the past decade. The state-owned banks continue to play key role in the industry and accounts for about 28.6% of the industry total assets and 23.8% credit respectively. The two banks have a long-standing asset challenges since inception that resulted to a dry up of their capital base and gave room to regulators to institute restructuring measures. The bank of Sierra Leone intervened in the running of the banks and taken over the management of the two institutions and put in place mechanisms to structure and limit new corporate lending's. However, the government in their bid to restructure these two banks give consideration to their business model, viability and

sustainability. A positive outcome from the restructuring will significantly impact the financial stability of the country, which apparently will increase risk taking, better asset management and reduces the cost of funding and also operational cost.

The two banks were challenged to access funding from the issuing of common stock and even from the private enterprise and other industrial sectors. The banks faces increasing demands over the years from the government to fund budget deficit, government borrowings and these has limited the sector to make credit available to the private sector. Central government credit increased from 5.5% in 2011 to 16.8% in 2016 and in 2017 an increased 17.16% and keep increasing significantly. The key drivers to this increased lending to the central government and decreased lending to the private sector is evidenced on the two state-owned banks, this is so because they often do business with government securities as the terms are more advantageous than that of securities in the market and by doing so they are effectively limiting access to finance and particularly the enterprise sector . The Sierra Leone stock market is still on its early growth stage and not working effective, so banks and other investors do trade on government securities which are convenient and less risky. Banks also trade with government securities to boost their liquidity and also aids their reserve management. The planned restructuring of these banks has a great potential to increase funding to the private sector and also enhance their productivity, which could be a significant driver of increased access to finance for other sectorial development.

The Community banks, FSAs' and the MFIs' are the primary provider of financial services to the rural communities. They primarily cater for micro and small enterprises and also focus lending on agricultural businesses and agric-related businesses in the rural communities and women made up a significant segment of loan beneficiaries. These community banks, FSAs' and MFIs' only account for just one percent (1%) of the sector total assets but keep improving over the years with a very deplorable and uneven performance in recent years (Chandra & Smith , 2018 ) in their report indicated that the deplorable performance of these institutions were due to lack of basic infrastructures, poor

corporate governance, weak internal controls, weak human resources capacity, poor communication network and weak information technology. The B.SL has instituted an increased supervision both on-site and off-site inspections of CB's, FSAs' and MFIs'. The restructure campaign for these institutions gained the support from the central government and especially the International Fund for Agricultural Development (IFAD). IFAD supported the restructuring of the present six (6) community banks established by the central government and established eleven (11) more and also fully established all the fifty-nine (59) FSAs'. The CBs' and FSAs' received additional support in the form of operational grants, fixed assets grants, improved information and communication technology equipments', capacity building programs, increased supervision and institute better internal controls. The MFIs' have less than one (1%) of the sector total assets which in relatively small but with a huge outreach with over 105 branches geographically located country wide. All these institutions are co-supervised by the B.SL and other institutions.

The banking sector stands as the bedrock of national development in Sierra Leone and mediate between all other sectors for sustainable development.

### **1.3 An Overview of the Communication Sector in Sierra Leone**

In recent years Sierra Leone has reaped the benefits and keep benefiting of a sustained political stability just after the decade civil war. The nation experienced an adequate economic growth in 2012 and 2013 but still faced a lot of challenges that's brought about a downturn on foreign investment interest. The communication sector does suffer grave destructions during the civil war that lead to the colipase of at least all the institutions except for the national communication institutions. The sector has gradually over the years fighting recovery from the destructions but now experiencing significant developments since 2019 as there has been an infrastructure of a terrestrial fiber cable linking the neighboring nation of Guinea.

The telecommunication sector continues to operate in challenging conditions as theft of cable, apparatus and other issues like mismanagement, neglect and corruption that led to the collapse and demise of some telecom provider, like

Comium, Smart Mobile etc. In lieu to this, the government set up the National Telecommunication Commission to regulate and oversees the general operational affairs of the industry in order to enhance their operational activities. The commission instituted regulations and control measures that has helped the sector greatly and also provides extra energy in order to enhance a better and improved market. Frequent monitoring and checks on service quality and the rescue of the international gateway among others are some of the new input injected into the sector's operations.

The mobile sector leads the way in the development of the sector and has been the major drivers of revenue. The industry experienced a major movement in the market when Orange Group acquired Airtel Bhati in 2016 and Qcell a Gambian telcom company were granted licenses for full operations of mobile services in the country.

The state-owned institution Sierratel that provides broadband and fixed wireless access services also entered the mobile services market with a brief monopoly on 3G network and by 2011 to 2012 others joined the 3G network. In recent times other providers have upgraded their network by investing on the LTE to enhances their services. The first LTE services was launched by Africell followed by Sierratel and Orange Sierra leone respectively between 2018 and 2019.

The current corona virus pandemic adversely impacted the supply chain globally, poses a significant threat to the communication sector in Sierra Leone. The communication sector in the coming years might experience a decline in the provision of mobile services and also faces difficulties to cope with the pressure in terms of maintaining existing infrastructures and upgrades. The provision of 5G network might be suspended or slowdown as the pandemic poses threat on the value chain. According to (Budde, 2020) in their work stated that, telecom consumption will be challenged financially by job losses and businesses shutdown and other economic activities downturn.

The sector is of great importance to national building and plays a key role in all facet of the real economy. The sector stands as significant link and bridge to

narrow the gap within and among all other sector in the real economy and considered to be the life line of national development.

#### **1.4 Statement of Purpose**

The study seeks to examine the nature and extent on the effects of the Banking sector development on the financial performance of the communication sector in Sierra Leone for 20yrs through analysis on range of research and studies related the world over. The findings to the study are essential to policy makers, regulators, industrial practitioners and also financial institutions executives as it can be used to improve their ability to adequately make a good use of banking products and services offered and able to evaluate and ascertain the benefits gained. It shall also be of help in order for firms to be able to agitate for more better services and build a strategic partnership with the banking sector which will in turn be of a sustainable development between the two and bolster economic growth in the nation.

The study will also highlight key banking and financial practices that shall be useful for policy makers, government, regulatory bodies and industrial executives and also aimed at establishing, if there is any significant relationship between the banking sector services on the financial performance of the selected institutions and develop recommendations on how to enhance banking services that will improve the financial performance of the selected institutions in Sierra Leone.

The study also adds to knowledge and further helps other scholars and researchers who intend to study in details, banking sector development and its considerable impact on other economic sectors financial performance and productivity in the real economy of a nation.

#### **1.5 Research Question**

*How do banking development influences other industrial sector financial performance?*



## 1.6 Research Objectives

The main objective of this study is to investigate the impact of the banking sector development on the financial performance of the communication sector in Sierra Leone.

Sub Objectives;

- To evaluate the product and services of banks that do impacted the financial performance of the communication sector;
- To assess the impact on the financial position of the interest rate charged on loans and advances by the banking sector;
- To determine the financial performance of the selected institutions in terms of profitability;
- To evaluate the capital structure of companies to ascertain the percentage financed by the banking sector and how it affect financial performance.

## 1.7 Hypothesis of Study

The hypotheses under investigation were developed in line with the general purpose of study and based on relevant theories about the development of the banking sector and its considerable impact on the financial performance on other industrial sector established over the years by researchers in the area of banking and also past empirical studies in relation to the effect of banking to the financial performance of the industrial sector.

However, this study seeks to test the following six (6) hypotheses, based on the objectives:

Hypothesis 1: No relationship exists between banking Sector loan&advances volume and Financial Performance of the Communication Sector

Hypothesis 2: Significant Relationship exists between Banking loans & advances volume and Financial Performance of the Communication Sector

Hypothesis 3: Bank Interest rate on Loans and Advances negatively impact the Communication Sector Financial Performance.

Hypothesis 4: Bank Interest rate on loans and Advances positively impact the Communication Sector Financial Performance.

Hypothesis 5: Debt Ratio have no significant impact on the Communication Sector Financial Performance

Hypothesis 6: Debt Ratio significantly impact the Communication Sector Financial Performance.

### **1.8 Scope of the Study**

The study seeks to examine how the banking sector influences the communication sector financial performance and to establish the relation that exist between the two sectors. The research will be conducted in Freetown the capital of Sierra Leone where all economic activities converged and would target the four (4) largest operating and long serving communication institutions out of thirty-nine (39) nationwide. Due to constraints of resources, the study shall be limited to just four institution in the Country and the period under consideration for this study will be from 2001 to 2020.

### **1.9 Limitations of Study**

The major limitations of the study were encountered in the course of obtaining the published financial statement of the communication sector to be used in this study. The annual financial reports of some communication institutions were missing which even the commission cannot make them available, especially report of other institution that have closed, merged and acquired over the period under review. Establishing the exact position of these institutions is difficult considering the challenges encountered in collecting the data and the institutions approaches in reporting which varies from each other and some are multinational and needs extra effort to derive the right report to get an accurate figure. In lieu to the above, this study is limited to just four (4) of biggest and long serving communication institutions with available information selected for investigations.

### **1.10 Structure of Study**

This study is divided in Six (6) chapters, which are further sub-divided into more areas in respect of the developed subject matter:

The first Chapter is the introductory part which provides highlight on the study to be undertaken. The other topics have been developed in order to justify the

importance of this study and they are as follows:

- A. The purpose of study and research questions
- B. The objectives of the study
- C. Justification and Significance
- D. The hypothesis of study
- E. Scope of Study and limitations

Chapter two and three will cover literature review and empirical and theoretical review. This will provide readers of this thesis to better comprehend the subject of this study. Chapter four (4) takes on the methods used to provide answers to the main question. In this area the study discussed the different steps and approaches utilized for repetitional purposes. Chapter five (5) discuss the analysis of the data collected from the yearly audited financial statements as prescribed in the prior chapter. Finally, chapter six (6) provides information on the result discussions, conclusions and recommendations proffer for further studies.

### **1.11 Conclusion**

In this introductory chapter I briefly discussed the purpose, objectives and scope of this study and also highlighted key related issues in relation to the study. I have no knowledge of earlier direct studies with regard to banking sector impact to the financial performance of the communication sector in Sierra Leone, but there are already several publications that highlighted such issues but highly concentrated on the impact of the banking sector on the economy, other industrial sectors like Agriculture, Manufacturing and they dealt with developmental issues relating to interest rate, financial performance and Gross domestic product etc. My study would surely contribute to a better understanding of the relationship between the two sectors and ascertain the impact to the nation, the industrial institutions, the central bank of Sierra Leone, the Ministry of Communication and Information, National Commission for telecommunication (NATCOM) as the supervisory institution, banking sector and the communication institutions.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The literature review provides detailed information on both banking development and industrial sectoral financial performance including some basic and current knowledge of substantive findings that set the foundation about banking development and its influence on other sectors in the economy, explanations on financial performance indicators, the key factors influencing institutional performance. The study will review the intended above through a systematic analysis of scientific literature and some other published works in relation to this study.

#### **2.2 Role of Banking in National Development**

Financial intermediation is considered to be a constructive activities whereby, financial institutions effectively channel funds from savers to borrowers and make active idle funds within the economy to aid the circular flow of funds with the objective to facilitate economic activities. However, financial intermediaries need to be adequately healthy in relation to their liquidity, assets qualities, efficient credit allocation and management capability to be able to effectively carry out their intermediation role. (Rajan & Zingales, 2002) stated that a developed financial sector should be in the position to address with ease entrepreneur with sound project financial needs, and ensure investors' confidence with anticipation of adequate returns. A well-developed financial system must be capable enough to determine, segment and spread the risks in areas they can be best borne and must be done at lower cost in order to

enhance savings, productivity and also fosters investment and thus economic growth.

Banks do exist to solve the underlying problems of liquidity and information asymmetry in order to minimize adverse selection and moral hazards. A Nation banking sector tends to be one of the most essential sector to enhance the economy to function properly. It's of major importance and referred to as the life-blood of economic activities, it is undisputable in mobilising deposits and make available credits to private enterprises, household and the state. (Douglas, 2008) asserted that, a banking system functions as the heart and lifeblood of any functioning economy. A banking system is the key to economic growth and development. It is essential to unlocking wealth, creating opportunities, providing jobs, and facilitating commerce. It provides a mechanism for individuals and businesses to participate in the global economy. Commercial banks in particular plays a significant role in the overall financial system and also the real economy. Banks as a key component of the financial system, allocate funds rallied from savers to borrowers in a well organized and well efficient manner. Financial institutions provide at reduces cost specialized services in relation to the risks and high cost related to obtaining information on both borrowing and saving opportunities. These services support the entire economy to operate effectively and more efficient.

Banks plays the leading role in the planning and the implementation of the financial policy in all economic system in developing nations and the different is contingent on how goals are prioritized and how they are achieved. The neo-classic model postulated that, achieving greater returns in terms of profits by using all means is an end in itself whiles the socialist stated that, other objectives of banking operations is the improvement of the general economy and the satisfaction of social needs.

The major activities of banks in their operations is to rally deposits from the surplus sector of a nation and make available fund for lending purposes in the money market. For banks to meet their liquidity needs they need to borrow from financial market, businesses, the central government and also individuals

with available surplus funds. The sector uses all these funds to onward extent loan and advances with reasonable interest to the private enterprises, institutions, individuals and government etc. They do also purchase short-term securities from the money market and make good investment on the capital market. The process of rallying funds and extending credit facilities and responding to interest rate and market place sensitivity, clearly indicated that the banking system helps to mediate between savers and borrowers and also channel financial services in an efficient manner within the economy. For instance, if there are no banks, how can money would be borrowed at ease? How to handle and manage savings? Can savings and borrowings be made as much as the needs on time and in the form that will be convenient? And what are the risk it might face as a saver or borrower. The banking sector provides appropriate answers for all these questions accordingly.

Banks create a convenient unique services, long-term lending while maintaining the liquidity of their liabilities to depositors who would want to access their money at any time without dropping nominal value; (Schooner & Taylor 2010 cited in van Ommeren 2011). Other markets would not able to achieve the transformation of maturity with the same advantages as banks do. Individual investors may still face credit risk and liquidity cost and that cannot be diversified to the degree that banks can. Since savers do not withdraw their funds at the same time, banks keep only a small part of their savings in liquid cash. As a result, banks diversify liquidity risks over a wide pool of savers.

Banking services are much more widespread than before. Competition is increasing and new activities frequently arise in modern times. The conventional form of banking, accepting deposits and extending loans is becoming less essential because the complexity of the balance sheet has magnified, and so the off-balance sheet activities and risk management (van Greening & Bra Tanovic 2009 cited in van Ommeren 2011). In addition to integrating liquidity, cost and credit risks into banking operations, banks are progressively facing market risks like, exchange rate and interest rate risk, otherwise it may be presumed that risk managers in banks carefully diversify these risks and closely track borrowers' actions in order to prevent bank failure

or financial difficulties. However, the monitoring of banks conducts, is very important to safeguard the sustainability and soundness of the banking sector due to moral hazard issues.

In recent times, the rapid speed and secure means of mediating funds and making payment for goods and services is one of the key functions of a well-developed financial system. This characterized the payment system development and focuses on the major instruments of making payment, for example, cheques, payment order, cash, debit and credit card and swift or wire transfers. A well-developed financial system should offer a wide range of diversified products and services from a formidable intermediary and must be a variety of financial instruments that offers different sources of finance at varying interest rate and maturities and also provides a reasonable rate of returns to clients in terms of risk and maturities. The extent to which a financial system provides support to the real economic sectors and to a large extent on the proficiency as to which intermediation occurs is considered as a sustainable developed financial system.

Banks are unique because they manage the payment system and aid the circular flow of money through which most economic payments are made. This system is essential because it is how we get money from one point to another. When this system shut down as in 2008, it then threatens the well-being of all of us to perform basic economic functions. The banking system especially in sub-Saharan Africa is the center where all the economic activities converge and also stand as crucial force in economic development.

### **2.3 Role of the Communication Sector in National Development**

In early studies and up to date, communication is considered to be the life blood of all business relationships and without effective communication a relationship of any form is good as dead. Communication plays a critical part in recent life style and with a major impact on economic growth. Telecommunication accounts as a major component that supports and promotes business growth and development and also the economy. (Sharif , 2017) stated that, communication is regarded as the blood flow of modern

economy that enhance the output level that will consequently provide meaningful support toward the various essential economic factors like growth rate, increase on gross domestic product (GDP) or per capital GDP.

The world is now a global village in this present era of globalization. Modern technology and newer innovations will help to create better future technological devices that will enhance existing one and meet future needs. the utilization of advance communication technology plays an integral part in the overall economic activities of financial institutions, manufacturing industries, value chain and other service institutions, the ongoing economic activities of government, stock markets and the private sector, all significantly depends on effective information and its respective availability.

The industry all over the world are experiencing some significant growth and development of advancement over the years. The well-developed nations do exert more energy on telecommunication improvement in order to maintain a consistent flow of communication, which will in turn enhance economic activities by the provision for better and more communication platform. Whiles, developing nations also engage on intensifying their communication facilities as it eminent and proves that telecommunication role in economic development is of great importance.

Developing countries as well as emerging economies, the communication sector is huge and one of the most considerable agents to drive overall economic development and stand as pillar to make the world a global village. (Sharif , 2017) also stated that, rapid developmental growth and telecommunication technology supports, have given rise to the urgency of the presence of telecommunication industries in any economy, as it is regarded as the most advance technologically and a vital tool for information sharing and also serves as the base in the establishment of a financial valuables commodity market place. The communication sector provides the appropriate connection by virtually connecting international financial market to that of the domestic market, which influences economic activities and in turn foster economic growth of a nation. by connecting the two and also the commodity



market, telecommunication provides the GDP of a nation with a constant flow of extra values. The communication sector plays a key role in emerging economy by enhancing productivity output level, foreign direct investment and very influential factor on some macro-economic factors such as GDP growth rate. The sector offers great contribution to all facet of life and lead the aids to trades activities in modern days business environment. (Kuofie, "et al"., 2003) stated that, telecom industries helps in jobs creation within a nation that eventually helps reduce the rate of unemployment and strengthen Ghana's GDP per capita . Katz and Koutroumpis (2012) provides a support that telecommunication is one of the most promising sectors for creating job opportunities. Between 2011 and 2012, in Senegal and Mali, telecommunication sectors created 8,100 direct jobs and almost 152,000 indirect jobs. (Jenny & Isaac, 2010) also supported the idea by stating that, telecommunication is such a blessing which enable the day laborers to call to find job opportunities rather than making a trip worth of USD 40. Osotimehin et al., (2007) and Stette (1999) explained that in the developed world most of the advanced countries have deregulated the telecommunication sector which actually allows more investment in telecommunication sector which in return enhance the advancement of telecommunication technology, growth in private sector development as well as more employment opportunities.

The communication sector has emerged from grace to grace and still be the leading force where most of the economic activities converges. Telecommunication has gained a strategic position in global economy and plays a pivoted role in all aspect of life. The communication sector consolidated its significant during the current pandemic as all activities are influenced and enhanced by information technology. Telecommunication takes center stage in all economic sector and also impacting our personal lives. As stated in his article (Sharif , 2017) Considered the telecommunication sector as modern-day science gift that is of verse different from other infrastructures. It brings together both the international and domestic market, business to personnel communication and stated further that, telecommunication is the main way to keep the flow of information sharing between and among businesses and people. Telecommunication has positive influence over the economy in respect

of GDP per capital and job creation and from a broad business perspective communication via telecommunication bridge the gap in the transaction of economic activities between boundaries.

Communication sector forms a fundamental part of the economy of the United States, primarily underlying all business operational activities, public safety parastatals. Direction 21 of the Presidential policies Identifies the communication sector as critical, because it provides an enabling function across all crucial infrastructures. In the early era of communication way before the emergence of the internet and other data network, the communication sector created a platform that aids businesses and people to communicate via voice and other means distance apart by voice and has over the time expanded to include more sophisticated gadgets to enhance collaboration between and among peoples, businesses both national and international.

The advancement and improvement of the communication and information technology supports and promote growth if only their implementation is effectively done. Other sectors within the economy also may immensely benefit in terms of service delivery and increased productivity from technological advancement.

#### **2.4 Banking Sector Development in Sierra Leone**

According to the published report by the Central bank of Sierra Leone (Leone, 2018), it stated that the banking system was healthy and stable as it met its capital adequacy ratio and also profitable, even though some banks do face challenges in their operations. As at the December 2018, it was recorded that all the banks met the minimum statutory paid-up capital of thirty billion leones (SLE 30bn) and with about 4% increase on the Capital Adequacy Ratio (CAR) from 34.20% in 2017 to 38.44% in 2018 and this is above the minimum statutory requirement of 15%. However, though the sector has been gradually improving and generally stable yet the bank penetration falls below average for low-income nations. Ghana was the only nation that recorded an above average ratings among nations within the sub-region that comprises of Sierra Leone, Nigeria, Gambia, Ghana and Guinea respectively.

The banking sector experienced an increased in deposit over the years coming from bank penetration, governments' payment to contractors and other sources from the private sector, and this gave rise to a significant increase on gross loans and advances of 18.2% as at 2018 from a 2.1% in the year 2017. The nations Credit as a share of GDP was very low and about 5% over the years. However, Credit as a share of GDP at regional level was observed that Liberia recorded 15.8%, Nigeria recorded 12.75, Ghana 11.1%, Guinea 8% and Gambia with 6%.

The nations commerce and finance sector benefited immensely from the banking sector as they accounted for the largest share of loan and advances facilities. The table below shows the percentage of loans and advances granted by the banking sector to various sectors within the real economy;

**Table 2: Sectoral Distribution of Gross Loans and Advances.**

<b>Sector (s)</b>	<b>% of Loans and Advances</b>
Commerce and finance	30.04
Construction	21.7
Business Enterprise	9.15
Transport and Storage	6.51
Personal Services	5.72
Manufacturing	7.43
communication	1.69
Agriculture	0.38
Mining and Quarrying	3.11
Forestry	0.89
Utility Services	0.59
Miscellaneous	12.79
<b>Total</b>	<b>100</b>

Source: Bank of Siera Leone Financial Development Report 2018

The above table clearly indicated that, the banking sector plays an essential role in aiding other sectors in their operations and stands as a solid rock in economic development as it reaches all sector of the real economy. The communication sector received 0.0169 of Le 1,660.26 bn granted in the year 2018. Even though seems small as compared to the other sectors it represents a huge amount in Leones that helps the sector to function well and meets it financial obligations over time.

### **2.5 Banking Sector Impact on the Communication Sector Financial Performance in Sierra Leone**

In the past twenty years Banking sector development and communication advances coupled with changes in regulations have not only transformed the banking sector and that of the communication sector, but have brought the two closer together. The Banking sector do now offer communication services and also the telecommunication institutions provides banking related financial services. Bank's in order to provide internet related services like ATMs, POS and other online services do employ the use of some communication line and extensively uses the telecommunication system to render services in locations far from the banks branches. Telecommunication institutions now provides some banking services like the credit cards issuing and processing. The sector also has succeeded in increasing the competition with the banking sector by providing services that were previously dominated by the banking sector, including financing, credit card processing and leasing services. In Sierra Leone this is slightly different, currently banking and communication companies strategically partnered to customize products to meet their customers' needs whereby customer will be able to commence transaction seamlessly via their mobile hand-set with full scale protection.

The role of banks in aiding the operational activities of the communication sector by providing concessional advances products to augment their smooth operational activities, grant loans and overdraft to finance capital investment and other projects, helps the sector on receivables and also offer cash and credit management. The convergence of computers and advance telecommunication gadgets have been the key factor responsible for the bonding between the two sectors.

The banking sector in Joint venture loans financed the establishment of a whole telecommunication company in the early 2000's even though the company struggled and failed to reach the big stage and eventual shut down, but serves as an evidence to the extent of banking sector impact to the performance of the communication sector in Sierra Leone. Banks plays fundamental role in the development of the general economy and a major player to the fast-developing communication sector in the country. All communication institution in Sierra Leone relied heavily on banking facilities for their sustenance and operational viability. The bank has over the years met their expectations and till to date. Evidence of which can be found in the latest Bank of Sierra Leone (Leone, 2018) report, which showed that the communication sector received .0169 in percentage of the total loans and advances granted to the industrial sectors within the economy. The Communication sector financial performance has over the year improved immensely due to the support from the banking sector and with the recent strategic partnership both are bound to a win-win relationship in the foreseeable future.

## **2.6 Banking Sector Development Indicators**

The banking sector of a nation stability and or vulnerability needs to be constantly assessed and evaluated to ensure financial soundness and development from time to time. The key parameters normally used to test banks stability and vulnerability is the CAMELS approach, the acronyms indicate Capital Adequacy, Assets Quality, Management Efficiency, Earnings, Liquidity and Sensitivity to the market place risks. These parameters are used to evaluate banking institutions individually in order to produce a measure for peer groups assessment like state owned banks, domestic banks, international banks and multinational banks. The entire banking system can also be assessed by the compilation of the aggregate individual indicators and can also be used to assess their credit exposure and adverse effect arising from their exposures to other sectors of the economy.

The camels provide a unique assessment to the entire banking industry ranging from capital adequacy which can be used to assess the capacity of the sector ability to withstand unforeseeable losses as institutional risk of insolvency is mostly driven by assets impairment. Assets Quality do assess the productivity of the sector entire loan and advances portfolio, the concentration and diversification in order to identify worthless asset and make provision therein. Management efficiency takes on the structure and efficiency of the management team in their capacity to ensure and enhance the health and stability of the institutions. Return on Assets and other profitability measure can be used to assess the earning capacity of the institutions as favorable earnings give the institutions the ability to make reserve for losses without resolving to the equity capital. Profitability ensure growth and promote expansions. Liquidity is the ability and capability to ensure that, the institutions meets their short-term obligations as they fall due. Banks liquidity position needs to checks constantly to ascertain the banking sector capability to absorbed shock. Liquidity parameters also assess and evaluate available liquid assets for further funding purposes and asset management. Banks are expose to many risks including market risk according to their nature of operations in regards to financial instruments. Market sensitivity measure the risk in respect of changes in the market price of interest rate, exchange rate, equity and proffer measures on how to handle such risk. Banking institutions are risky in their nature and needs to be constantly checked and regulated in order to ensure their continuity and enhance their productivity for a stable industry.

In notion to determining the Financial development of a nation some other indicators need to be incorporated especially those from empirical studies. (Levine et al. (2000); Abubakar and Gani (2013) cited in (Ragonmal , 2015)) stated that, grand total credit to the economy must form part as suitable measure of financial development and also suggested that, Monetary Aggregate which is the measure of the amount money in circulation within a country or economic sector and normally used as a proxy variable for financial development be included in the indicators for financial development. These indicators do brace the mobilization of savings that's enhances the provision

of credit, facilitates transactions and also accomplish the function of money as a medium of exchange. The financial depth or size of a nation is also considered to be an indicator of financial development and the liquid liability to Gross domestic product (GDP) ratio. It was argued by (Levine & Zervos, 1998) that, all these indicators provide limitations in relation to the proper identification as to which areas the system allocates capital.

In respect of the above-mentioned indicators, there are other indicators that are of essence in evaluating financial development in a particular nation, like the ratio of total commercial banking sector financial assets to Gross domestic product as a financial system proxy. The private sector credit ratio to GDP serve as a proxy in measuring the financial intermediary's development and the commercial banking sector average interest rate as also a proxy for accessibility and efficiency of financial intermediaries. Lynch (1996 cited in (Ragonmal , 2015)) in a study, identified some other key indicators in monetary aggregate like, bank deposits as quantity measure which is more a reliable measure from nation to nation over time and also broad money, which is responsible for measuring the amount of money in circulation within the economy can also be used as reliable financial development indicator proxy. Lynch (1996) cited in (Ragonmal , 2015) also stipulated that, it is difficult to accurately ascertain the actual cost of financial intermediation per country and comparison among nations cannot be assessed in respect of the vast difference that exist in variables in terms of population spread and financial sector design. On the other hand, Bank interest rate margin can also be used as an indicator to measure costs related to intermediation transactions.

The banking sector revolve the economy of Sierra Leone and ensure stability in the financial system. In order to truly ascertained the fully extent of the banking sector influence to nation building and economic improvement there is a need to carefully evaluate the performance of the banking system and establish it position in the economic as key team player in financial structure development. A well-developed banking system ensures to ease the flow of funds that facilitate economic activities and also regarded as an engine of growth.

## **2.7 Financial Performance and Performance Indicators**

Financial performance in literal terms means, an extensive evaluation and assessment over a given time frame of the financial standings and health of a given firm. Performance evaluation of firms is also considered as a control tool which is used to evaluate the firm's outputs and also reflect the effectiveness of its management. This type of control tool, besides being a method of evaluating the degree of success of businesses it also determines future trends.

Performance evaluation plays a crucial role as a source of information about a firm's financial outcomes and the internal operations shown in the financial statements. Such information is useful for sound decision making and also of great use to investors, stake holder and regulators. (Neely, 1999) stated that, Financial evaluation helps determines a firm current position, identifies the risk that firms are expose to, determines management capability in generating an adequate rate of return and whether investors and stakeholders are realizing a reasonable rate of return on their investment. Performance indicators used to evaluate an institution varies from organization to organizations and in selecting the measures depends on the organizations' objectives, in order to ensure a true and fair evaluation method that will be of benefit to the institution. Davis and Albright (2004) posited that, performance measurement system applications are frequently suggested or recommended in order to improve strategic implementation and bolster increased institutional performance. (Krstic & Sekulic, 2013) also postulated that, present days performance measurement models suggested the use of both financial and non-financial criteria and in accordance with business model and strategy.

Performance evaluation of firms is mainly done by applying accounting standards and principles in set of financial statement preparation and presentations. In lieu to the critical nature and numerous benefits therein, the process is undertaken in timely manner to and in a manner that it would be easy to verify, interprets and understand. Financial statements are in both quantitative and qualitative form which helps users to be able to fully



comprehend its content and make valuable decisions. Financial statement can serve as road map, for management to direct the operations and activities of firms in the right direction to meet present and future challenges for successful continuity and sustainability.

Financial performance concept is a conclusive results of management decisions, firms' strategic policies and cumulative effects on liquidity, liability and assets management. The best way to analyze financial position is to employ the use of financial ratios in order to calculate vital financial ratios as selected by management for at least two to five years for the purpose of trend comparison and informed decision making. Ratios are a vital tools to aid firms to compare year after year measurement of performance and progress. Financial ratios are effective tool to compare two or more component of financial information. Financial data are expressed in ratios or percentages and important that, they are analyze collectively. In as much as ratios have limitations and explain little about the firm's financial history, one good ratio result and or with bad results cannot form a basis of management decisions, as it is of great importance to review the ratios over the past years to determine the trend. Management can carefully make informed decisions on the nature of the trend established from the analyzed ratios.

Profitability ratios tells us about how effective and efficient management is using available resources to generate profit on a firm's assets. It is important to make profitability analysis in order to ascertain the firm's direction and also understand its current position for better decision making. The preferable profitability indicators are assets returns (ROA), equity returns (ROE), and net interest margin (NIM). Profitability ratio indicators for firms may be used to calculate profitability and firm's health.

(Do, "et al"., 2020), postulated that Return on Assets (ROA) is a significant measure of an entity's profitability compared towards the total assets. The Return on assets provides investors with an understanding of how effectively management invests its capital to produce earnings. The ratio is displayed as a percentage and computed by dividing the total yearly earnings or, in other

words, the total income net after interest and taxes to total assets and the higher the better (**Net Income /Total Assets**). The Return on assets definition is as follows:

### **2.7.1 Return on Assets (RoA)**

ROA ratio will determine the financial strength of a firm and will provide an insight to investors as to whether or not the company is effectively converting its assets into net income. A high return on assets implies good performance as it indicates that the firms earns more and controls expenditures better. ROA has been used in many previous studies as in (Saadallah & Salah, 2019), among others. This study utilize it uses in order to determine the profitability in respect to the communication sector financial performance.

Return on Equity (ROE) is similar to that of the Return on assets and is commonly used in several studies primarily to reflect profitability. This ratio tells how firms generate income in relation to stockholder's investment. The ROE is considered as a profitability indicator because it illustrates how much profit a company earns from the amount of funds that shareholders have invested. It can be calculated and presented into percentage form by use of the following formula; **net income/ shareholders equity**

### **2.7.2 Return on Equity (RoE)**

A relative high Return on Equity (ROE) is also a good signal of growth, as it indicates that the firms are making profit with available funding and only new funding may be needed for capital investment. The net income for the entire fiscal year is included, (before dividends were distributed to the holder of the common stock but after the holders of preferred stock) and preferred shares are not included in the equity of the shareholders. Previous studies show that, ROE is a good profit indicator as used in most studies such as Sidra Ali Mirza & Attiya Javed Bojare in 2013 and many others. There are other profitability ratios but not closely related to this study.

### 2.7.3 Debt Ratio

This ratio indicates how much debt is used to finance the firm's assets and can also be considered as a liquidity measure and can be calculated by dividing the current debt (liabilities) by the total liabilities. The purpose of this ratio is to determine what percentage of the firm's total debt is current, or due, in the next 12 months. A lower percentage generally indicates better performance. It can be calculated as  $\text{Total Debt/Total Asset}$  for this study.

Measuring and evaluating firm's performance using ratios is relevant and subjective depending on the mode of operation of firms and management decision. There are more performance related ratios like liquidity, management efficiency, capital structure and market sensitivity. Ratios are relevant but one must bear in mind that they have limitations and might not be suitable in all situations.

Firms performance financially is of key importance not to only to investors, regulators etc. but also to scholars interested in further studies to be able to conceptualize factors affecting firm's financial performance and also able to join in the debate in finding possible answers to the existing problems. Financial performance does evaluate and measure the financial health of a firm, the management and leadership capabilities and other factors of relevance. A high financial performance of a firm indicates how efficient and effective the firm is in allocating and utilizing its available resources and in turn contribute to nation building. The main focus of stakeholders in a firm is the ability of that firm to create wealth in returns to investment. A firm profitability would open more room for expansion and help maintain stability and continuity.

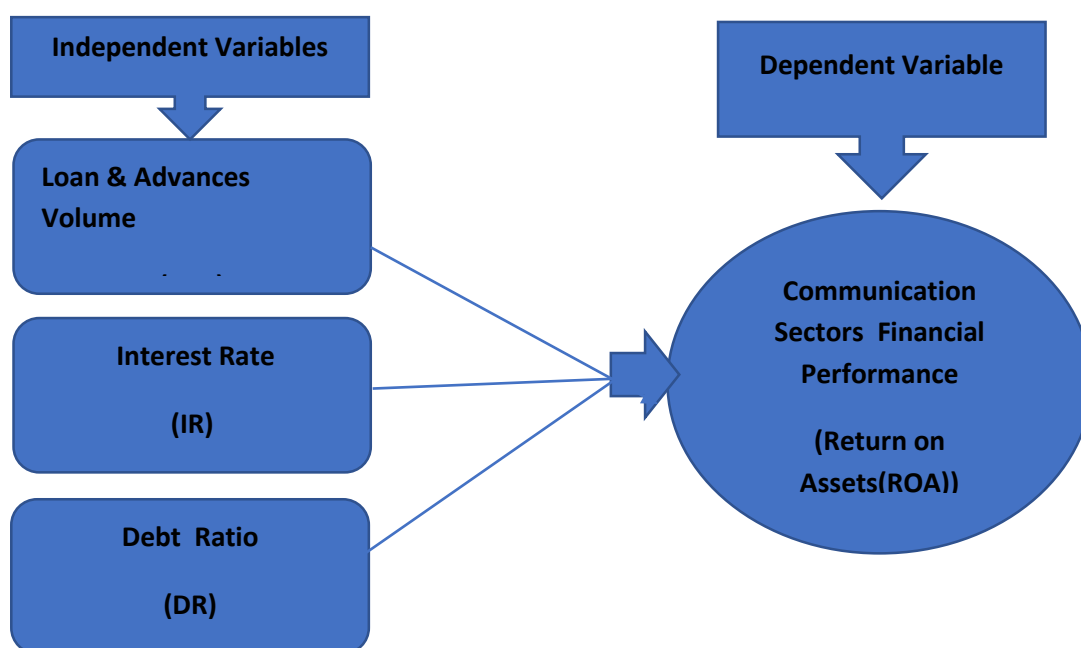
Firms performance evaluation is essential for the useful use of stockholders, investors, potential investors, regulators and the economy. Investors are concern about their returns on investments and a well performing firm can bring high and long-term wealth for investors. Moreover, a well favorable financial performance of firm will boost income flow, ensure continuity, enhance product quality and also foster sustainability. This study aims to investigate the financial performance of the communication sector in relation to banking sector

development and the concept and literature on financial performance is of an essence in order to have a broad understanding of financial performance.

## 2.8 Conceptual Framework

The conceptual framework illustrates what you expect to find in this study and define the relevant variables and map out the relationship that occurs between them. The study seeks to identify the determinants of profitability in respect of financial performance of the communication sector in relations to banking sector services, thus independent variables includes loan and advances volume, interest rate, debt rate and Return on Assets (ROA) as the independent variable.

**Figure 1: Conceptual Framework**



## **CHAPTER THREE**

### **THEORETICAL AND EMPIRICAL REVIEW**

#### **3.1 Introduction**

The previous chapter provide some theoretical context on the research topic and a need for relevant empirical literature is of essence. This chapter provide readers with some relevant review on past study conducted on the following aspects, period and sample utilized, the design and methodology, results and recommendations. Analysis of empirical literature would help identify gaps in literature for the study to be undertaken. Results and finding from this research work, can then be compared and validated by the results and views of the reviewed literature.

There is not that much literature directly related to this study, especially in sub-Saharan Africa but vast literature exists on the impact of the banking sector development to economic development, agriculture, manufacturing and also to other economic sectors and with lot of conflicting and contradicting results. A lot of hypothesis and variables has been established to determine the exact relationship. This study shall incorporate both theoretical and empirical literature, methodology contribution and tries to develop hypothesis to be able to come out with logical conclusion and a result that would add to existing literature.

#### **3.2 Related Theoretical Literature**

In the early age of economic development economist (Schumpeter, 1952) in his book the theory of economic development originally published in 1911 observed that, the financial market especially the banks played a significant role in the growth of the real economy. He argued that, banks mobilize and

channel funds efficiently which, provide the necessary credit to entrepreneurs to finance investment in physical capital, adopt new production techniques thereby spurring technological innovation and setting stage for the creative destruction process, which sum up to economic growth. His argument was supported by (King & Levine, 1993) which present a cross country evidence consistent with that of Schumpeter's view that financial system can promote economic growth, using data on 80 countries over a 30years period from 1960 to 1989. Various parameters implemented to test financial development are strongly associated with real per capital GDP growth, the rate of physical capital accumulation and improvements in the efficiency with which economic employ physical capital. His view implied that financial development causes economic growth, both Schumpeter and Levine hypothesis do not have enough base due to analytical issues.

The supply-leading hypothesis was logically argued out by McKinnon (1973) in his studies, he argued that economic growth is hindered in a repressed financial system which is, characterized by interest rate ceiling, directed credit policies and high reserve requirement. According to him, this phenomenon lead to low level of savings, credit rationing and low investment. Therefore, he proposed financial liberalization which will allow the real rate of interest to rise thereby raising the financial savings. The crux of the matter is that, an increase in saving relative to real economic activity leads to an increase in financial intermediation, which in turn leads to an increase in productive investment and economic growth (Mckinnon, 1973). (Ayadi, "et al"., 2008) in their work argued that, The policy implication of this viewpoint is that, formulating policies that liberalize the financial system and enhance financial intermediation will result in high economic growth. However, most developing countries who implemented these policies raises many questions on the viability of this hypothesis as they failed to realized reasonable success, and even the country this study is conducted is a victim, as the financial sector was liberalized through the adjustment programmed implemented in 1988, yet the financial sector failed in its primary function of financial intermediation and promoting the growth of the real economy.

### **3.3 Banking Theories**

Theories of banking in the early era of banking has not been conclusive and failed to capture the actual role that banks play in economic development and on how bank create money. The 2007 to 2009 financial crisis reignited scholars' interest to determined the roles of banks in the economy and examined the functions of banks in creation of money. Many writers focused on the power of banks to create money ab initio. Professor Richard A. Werner, a professor of international banking and sustainable development at Southampton university in the United Kingdom, argued that, "Money creation by banks is a key causal factor driving economic performance and one that has been seriously overlooked in finance and economics". (Werner, 2016) in his study proposed three (3) banking theories to established what banks actually do with money and they are as follows;

#### **3.3.1 Financial Intermediation Theory of Banking**

Financial Intermediation literally means the fundamental process of channeling funds from one sector to the other. Thereby bridging the gap between the savers and the ultimate borrower. It also the process of pooling excess fund from the surplus and channeled to the deficit sector for production and other investment purposes. Banks do mobilized funds from savers and lenders at low interest and make them available to borrowers or the deficit group in form of loans and overdrafts to finance projects investment plans and other business-related activities at a higher rate. Banks in their nature and also in their intermediation role are expose to risk and if not appropriately handled would result to instability and crises eventually.

The financial intermediation theory also postulates and emphasizes on the understanding that banks play no role in economic developmental activities, they are considered as a simple mediator between group for businesses, people with excess fund and to businesses, people who need funds on credit. The theory further indicated that banks are merely financial intermediaries that are not so different from other non-financial institutions. (Ravn, 2019) stated that, banks mobilize deposits and lend out to borrowers meaning that, banks borrow from depositors with short maturities and lend to borrowers at longer

maturities” (Werner, 2016, p. 362 cited in (Ravn, 2019)) also stated that banks cannot lend without deposits. (Werner, 2016) in his general theory stated clearly that saving first needed for investment to take place. This theory provides justification for not including the banking sector as players to economic development in as much as they are assumed not to play any substantial role in the economy.

### **3.3.2 Fractional Reserve Theory of Banking**

Fractional Reserve theory asserted that banks must not lend all the fund mobilized from savers and must reserve a certain portion. The theory further stated that, banks are required to keep in cash in hand certain amount of depositor’s fund and must not keep all. Regulators does impose ceiling to the nature of reserve to be held in accordance to the level of deposits held in order to provide cushion for depositor’s withdrawal as the need arises. The central government uses fractional reserve as a tool to implement monetary policies. Banks are considered to be money multipliers in relation to the fractional reserve theory. According to Werner (2014a, pp. 4–6 cited in (Ravn, 2019)) many writers on banking have argued that this view is incorrect. Banks do not merely recirculate extra money. However, banks are able create new money by lending and relending savers deposits whiles retaining only a fraction in reserves.

The banking theory of fractional reserve embraces the view that, deposits injected into the banking system would results in a multiple expansion of more deposits and is refer to the “miracle of the fractional reserve system”. The theory makes it clear that, no individual bank can create multiple deposits when there exist many banks and also individual banks may not recognize the role, they played in the creation of multiple deposit process. They only recognized that they can able to make more loans in respect on an increase in deposit. The fractional reserve banking system provides a special relationship with depositors as interest are paid on their deposits instead of the bank charging interest for their services in case where this system is non-existence. The system allowed banks to earn revenue by making effective use of depositor’s money and share the interest received from borrowers with the depositors.



### **3.3.3 Credit Creation Banking Theory**

This theory opposes to that of the financial intermediation and fractional reserve theory. The credit creation theory asserted that banks are not financial intermediaries or banks are with the capability of creating money and credit out of nothing as they grant loans or purchases an asset. However, from this view point banks are not required to mobilize deposits or allocate reserve fraction of their deposits to lend. This theory directly opposes the previous two, that banks originate loans in order to create deposit. This theory serves as a help to understand the money creation processes. The theory proposes that individual banks can create money and banks do not provide credit or lend money solely from deposits mobilized from savers. The banks instead create deposit as a consequence of lending.

Banks in their money creation capability are limited by their motivation to ensure that interest received on loaned money and the cost of bank capital, there is an appropriate spread in between. Banks are tended to reduce on their interest rate charged to borrowers and also reduce banks' profitability in situation where its lending rate is expanding. Banks must always ensure that, they make adequate provision or reserve to be able to meet unanticipated losses arising from bad and doubtful debts as they execute the normal business.

### **3.4 Related Empirical Literature**

(Medyawati, "et al"., 2011) study aimed at analyzing the influence of banking development indicators, agriculture sector and manufacturing industry sector on economic growth in Indonesia using Var, a time series econometrics model with assets, credit, third party fund to explained economic growth in agriculture and manufacturing industries. other two dummy variables, monetary crises and implementation of Indonesia banking architecture. The study concluded that there is empirical evidence that banking development, agriculture sector and manufacturing industry sector affects the economic growth in a relatively small margin. In (Olusegun, "et al"., 2014) results showed a positive impact in their paper that reviewed the impact of commercial bank lending's on Nigeria's

aggregate economic growth for the period 1970-2011. It also reviewed the impact of commercial bank credit on the growth of the service sector and other sectors, where sub-sectors of transport/communication and public utilities; government and personal/professionals respectively for the same period. A regression analysis was undertaken with a model that related to the non-oil GDP as dependent variable to commercial bank credit for current and one-year lagged period as the independent variables. The linear regression model showed that, the previous year's loans and advances to services sector had more positive impact on economic growth compared with the current year's loans and advances. The results showed, that both previous and current year's credit to others sector had inverse relationship with economic growth. In terms of the subsectors, the previous year's credit to public utilities and transport/telecommunications sub-sectors showed positive contributions to economic growth while the impact of that of current year was negative and recommended as thus, banks need to monitor more closely their lending's to these two sectors of the economy who deal on intangibles. Even though it is a borrowed work, it fails to realized the loan and advances terms and maturity and their considerable impact on these two sectors overtime as it just captured previous and current year.

(Abubakar & Gani, 2013) work revealed that, there is existence of a long-run relation between liquid liabilities of commercial banks and trade openness to that of economic growth whiles, credit to private sector, interest rate spread and government expenditure negatively influences economic growth. This research work employed the use of Johansen and Juselius (1990) cointegration approach and Vector Error Correction Model to re-examined the long-run relationship between financial development and economic growth. Another work done by (Bada, 2017) which study examined the effect of banks credit on agriculture and manufacturing output on Nigeria economy for 31 years using time series data and the Vector Autoregression model on Eviews8 to established the relationship. Interest rate, prime lending rate, money supply, exchange rate is used as independent variables and Agricultural output and manufacturing output as dependent variables. Results revealed that, banks

credit have a positive impact on the output level on agriculture and manufacturing.

In another study done by (Azege, 2004) that empirical investigated the relationship between financial intermediaries' level of development and economic growth making use of the coefficient correlation techniques and results revealed that, a moderate positive relationship exists between gross domestic product and aggregate deposit bank credit overtime. This study cannot be given credence for the use of a non- parametric statistics. On the other hand, (Cappiello, "et al"., 2010) From their working paper it was revealed that, bank loans and credit standards do have significant influence on real economic activities after using an identification strategy and a panel approach directed on a set of European countries as Belgium, Spain, Italy, Austria, Portugal, Greece and the Netherlands. Further research done on related study by (Toby & Perterside, 2014) also examined the role of banks credit in financing the agricultural and manufacturing sector in Nigeria from 1981-2010. Ordinary least square model and descriptive analysis were used to determine the results. Findings reveals that, the role of banks is limited in facilitating the agricultural and manufactural sector contributions to economic growth. (Chinweoke, "et al"., 2015) provides support as their study investigated the impact of bank loan and advances from 1994 to 2013 to the agricultural and manufacturing sectors on economic growth in Nigeria. Ordinary least square technique was used to established the relationship and result revealed that, bank's loans and advances to the agriculture and manufacturing significantly impacts economic growth. In the used of some other models and methods, (Uzomba, "et al.", 2014) in their study using ordinary least square regression and test for stationarity, Causality test, co-integration test was also done to investigate the impact and the determinant of deposit money banks loans and advances on the agricultural sector in Nigeria. Findings revealed that, banks loans and advance have a positive impact on the agricultural sector performance. During the same year (Ogar, Nkamare, & Charles, 2014) conducted their study using OLS of multiple regression to determine the relationship between commercial bank loans on manufacturing sector performance as they investigate the impact of commercial bank loans on the

manufacturing sector in Nigeria. Secondary data on manufacturing performance, bank's loan and banks' interest rate were analyzed. Results revealed that, banks loans significantly impacted the performance of the manufacturing sector and recommends that, credit facilities at an affordable interest rate be made available to the manufacturing sector in an adequate manner.

In a study done by (Carlo, "et al"., 2003) they tested the long-term relationship between banks credit growth and the private sector in central and eastern Europe using a set of economic and industrial variables on a panel of non-transitional industrialized and developing countries. Result proved that, a long-run relationship exists with banks credit growth and the private sector, the manufacturing sector and the production sector in Nigeria which is considered as a developing nation (Akujuobi & Chimaijemr, 2012), in a study conducted for the period of 1960 to 2008 in Nigeria in order to examined the impact of bank credit to the production sector in Nigeria. The use of ordinary least square model was employed and finding revealed that, a long-run relationship exists between bank credit and the production sector and also economic growth. Further findings also revealed, a bi-directional causal relationship exists between the two explanatory variables and Gross domestic product and bank credit shows a significant contributor at 1% significant level on mining and quarrying sub-sector. However, the study concluded by asserting that bank lending to the production sector has underperformed in relation to economic growth contribution. (Sogules & Nkoro, 2016) provide a support In a research that investigated the impact of banks credits to agricultural and manufacturing sectors contribution on economic growth using co-integration and Error Correction mechanism on time series data from 1970-2013. Finding revealed that, there is evidence of a long-run relationship between banks credits to agricultural and manufacturing sector and economic growth and further revealed, the error correction results came up with an insignificant negative impact of the banks' credits to the agricultural sector on economic growth. The study recommended that, banks credit directed to the agricultural and manufacturing sector must be properly monitored to ensure the funds are used for the intended purposes.

(Saadallah & Salah, 2019) study was focused to establish the impact of banking finance at a normal interest rate on small business financial performance in Egypt. Loans volume at a normal interest rate and firm leverage and firm age are used to explain financial performance dependent variables of ROA, ROE and Net profit margin. Results showed that, loan volume has a negative significant impact to financial performance of small business, firm leverage has a negative significant impact to financial performance of small business and firm age has insignificant impact to financial performance of small business. (Towose, 2009) also investigated the effect of bank loans and advances on industrial performance in Nigeria between 1975 and 2009 by using Cointegration and Error Correction technique approach for analysis and came up with a result which indicated that, industrial performance co-integrated with all the identified explanatory variables. Industrial sector as dependent variable is proxied by real GDP, while Commercial Banks' Loan and advances to Industrial Sector (BLM), Aggregate Saving (SAV), Interest rate (INT), Inflation Rate (INF) are the independent variables. (Muchingami, "et al"., 2017) provide support for Towose,2009 and in contrast to that of (Saadallah & Salah, 2019) by examining the impact of bank lending on manufacturing sector performance in Zimbabwe. E-views 7 was used to analyse times series data from 2009-2015, computing an ordinary least squares (OLS) regression model. Interest rate, Exchange rate and inflation rate were adopted to explain Manufacturing Index as the dependent variable. The study established a positive relationship between bank loans and volume of manufacturing index and recommends that, the monetary policy should emphasize on mandatory sectorial allocation of bank credit with appropriate disbursements to boost the flow of credit to the manufacturing sector. The paper does examine the impact by using different approaches and all adopted loans volume as independent variable and came up with a conflicting result. In another paper from (Akinola, "et al"., 2020) that examined the effect of banks financing on industrial sector growth in Nigeria, with the objectives to establish the effects of domestic money supply, banks credit and maximum bank lending rate on industrial sector performance in Nigeria. A linear regression model using ordinary least square model was used to estimate the individual effects of banks financing

variables measured by banks credits, domestic money supply, and maximum bank lending rate on industrial sector growth measured by manufacturing sector output. The study revealed that industrial sector growth is strongly impacted upon by banks credits, domestic money supply, and maximum bank lending rate. The study concluded that, there is positive significant relationship between banks credits, domestic money supply and growth in the industrial sector.

(Njeri, 2021) in a study sought to determine the influence of credit management on financial performance of Dairy cooperatives in three (3) Counties in Kenya. The study designed was descriptive panel research design and secondary data was used for analysis with a target population of about four dairy marketing cooperatives with a total population of one thousand two hundred and forty-five (1,245) dairy registered farmers covering a Ten (10) years period from 2009-2018 was obtained. Data were analyzed by using a multiple panel regression model. The results revealed that credit management positively influences return on investment and the test for significant revealed that, credit management influence on return on investment was statistically significant. Recommendations were made for all dairy marketing cooperative officials and staff be trained on credit management. This project directed only on the impact on financial performance and fails to capture key variable that determines the total performance of the sector.

(Rafindadi & Zarinah , 2013) study examined the dynamics of financial development and economic growth in 38 sub-Saharan African continents using Panel ARDL model for 30years period from 1980 to 2011, finding revealed that, there was a significant long-run and short-run relationship in all 38 selected Sub-Saharan African states. Gross domestic product per capital, total trade share of gross domestic product, Gross fixed capital formation and total population are used as dependent variables and Financial development factors as independent variables. In their study (Alsaleh & Abdul-Rahim , 2019) provides support to that of (Rafindadi & Zarinah , 2013) and also made use of panel ARDL model and causality analysis to investigate the relationship between financial development to that of bio-energy consumption in the

European union countries from 1990 to 2013 and results revealed that, financial development has a positive impact on bio-energy consumptions in the selected European countries using the following variables Bio-energy consumption as dependent variable and Gross domestic product per capital, carbon dioxide per capital , Financial Institutions and Financial market as independent variables.

(Chakraborty & Ghosh , 2011) in their study tries to established the relationship between financial development and economic growth using fully modified ordinary least square (FMOLS) on Panel data from 1989 to 2006 and five Asian countries that suffered the worst during the 1997 financial crises were selected. The panel unit root techniques and cointegration are used to attained the results. Result reveal that financial development and growth is not that much affected by the crises. Also in a study done by (Kurniawati, 2016) aimed at investigating the long-run relationship between financial development and economic growth by using panel data and Fully modified ordinary least square model (FMOLS) for Fifty (50) countries for thirteen (13) years from 2000 to 2013. The cointegration techniques was adopted and results revealed that, there exists a long-run relationship between the two in three (3) middle east countries. The result for the four regions, growth positively affects financial development in European countries and vice versa, on the other hand, in America, Middle East and Asia Oceania, financial development can be cause by economic growth but financial development cannot cause economic growth. (Muhammad, "et al.", 2018) provides relative support in their work to empirically established the role of the banking industry n economic development making use of the FMOLS and DOLS and panel VECM test. Panel unit root test, panel cointegration test to establish the relationship. Findings revealed that, there is an existence of a positive bi-directional causality relationship between financial development and economic growth. In a study done by (Bist, 2018) also in support of the previous one by using the same estimation model, that seeks to investigate the long-run relationship between Financial Development and Economic growth from a panel of sixteen (16) African and Non-African countries for 20 years period starting from 1995-2014. The study employed the use of fully modified least square model

(FMOLS) to establish the relationship. The result revealed that, a cross-sectional dependence exists across the countries and the Pedronis Panel Cointegration analysis provides a clear support for the hypothesis that a long-run cointegration relationship existed between financial development and economic growth. Result further revealed that financial development has a significant positive impact on economic growth.

(Ragonmal , 2015) conducted an empirical analysis using time series data from 1983 to 2013 to investigate the impact of financial development via commercial banking on economic growth in Vanuatu. The Vector error correction (VEC) model was used to established the relationship, the Unit root estimation model was used to check for stationarity and the Johansen Cointegration test was used for cointegration. The result disclosed that, there is a significant positive relationship between financial development and economic growth and causality test revealed a positive short-run relationship and also a long-run relationship do exist between the private sector credit and growth. A moderate support was provided by Liang, Zhicheng (2006) cited in Henny et al,) in a study of rapid economic growth and financial development in china recently over years which have been accompanied by widening income disparity between the inland and coastal regions. The study made use of panel data set for 29 Chinese provinces for 12 years from 1990 to 2001 and the Generalized Method of Moment model was used. The result revealed that, financial development significantly promotes economic growth in coastal regions and not in the inland regions as the nexus of weak financial growth may have aggravate China's regional disparities in the inlands provinces. Another study done by Esso (2009) cited in (Rafindadi & Zarinah , 2013) produces a mixed findings that revealed that financial development and economic growth have a long-run relationship in a these four (4) countries ( Cote d' Ivoire, Niger, Togo and Guinea) and a negative long-run relationship of financial development and economic growth discovered in cape Verde and Sierra Leone, the country in which this study is conducted. The causality test showed financial development do promotes economic growth in Guinea and Cote d' Ivoire only.



In contrast to the direction of the above findings (Demetriades & Hussein, 1996) result produces a negative relationship between financial development and economic growth. (Zang & Kim, 2007) in their study provide support to (Demetriades & Hussein, 1996) with the same study the following year using Sims-Geweke Causality tests in large panel data and found no evidence of any positive unidirectional causal like from financial development indicators to economic growth. (Abu-Badar & Abu-Qarn, 2006) in their working paper on financial development Nexus using time Series data from middle eastern and north African countries to examined the causal relationship between financial development and economic growth from 1960-2004 .VAR model ,the application of the Granger causality tests using the cointegration and Vector error correction (VEC) on four different measures of Financial development to produce a results the revealed a weak support for a long-run relation.

(Ogunlokun & Liasu, 2021) research work examined the effect of bank financial intermediation on the performance of agricultural sector in Nigeria from 1992 to 2017 using secondary time series data with agricultural sector output as dependent variable and bank credit, gross savings deposits and deposit interest rate as independent variables. Autoregressive Distributed Lag (ARDL) Model was employed for estimation. The findings showed that, there is evidence of long-run equilibrium and most of the banking variables shows a positive insignificant impact on agricultural performance. In moderate support to this work (Lawal, "et al.", 2019) in their work that examined the effect of bank credit on agricultural productivity in Nigeria and also to ascertain if there exist a causal relationship between the two. Secondary time series data with the following variables bank credit, Interest rate, government spending on agriculture and agricultural Credit Guarantee scheme. The Toda and Yomamoto granger non causality model was used to established the relationship. Variables were tested for stationarity using the Unit Root Test and the Johansen Co-Integration Test for long-run evidence and indicated that, there is no evidence of a long-term relationship existed among the variables. Vector Autoregression Estimates Decompositions Test was conducted to bring forth the contribution of the endogenous variable in order to forecast other variables before the Toda and Yamamoto non granger causality test is

conducted to determine if there is existence of a causal relationship among variables and resulted that, there exist unidirectional causality relationship between the two. (Okere et al., 2020) in their study provided an opposite result in respect to the ECM and also provide some support to the result as they seek to investigate the effects of bank credits on the manufacturing sector output in Nigeria from 1981- 2018. Secondary source of data was used and adopted the ARDL bound cointegration model for estimations. The bound test revealed that, all variables of interest are bound together in the long-run and error correction term displayed a negative and statistically significant. The error correction model outcome revealed that, bank credits shows a significant relationship with the performance of manufacturing sector and the study recommend thereafter, a reduction in lending rate in respect of the covid-19 response to institutional sustainability.

(Onder & Ozyildirim, 2013) this study strives to examined the lending activities of both privately and publicly owned banks in Turkey using data sourced from 1992 to 2010, to ascertained the effects credit have on economic growth. The study focused on the impact of banks' facilities on agriculture, infrastructure and election periods. The study findings indicated that, banking facilities impact on agriculture, infrastructure and election winning strategy. In another study by (Kumar, "et al" .,2017) employed two stage least squares (2SLS) regression estimation techniques on large national farm household data set from India aimed at examining the effect of credit on farm income and household farm consumption and results reveals that credit plays a significant role in enhancing net farm income and per capita monthly household expenditure. In support to this, other research work done by (Aninwagu, 2016) in a study that tries to examine the impact of bank credit or loans on agricultural sector performance in Nigeria between 1982 -2016. The research adopted the ordinary least square (OLS) techniques of multiple regressions to analyse the data. Secondary sources of data are used and findings revealed a positive and insignificant impact of interest rate on agricultural performance and also bank loans and advances have a positive significant impact on livestock, production and thereafter concluded that a deposit money bank credit is relevant in promoting the agricultural sector performance. (Nakazi & Sunday, 2019) also

provide some support as their study focused on examining the short-run and long-run impact of the commercial banks' credit on agricultural sector growth in Uganda. Using quarterly time series secondary source data and over a period of 10 years from 2008 to 2018. ARDL model was adopted to estimate the short-term and long-term relationship between bank credit and agricultural gross domestic product performance. Findings discovered that, bank credit have a significant positive impact in the long run on agricultural performance and credit to production is found to have a much higher impact on agriculture output compared to credit to processing and marketing. short run results reveal, bank credit does not have an instantaneous impact on agricultural performance. The study provides evidence that banks credit significantly contributes to Uganda's agricultural sector GDP. The study provides evidence that credit has the highest impact on agricultural sector performance. (Ikechukwu , 2015) also provides support in his piece of research seeks to investigate the relative responsiveness of sectoral performance to changes in interest rate and credit allocation in Nigeria using quarterly time series on secondary data over a period of 23 years. The Granger causality test was adopted to examined the sensitivity of sector output to changes in interest rate and credit. Result revealed that, a significant response to credit allocation on various sectors of the economy and interest rate does not meet with similar response and concludes that reducing interest rate to influence sector output growth for Nigeria is ineffective while efforts should be channeled at selective credit allocation and a mix of monetary and fiscal policy to achieve the desired macroeconomic short term and long term goals. (Sule & Prof Odi, 2020) also produced the same result in their study aimed to examine the Commercial banks' lending interest rate and the performance of some selected economic sectors of Nigeria within the period 2000-2018 with the objective to determine how banks' lending interest rate affect loan allocation to various sector within the economy. A simple linear regression model was adopted to estimate the relationship and to determine the extent of the relationship between the dependent variable and independent variables the Pearson Correlation was used. The ANOVA test was also utilized to ascertain the examined variable significant differences. Result shows a significant relationship between lending interest rate and loan allocated to various economic sector and recommended

that government to lower lending rate and increase credits facilities to the sectors.

(Hacievliyagil & Eksi, 2019) The study seeks to examine the relationship between bank credits and manufacturing sub-sections growth and performance with industrial production Index as dependent variable. Autoregressive distributed lag (ARDL) model and bound co-integration test were adopted to establish the relationship. Results reveals that, an increase in bank credit to all sub-sector leads to the rise of industrial productivity, except for machinery. The Toda Yomamoto causality test results, revealed some different degrees of causalities that in all sub-sectors except machinery and chemical sub-sectors, causality relations were observed at different grades beginning from loan interest rates to industrial production. Using a difference model (Dr. Ebi & Dr. Emmanuel, 2014) came up with similar results but with conflicting notions in their study that is focused on investigating the effects of commercial banks credit on Nigeria industrial subsectors within the period 1972 and 2012. The Error Correction Model (ECM) was adopted to provide objective estimations for the output response of the three subsectors, manufacturing, mining and quarry, and real estate and construction to bank credits and also the response of aggregate output of the entire industrial sector to subsector's output and bank credits. The findings indicate, bank credits positively and significantly impacted the manufacturing sub-sector, bank credits to mining and quarry also shows a positive and significant impact. Interest rate proves to be insignificant of industrial sector and industrial sub-sectors outputs, exchange rate also shows a negative and significant determinant of industrial sector's outputs in Nigeria. A study with different set of variables by (Yua et al., 2021) was conducted to examines the role of deposit Money bank credit on Industrial output in Nigeria with the objectives to ascertain the relationship between deposit money banks credit, inflation rate and lending rate, money supply on industrial performance. Time series secondary data from 1981-2018 were used and the ADF, ARDL Bound test and Parsimonious regression was adopted. Results reveals that, deposit money bank credit and money supply have significant relationship with industrial output and Inflation rate and lending rate have an insignificant

relationship on industrial output. Further results indicated that deposit money bank credit impacted industrial output.

(Nwabuisi, "et al"., 2020) the research study investigated the effect of bank credit on the performance of manufacturing sector in Nigeria using the DOLS model and with the ex post facto research design with bank credit, interest rate and exchange as independent variables and manufacturing output as dependent variable on annual time series data from 1981 to 2017. Results revealed that, bank credit and interest rate have a significant positive effect on manufacturing sector performance while exchange rate has a negative significant effect on manufacturing sector performance and recommends that's policy makers institute policies to reduce the interest rate to stimulate landings. In (Ugwuanyi, 2016) work provide support in respect of bank credit but different in interest rate in a study that examined the impacts of commercial bank credit on the growth of manufacturing sector in Nigeria with the use of annual time series data for the period 1980 – 2015 obtained from secondary sources. Autoregressive Distributed Lag (ARDL) model was employed for estimating the coefficients and the variables were tested for stationarity using the Augmented Dickey-Fuller (ADF) Unit Root Test. Variables developed for the study are manufacturing value added, Lending interest rate, exchange rate and bank deposits and the study identified lending interest rate and exchange rate as the major constraints to manufacturing sector performance. Findings from the study revealed that, both interest rate and exchange rate have a significant negative impact on manufacturing performance and recommended that lending interest rate should be reduced to aid the sector operational capability. (Asom & Ijirshar, 2020) provide full support to that of (Ugwuanyi, 2016) in their study aimed at empirically examining the impact of deposit money banks credit on the performance of agricultural Sector. Secondary data were used from 1986 to 2014. Test for normality, stationarity, cointegration were done to ascertain the viability of the variables and results proved satisfactory for processing. Results revealed a positive and significant impact of deposit money banks Credit on agricultural output growth in the long run and lending rate however, have negative impact. The error correction model shows a 19.5% system corrects initial disequilibrium to long-run equilibrium per yearly

bases and recommends a reduction on lending rate to encourage or increase investment in the agricultural sector and make loan facilities accessible to farmers. Another support was provided by (Sulehri & Naeem , 2018) in their work aimed at examining the role of commercial banks in determining the industrial productivity in the Pakistan with partial productivity or total factor productivity as dependent variable and the independent variables are bank credit granted to the industrial sector, other institutional credits and world bank indicator. Secondary time series data within 1972-2015 was used. The ADF test for stationarity was conducted with other diagnostic test were done to ascertain the validity of the results. Results shows that, bank credit and labor force participation rate positively and significantly impacted industrial productivity and Income per capita negatively and significantly impacted industrial productivity and recommends an increase in credit to enhance industrial productivity. (Odunayo, "et al"., 2019) in their study produces a result different to that of (Ugwuanyi, 2016) and others, as the work aimed at examining manufacturing firms output in relation to that of bank credit in Nigeria with the use of co-integration and vector error correction techniques over a period from 1986 to 2016. Findings from the study reveals, a long run equilibrium relationship between market capitalization, bank credit, and manufacturing firm output. Findings further indicated that, bank credit to manufacturing output has an inverse relationship. However, manufacturing output, market capitalization, real gross domestic product, real exchange rate and real interest rate had a direct relationship with manufacturing firms' output. It was also discovered that manufacturing output and bank credit have an inverse relationship with market capitalization.

(Dehghan, "et al", 2015) in their work which was focused on bank finance via debt creation on the performance of companies in automotive industry. Selected independent variables for bank finance are the index ratio of loan to debt and the ratio of loan to equity of firms and dependent variables in respect of firms' performance is measured as profitability and stability of profitability indexes. Panel data was used on panel data model on 26 automobile firms and manufacturers of auto parts from 2001-2014. The results revealed that, no significant relationship existed between the loan to debt ratio of company and

profitability indexes except to that of the index of return on equity. Loan to equity ratio and profitability index shows a significant and negative relationship. They further concluded that, lending more to the companies do not only improve their performance, but also have negative effects when the loan to equity ratio is in high level. (Onsongo, Muathe, & Mwangi, 2020) produce a slightly similar results but differs a bit with a positive but insignificant impact in their study that strives to investigate the implications of financial risk on the performance of certain companies listed on the national stock exchange in Kenya. It was an explanatory research design that targeted 14 listed companies under the National Stock Exchange (NSE). Secondary panel data from the period 2013-2017 were investigated. The study adopted a Panel regression model with the random effect model selected based on the Hausman specification test. Results revealed that, credit risk insignificantly positively affect return on equity (ROE) and liquidity risk have a significantly negative effect on ROE whiles operational risk with an insignificant positive effect on ROE. (Ume, "et al"., 2017) provide a different result in their work which strives to examine the relative impact of Bank credit on the manufacturing sector in Nigeria from 1986-2013. The work employed the used of autoregressive distributed lag (ARDL) bound cointegration test approach and error correction representations with major focus on the short run relationship. Results indicated that, there's evidence of long-run equilibrium and the error correction term is negative and statistically significant. The negative value tells that there exists an adjustable speed from short-run disequilibrium to the long-run equilibrium. In such a case, it an indication that it takes about 3 years to restore the long-run equilibrium state on manufacturing output, if in case there be any shock exerted from regressors. The recommendations made, that central bank and other regulatory authorities should make policy to increase bank credit to the manufacturing sector to stimulate growth within the sector. In (Tamga , 2017 ) a thesis work that seeks to investigate the positive effects of the banking sector on the performance of the agricultural sector in Cameroon. Vector Error Correction Model was utilized on time series data set with a result that shows a short and long run relationship between the variables and also the Granger causality test indicated that, there is a bidirectional causal relationship existed between variables. In another

research work done by (Oluwarotimi & Adamu , 2017) in a study that seeks to establish the relationship between SME credit and that of Unemployment and poverty. The Pearson's correlation was adopted and OLS regression was used to further examines the impact of deposit money bank credit to SMEs on economic growth with secondary data from 1992 to 2015. The results of the Pearson's correlation revealed a negative insignificant relationship between SME credit and Unemployment and a negative significant relationship between SME credit and poverty. The OLS regression results revealed a negative significant impact on SME credit economic growth and recommends training support for SME's on risk management to enhance their capability.

### **3.5 Conclusion**

Results from both the theoretical and empirical related studies clearly showed that, banking sector development indeed plays a crucial role on the financial performance on industrial sector for which the communication sector belongs. Most studies concluded with a positive relationship between the two, other showed mixed and weak whiles few with a negative relationship. Actually, after critical review and analysis of the results and limitations of previous studies, the researcher observed that, most of the studies are concentrated on the manufacturing and agriculture sector and their relation with the banking sector, the other sectors especially the communication sector which is a great player to economic development received less or no research interest. Observations also revealed, there are existing gaps that compels a more extensive and comprehensive research studies to be done in this area. This study shall gear towards fixing some of these observed gaps by investigating all four (4) of the biggest and long serving communication institutions in Sierra Leone on how the banking sector impacted their operations in respect of financial performance and sustainability.



## **CHAPTER FOUR**

### **METHODOLOGY**

#### **4.1 Introduction**

This section discusses the construction of the empirical model specification in order to capture the suggested hypothesis of the relationship between Institutional performance and Loans & Advances Volume, Interest Rate and Debt ratio. The objective of this study is to empirically examine the impact of the Banking sector development on the financial performance of the communication sector in Sierra Leone. Since interest rate, debt rate and loans & advances do influence institutional operational activities an Ordinary Least Squares method adopting the use of the Panel ARDL approach on panel data to estimate the parameters of the linear regression model employed and also to establish the relationship in order to be in line with the study objectives.

#### **4.2 Research Design**

The study sought to investigate the relationship between banking development and that of the communication sector financial performance, the exploratory quantitative research design with an experimental approach is adopted. Explorative because there hasn't that much direct known variables and with less direct literature on the topic and experimental as it is aimed at establishing the cause and effect between selected economic variables. An exploratory study often set strong foundation for more research work to be done on a particular topic and provide an in-depth understanding on new topics. An experimental explorative research model shall try to established variables that would determine the relationship between the two sectors and highlight factors affecting the institutional financial performance in Sierra Leone.

This study investigates the impact of Banking sector development on the financial performance of the communication sector in Sierra Leone using panel data. The regression estimation model employed investigate whether the banking sector do contribute to the financial performance of the communication sector. Despite the key progress in banking sector development, financial performance of the communication sector in one way or the other influenced by other factors like inflation, exchange rate, government and political environment and other macro-economic factors. The model control variable would account for these factors. The Tests that would be conducted to ascertain the model's viability, stability and validity are as follows:

- Unit Root Test; a test for stationarity
- Multicollinearity test
- Cointegration test: a test for long-run relationship
- Diagnostic tests to for Model Stability

The Autoregressive distributed lag estimation model would be used on panel data from 2001-2020 to identify the impact of the banking sector on the financial performance of the communication sector in Sierra Leone and also tries to identify the role of interest rate on the loans and advances facilities granted to the selected communication institutions and further more evaluate the role of debt and its relationship with financial performance. This study is designed to investigate the impact of the banking development variables on financial performance on the selected communication institutions as it aimed to establish the relationship and supporting role of the banking sector to the communication sector. The hypothesis in the first chapter shall be tested using the selected model to establish the relationship between the variables after the abovementioned test and other diagnostic tests for model stability and validity has been made and the appropriate results ascertained.

### **4.3 Participants**

A purposive judgmental sampling of a sample size of four (4) leading, biggest and long serving communication institutions in Sierra Leone has been selected for this study, out of thirty-nine (39) nationwide and the selections was done in

respect of the followings; size, age, coverage, structure and information availability . These institutions selected have been in operation over the review period and all are with close ties with the banking industry, two (2) of the institution are local and the other two are multinational companies. Data will be collected for analysis of profitability in relation to facilities granted by the banking industry to boost their operations for a period of 20 years (2001-2020).

**Table 3: Selected Institutions for this Study.**

	<b>Communication Institutions Selected for this Study</b>
1	Sierra Leone Broadcasting Cooperation (SLBC)
2	Sierra Leone National telecommunication Broadcasting Cooperation (SierraTel)
3	Orange Sierra leone Limited
4	Africell - Sierra leone Limited

Source: Researcher

#### **4.4 Data Source and Collection**

Secondary data solely from selected institutions, published audited annual report of condition or financial statement position (Balance Sheet) for the abovementioned period were investigated. The essential banking facilities and profitability ratios will be deduced from the reports, analysed and interpreted to established the relationships and also the impact of the banking sector development on the financial performance of the communication sector.

#### **4.5 Measurement and Statistical Plan**

The multiple linear regression model that will be used to determine the relationship is explained as thus;

$$\text{Equation i : } ROA = \beta_0 + \beta_1(LAV) + \beta_2(IR) + \beta_3(DR) + u$$

**Where: ROA** is the Return on Assets and represent the dependent variable to be explained and also the profitability ratio.

The independent variables which are the regressors are as follows;

- LAV – Loans and Advances Volume
- IR – Interest Rate
- DR – Debt Ratio

The unobserved variables that may affect the results in different ways, will be represented by the symbol  $\mu$ .

#### 4.6 Definition of Key Measurement Materials

The clear meaning of the variables used in this work needs to be established in relation to the study, they are follows;

- **Return on Assets (ROA):** is primarily an indicator of managerial efficiency, it indicates how capable management has been in converting assets into earnings. (Rose & Hudgins, 2007). It can be calculated by the formulae

$$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}}$$

It can be interpreted as, a positive ratio indicates upward profit trend showing how management has effectively managed its available assets to produce a greater amount of returns and negative ratio the reverse, respectively.

- **Loans and Advances Volume (LAV):** this represent the total actual loan balance granted by the banking industry at a particular period of time, while the advances are the short-term overdraft and some other financing facilities granted from time to time. This study will only take into cognisance balances as at the end of the year and loans amount utilised.
- **Interest Rate (IR):** according to money and banking, interest rate is the cost of borrowing. This study will only incorporate the interest rate attached to the facilities granted at a particular time. Banking facilities move along with interest, this study would try to explore the impact of the interest rate on the loan granted and how it affect the earnings of the selected institutions and also determines its relationship with ROA.
- **Debt Ratio (DR):** is a financial ratio that indicates the percentage of a company assets that are provided via debt (investopedia, n.d.). in order to meet the objectives of this study, debt ratio would be calculated as long-term plus short-term debt in relation to banking facilities be divided

by total assets (long-term + Short-term debt/ total Assets) or

$$Debt\ Ratio = \frac{Long-term\ Debt + Short-term\ Debt}{Total\ Assets}.$$

This would help ascertain the percentage of the selected companies' assets that are provided via borrowing facilities that came directly from the banking industry.

#### 4.7 ARDL Unit Root Test for Stationarity

Unit root test is very essential to undertake in order to identify the stationary status of variables and needs to be carry out before the cointegration test can be conducted. The order of integration need to be ascertained to determine if they are at level I(0) or at first difference I(1). Economic theories suggest that, certain pair of variables are linked by a long-run economic relationship and the variables that are integrated in the same order can be cointegrated, particularly regression model at first difference data or I(1). However, if variables are integrated at I(1) they must obey a long-run equilibrium relationship even though they may separate in the short-run from the equilibrium.

Spurious regression problem may arise by non-stationery data. (Granger & Newbold, 1974) pointed out, the level of many of economic time-series are integrated (or nearly so), and if these data are used in a regression model then a high value for the coefficient of determination(R<sup>2</sup>) is likely to arise, even when the series are actually independent of each other. In order to test our data, we need to be ascertained that they are stationary, in this regard a unit root test shall be done to determine if the data are stationary at certain level and OLS will be valid to run the test. The Augmented Dickey-Fuller (ADF) test will be used and a significant P-Value at level I(0) or at first difference I(1) shall provide a valid room for the test to be processed via OLS.

One of the most common method to test time series set data set for stationarity is the Dickey& Fuller (ADF) test (Dickey & Fuller, 1979) as time series data with a unite root are considered to be non-stationary. Other method like Phillips-Perron test is also used to test for stationarity but similar to that of the ADF even though with few differences and most of the time produced similar

results according to (Brooks, 2014). However, the ADF method is sufficient to conduct the test and thereby utilized in this study as used in (Yua et al., 2021) (Sulehri & Naeem , 2018) amongst others.

The ADF test for stationarity is a regression analysis based on the below equation;

$$\text{Equation ii} \quad \Delta y_t = \beta + \lambda t + \phi y_t - \mathbf{1} \sum_{i=1}^p \alpha_i \Delta y_{t-i} - i + v_t$$

where  $\beta$  is the constant,  $p$  the lag,  $\phi$  and  $\alpha$  the regression coefficient,  $\lambda t$  for trend term and  $v_t$  stand for the white noise. Note, if  $\lambda t = \beta = 0$  the equation representing a unit root test without trend and drift while if only  $\lambda t = 0$  the equation is a model with drift. The possible case is if there exist no constraints, then the test assesses if  $y_t$  has a unit root with drift and a time trend which is deterministic accordingly. The ADF unit root test can be conducted by investigating the undermentioned hypothesis;

$H_0 : \phi = 0$  , Presence of unit root indicating non-stationary data.

$H_1 : \phi < 0$ , No unit root presence indicating stationary data.

The lag choice of the model needs to be determined. There are many options for lag length criteria selections. AIC (Akaike 1974) and/or the Schwarz-Bayesian (SIC) (Schwarz et al. 1978) criteria with the following equations;

**Equation iii**

$$AIC = -2 \ln(LH) + 2k$$

$$SIC = -2 \ln(LH) + k \ln(n)$$

Where  $n$  is the number of observations and  $k$  number of regression parameters to be estimated.  $LH$  represent the maximum likelihood for the models and the two are of the same quality level. This study adopted the AIC criterion for lag length for the ARDL model for consistency purposes.

#### **4.8 ARDL Integrated and Cointegration Verification Test**

In the process of testing panel and time-Series related data some econometric issues in respect to integrated data and cointegration of variables must be clearly verified before the test is undertaken. Integration deals with the order of integration and tells the minimum number of differences needed to get a stationary series, while cointegration looks for a possible correlation in the

long-term. To verify these, the use of the Johansen cointegrated test approach which is based on the use of the Vector Autoregressive models (VAR) shall be utilized to determine the long run equilibrium relationship of the variables. Another important issue is to determine the order of integration of each series  $I(d)$  of variables. This can be done by applying ADF test (unit root test).

AIC is selected to ensure different error terms are white noise. That is, they are normally distributed and are not correlated. In cointegration, the F-Statistics is used to know whether or not there exist a cointegration relationship between the variables. If the computed F-Statistics is above the critical value. The null hypothesis is rejected and if the F-Statistic is below the critical value, this is a result of no long-run relationship with the dependent variable and independent variables. The Equation for the Johansen Cointegration test is as thus:

#### Equation IV

$$X_t = \pi_1 X_{t-1} + \dots + \pi_k X_{t-k} + \mu + \varepsilon_t$$

Where  $X_t, \dots, X_{t-1}, \dots, X_{t-k}$  are the vectors of level and the lagged values of  $P$  variables which are  $I(1)$  in the model;  $\pi_1, \dots, \pi_k$  are coefficient matrices with  $(P \times P)$  dimensions;  $\mu$  is an intercept. The number of lagged values is determined by the assumption that error terms are not auto-correlated. The rank of  $\Pi$  is the number of co-integrating vectors (i.e.  $r$ ) which is determined by testing whether its eigenvalues are statistically significant.

#### 4.9 Data Analysis

The study employed the use of Autoregressive Distributed Lag (ARDL) model for model estimation and also to establish the relationship and investigate the long-term cointegration correlation between the determinants on panel data. The economic variables included in the model are Return on assets (ROA) which is used as a measure of the Financial Performance, Loans and Advances Volume (LAV), Interest Rate (IR) and Debt Ratio (DR). The Data was taken from Audited Annual Financial Statements over the review period.

The method used in estimating cross-section time series is known as panel data that is used in this study. According to (Erica, 2019) using panel data have verse advantages like, it contains more information, variability and

considered to be more efficiency than time-series, its detects and better measures statistical effects of which cannot be done by time-series and the most important one is that more accurate inferences are obtained as panel data typically includes more degrees of freedom and sample heterogeneity.

#### **4.9.1 Autoregressive Distributed Lag Model (ARDL)**

The ARDL (Autoregressive Distributed Lag) model has been in use over the decades to establish the relationship between variables in a single equation. ARDL in recent times has been shown to provide reasonable catalyst for testing for the presence of long-run and Short-run relationship between economic time series.

ARDL is considered to be a powerhouse in estimating dynamic single equation regression. One unique quality on this model is the error correction model. It is however commonly used on time series and time related data set as it works well for non-stationary variables that cointegration is an alternative to an error correction mechanism as it was proposed by Granger's theorem (Engle & Granger, 1987). Their work produces some differencing and set up a linear combination of non-stationary data and variables are turned into an Error correction model on stationary series.

Individually non-stationary variables are determine by cointegration vectors at level  $I(0)$ . Variables are considered to be cointegrated when there is evidence of a long-run linear relationship from a set of variables with the same properties in respect of non-stationary variables. However, cointegration investigations looks for existence of stationary linear combinations of non-stationary variables. Moreover, if such stationary exists, the variables are considered integrated, which is bound by an equilibrium relationship. One key merit of cointegration analysis is a direct test of economic variables in respect of long-run relationship. Cointegration relationship may exist between variables that are stationary at level and at first difference  $I(1)$ .

When series are stationary at level then simple estimation can be used for example, OLS and if they are cointegrated at first difference the Johansen



cointegration test technique, a system based on reduced rank regression model can be used and also to test the null of no cointegration, the two step residual based testing can be used (Pesaran, Smith, & Shin, 2001). Ordinary least Square for level provides long run relationship between variables in case where ECM estimated by OLS will constitute the short run dynamics between variables. When variables are at first difference and not cointegrated, the differencing of the data and estimating the regression via OLS is suitable. However, in case where the order of integration of the corresponding variables are mixed and uncertain, the Autoregressive distributed lag (ARDL) approach is preferable. It is very difficult to get the true order of integration of the variables as structural breaks are of common challenges.

(Pesaran, Smith, & Shin, 2001) introduce the bound testing procedures in the ARDL model in order to investigate the existence of a long-run relation between variables and model with lags introduced the dependent and the independent variables. Consequently, Autoregressive refers to lags of the independent variables and Distributed to the lags of the independent variables. Practically in this, the ARDL features indicated that, the effect of change of the independent variable may or may not be immediate. Lagged value presence of dependent variables will tend to produce a biased yield estimates on OLS and also if error term is autocorrected then OLS is inconsistent and the use of instrumental variables estimation is of essence.

All independent variables don't need to have the same lag order, as time varies in which changes occurs when one variable affect another variable. The ARDL model features is more flexible compared to that of the cointegrated Vector Autoregression (VAR) models that do not make room for different lags for different variables. The ARDL approach is consider crucial for long-run analysis because of its choice of lag order. The lag order choice needs to be selected based on the following diagnostic tests, test for residual serial correlation, test for non-normality, functional form misspecification and heteroscedasticity. According to (Pesaran, Smith, & Shin, 2001), the ARDL (q.p) model of equation can be specified as thus;

**Equation V**

$$\Delta y_t = \beta_0 + C_0 t + \sum_{i=1}^q \zeta_i \Delta y_{t-i} + \rho \sum_{j=0}^p \omega_j \Delta x_{t-j} + \gamma_1 y_{t-1} + \gamma_2 x_{t-1} + \varepsilon_t$$

where  $y_t$  is the dependent variable and  $x_t$  is the independent variables and  $q, p$  are the respective lags.  $\beta_0, C_0$  are the coefficients and represent the drift and trend coefficients respectively and the white noise error is represented by  $\varepsilon_t$ . The coefficients  $\zeta_j$  and  $\omega_j$  represent the coefficient of all the  $j$  corresponds to the short-run relationship on the other hand the  $\gamma_j, j = 1, 2$  corresponds to the long-run relationship.

The distributed lag, verifies if the variables can be stationary, non-stationary or a mixture of the two. The ARDL model can be used to test for cointegration or for the existence of a long-run and short-run relationship among the variables of interest and can also be used to separate the long-run and the short-run effects of the variables. The model is used by (Ugwuanyi, 2016) (Ume, "et al"., 2017) (Hacievliyagil & Eksi, 2019) amongst others.

One big advantage of the panel ARDL approach is that, it works well when use for a smaller sample size of data, say twenty (20) years, which well suit this research. The model provides us with room to determine the effects in case changes occurs in a variable, because the regressors may incorporate lagged values of dependent variables and also lagged values on one or more explanatory variables. It can be also be useful in estimating an objective long-run relationship between economic variables. ARDL model results provide consistent estimate of long-run coefficients under asymptotic normality (Pesaran, Smith, & Shin, 2001). ARDL estimates results holds for regressors that are actually at level  $I(0)$ , First difference  $I(1)$  or mixed. This is among the reasons why the ARDL model is chosen for this thesis, apart from the inclusion of a possible stationary variable and a good option to control for cross section dependencies.

#### **4.10 Diagnostic Testing**

ARDL model provide objective results on a smaller set of time series related data and for the result to be robust, certain diagnostics test needs to be conducted to determine the validity of the results and also to ensure the results are statistically robust. However, the test for stability, heteroscedasticity, misspecification, serial correlation and residual normality are needed to be conducted to ascertain if the model is free from biases and can provide a satisfactory result. If the tests produce satisfactory results, we are in good position to use it for analysis.

##### **4.10.1 Test for Stability**

ARDL model is highly sensitive to structural break and also the use of financial related time series that is sensitive to events globally, the need to analyse the stability of the coefficients is of major significance in order to assess the stability of the long-run and short-run coefficients. The test for stability proposed by (Brown, Durbin, & Evans, 1975) are the CUSUM and CUSUMSQ test and can be conducted for stability.

The CUSUM test is based on the cumulative sum of the recursive residuals and the CUSUMSQ test is on the cumulative sum of squared recursive residuals (CUSUMSQ) and they are of graphical nature whereas the residuals are updated recursively and plotted against the break points for the 5% significance line. The concept of the CUSUM test provides, where the cumulative sum of recursive residuals is plotted against the upper and lower 95 % confidence bounds and the same goes for the CUSUMSQ. If results of the test show a range within 5% significant level, indicating that the long-run and short-run coefficients are stable. However, both tests analyses if the residuals do not significantly diverge from its mean value by imposing parallel critical lines on a significant level of 5%. This is illustrated on figure 2 below.

##### **4.10.2 Test for Serial Correlation**

The Breusch-Godfrey test proposed by (Godfrey, 1978) for serial correlation in case different lags of residuals are correlated. Serial correlation do affects the efficiency of the regression estimators but does not affects the unbiasedness,

that is the estimator are not BLUE. Serial correlation may affect the regression standard error which may invalidate significance test. In such cases it is however possible that wrong inferences could be made as to how the independent variables are determinants of the dependent variable variations. The Breusch-Godfrey test general hypothesis are as follows;

H0: No serial correlation in the model

H1: serial correlation in the model

#### **4.10.3 Test for Heteroscedasticity**

This test, test for constant variance in all residuals. ARDL model and OLS estimation assumed that the residuals have a constant variance that is homoscedasticity. On the other hand, in cases where the model does not have a constant variance that is, heteroscedasticity in the residuals in this case the estimated coefficients will no longer be BLUE and it will not have minimum variance of the unbiased estimators. This thesis will make use of the Whites test for heteroscedasticity with the following hypothesis;

H0: Residuals with Constant variance – Homoscedasticity

H1: Residuals with Non-constant variance - Heteroscedasticity

#### **4.10.4 Regression Specification Error Test**

The test for misspecification in this thesis is conducted using the Ramsey Regression Specification Error Test (RESET). The Ramsey (1969) test for functional form, that is, if non-linear combinations of the fitted values can well describe the explanatory variable. The model is said to be misspecified if non-linear combinations of the fitted values have power in describing the independent variables and needs to be adjusted. The null and alternative hypothesis is as follows:

H0: Non-linear combinations with no power - No misspecification

H1: Non-linear combinations with power - Misspecification.

#### **4.10.5 Test for Normality of the Residuals**

The test for Residuals normality is done by this study using the Jarque-Bera test for normality. The test for normality is of great importance as non-normality may cause challenges in case of statistical inference of the estimated

coefficient such as confidence interval and significance test that's heavily relies on the normality notion (Brooks, 2014). The general null and alternative hypothesis are as follows:

H0: Normality in the residuals

H1: Non-normality in the residuals

## CHAPTER FIVE

### RESULTS

#### 5.1 Introduction

Methodology of this study is contained on the previous chapter. However, this chapter gears towards the interpretation of the data generated and can be further analyzed by the prescribed methods. It will start to provide results with the descriptive statistics, test for stationarity, multicollinearity to cointegration test, other diagnostic tests thereafter, and the processing and estimation of data collected using the ARDL model.

#### 5.2 Descriptive Statistics

**Table 4: Descriptive Statistics**

	ROA	LOAN_VOLUME	INT_RATE	DEBT
Mean	0.260250	0.213600	0.173900	0.429500
Median	0.258500	0.214500	0.176000	0.449500
Maximum	0.362000	0.295000	0.226000	0.534000
Minimum	0.177000	0.151000	0.125000	0.245000
Std. Dev.	0.060021	0.040010	0.024602	0.079286

Source: EViews 9 computation of research Data.

The above table shows that, ROA is determined by Net Income divided by Total Asset, which portrays an average value of 26 percent. This reveals that the sample institutions on average earned a Net Income of 26% percent of the total asset. In as much as ROA indicates the company management capability to generate Income from available resources, the higher ROA demonstrates that the institutions are more effective in utilizing their assets.

ROA showed 36% while minimum value is 17%. meaning, among the selected institutions the most profitable institution earned 36% of net income per every SLL 1 invested on total asset. On the contrary, the least profitable institution generated 17%. ROA is fairly symmetrical in skewness as it ranges between - 0.5 to 0.5.

Loans and Advances volume which is determined by the total value of loans and advances over total assets. Showed an average value of 21% with maximum of 29% and 15% minimum indicating that the selected institutions in average operated their activities with bank facility to the tune of 21% with the most utilized 29% and the least 15%. This indicates how the selected communication companies depends on the banking sector to enhance their daily operational activities.

Interest rate revealed that, institutions does pay an average of 17% on an annual bases to the banking sector for facilities granted under the review period with the most paid 22% and the least 12% in aggregate value. Debt ratio which is measured by the total of debts over the institution total assets and demonstrate how the institutions assets are financed. A higher percentage indicated a highly geared institution and with huge debt. The debt ratio showed an average 42% for the selected institutions, indicated that they are moderately geared and with the most at 53% and least at 24% and also fairly skewed.

The above table shows all banking development variability over the review period. The maximum and minimum variation value indicated that, there is evidence of growth in the banking sector over the years. The variation in the interest rate indicated that there has been a moderate increase over the 20years review period and serves as an encouragement for institutions to benefit from loanable fund and debt variation showed that there has been increased in debt level of the communication sector over the years.

### **5.3 ARDL Unit Root Test for Stationarity Results**

The result of the unit root test is shown on the below table as it revealed that all the variables are non-stationery at level but stationery at first difference and

at a 5% significant level and also the data are integrated of order one 1(1), as the Augmented Dickey and Fuller (ADF) test was employed to carry out the test. The AIC criterion was used to determine the optimal Lag length also.

**Table 5: ADF- Unit Root Test for Stationarity**

Method	Statistic	Prob.**		
ADF - Fisher Chi-square	49.8811	0.0000		
ADF - Choi Z-stat	-5.73867	0.0000		
** Probabilities for Fisher tests are computed using an asymptotic Chi				
-square distribution. All other tests assume asymptotic normality.				
Intermediate ADF test results D(UNTITLED)				
Series	Prob.	Lag	Max Lag	Obs
D(ROA)	0.0064	0	2	18
D(LOAN_VOLUME)	0.0044	1	2	17
D(INT_RATE)	0.0006	0	2	18
D(DEBT)	0.0009	0	2	18

Source: EViews 9 computation of research data.

#### 5.4 Test for Multicollinearity Results

The multicollinearity test was conducted in order to determine the relationship between the variables and the result are as follows:

**Table 6: Test for Multicollinearity:  
Correlation Matrix**

	ROA	LOAN_VOLUME	INT_RATE	DEBT
ROA	1.000000	0.891139	0.765346	-0.540509
LOAN_VOLUME	0.891139	1.000000	0.756027	-0.659195
INT_RATE	0.765346	0.756027	1.000000	-0.712014
DEBT	-0.540509	-0.659195	-0.712014	1.000000

Source: Eviews 9 Computation of Research Data

The table shows that there is a strong positive correlation between ROA and Loan and Advances volume as the value recorded is 0.891139 and also a strong negative correlation between Loans and Advances to Debt ratio at a value of -0.659195 and also a negative correlation between interest and debt. The table also shows that, the Banking Sector influences the performance of the communication sector since the variables are all below 0.8 which shall



make it easy to extract the coefficient estimates with a small standard error. The data model does not show evidence of multicollinearity as all the variables are below 0.8. Further test for multi collinearity using Variance Inflation Factor.

**Table 7: Variance Inflation factor Test for Multicollinearity**

	<b>Coefficient</b>	<b>Uncentered</b>	<b>Centered</b>
<b>Variable</b>	<b>Variance</b>	<b>VIF</b>	<b>VIF</b>
ROA(-1)	0.023835	46.99361	2.320727
LOAN_VOLUME	0.067665	91.49494	2.982914
INT_RATE	0.361068	322.8776	4.828250
DEBT	0.017473	94.46193	3.104760
C	0.018559	524.9397	NA

Source: EViews 9 Computation of Research Data.

The above table shows that, no severe multicollinearity exists among the variables and VIF centered is less than 5. In this scenario we need to adopt the principle of leave the model alone. In as much as the model is safe for multicollinearity the test for cointegration can now be conducted.

### **5.5 ARDL Cointegration Test Results**

The result deduced by the unit root test shows that, the variables are stationary at first difference, this gives way for the test for cointegration to be conducted in order to verify the existence of a long-run equilibrium relationship between the variables. The Johansen Cointegration test was used to test, if there is one linear combination of the variables at least. The VAR estimation was used to determine the Lag length that to be used. The reports of the VAR lag order selection criteria indicate that, the optimal lag length, based on the AIC and SC is 2 lags.

The Johansen test results which was performed to verify if a long-run relationship does exist between the selected variables is shown on the below table. A cointegration rank of one is shows by the Trace statistics, whereas the Max-Eigen statistics shows two cointegrating equations at a 5% significance level indicating that, the variables are cointegrated and there is an evidence of a long-run relationship.

**Table 8: Unrestricted Cointegration Rank Test (Trace)**

<b>Unrestricted Cointegration Rank Test (Trace)</b>				
<b>Hypothesized</b>		<b>Trace</b>	<b>0.05</b>	
<b>No. of CE(s)</b>	<b>Eigenvalue</b>	<b>Statistic</b>	<b>Critical Value</b>	<b>Prob.**</b>
None *	0.999439	180.9788	47.85613	0.0000
At most 1 *	0.901957	53.70862	29.79707	0.0000
At most 2	0.563270	14.22867	15.49471	0.0769
At most 3	0.008503	0.145175	3.841466	0.7032

<b>Unrestricted Cointegration Rank Test (Maximum Eigenvalue)</b>				
<b>Hypothesized</b>		<b>Max-Eigen</b>	<b>0.05</b>	
<b>No. of CE(s)</b>	<b>Eigenvalue</b>	<b>Statistic</b>	<b>Critical Value</b>	<b>Prob.**</b>
None *	0.999439	127.2702	27.58434	0.0000
At most 1 *	0.901957	39.47995	21.13162	0.0001
At most 2	0.563270	14.08349	14.26460	0.0534
At most 3	0.008503	0.145175	3.841466	0.7032

Source: EViews 9 computation of researcher data

### 5.6 ARDL Model Estimation Results

The results of ADF unit root test provided evidence that the data are integrated and cointegration tests provide evidence that, there is an existence of long-run equilibrium relationships among the model's variables and with no severe multicollinearity among the independent variables. Therefore, the next step is to estimate the long run elasticity using ARDL, Akaike selection criteria (AIC). A positive relationship will signify, a positive significant impact.

**Table 9: ARDL Estimation Results**

<b>Dependent Variable: ROA</b>				
<b>Method: ARDL</b>				
<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.*</b>
ROA(-1)	0.300770	0.155230	1.937578	0.0717
LOAN_VOLUME	0.971901	0.264289	3.677423	0.0022
NT_RATE	-0.099452	0.366224	-0.271560	0.7897

<b>Table 9 (Continued)</b>				
DEBT	-0.011086	0.049592	-0.223546	0.8261
R-squared	0.835512	Mean dependent var		0.263789
Adjusted R-squared	0.802615	S.D. dependent var		0.059483
S.E. of regression	0.026427	Akaike info criterion		-4.244201
Sum squared resid	0.010476	Schwarz criterion		-4.045371
Log likelihood	44.31991	Hannan-Quinn criter.		-4.210551
Durbin-Watson stat	1.667502			

Source:Eviews 9 computation of Research Data.

The results revealed that, loans and advances volume (LAV) influences selected institutions financial performance (ROA) and statistically significant at 1% critical value, PV value is less than .05% which indicate that any change positive or negative will have a significant effect on ROA. For example, everything being equal, any increase on loans and advances would lead to 0.971901 increase on the ROA vice versa all other factors unchanged.

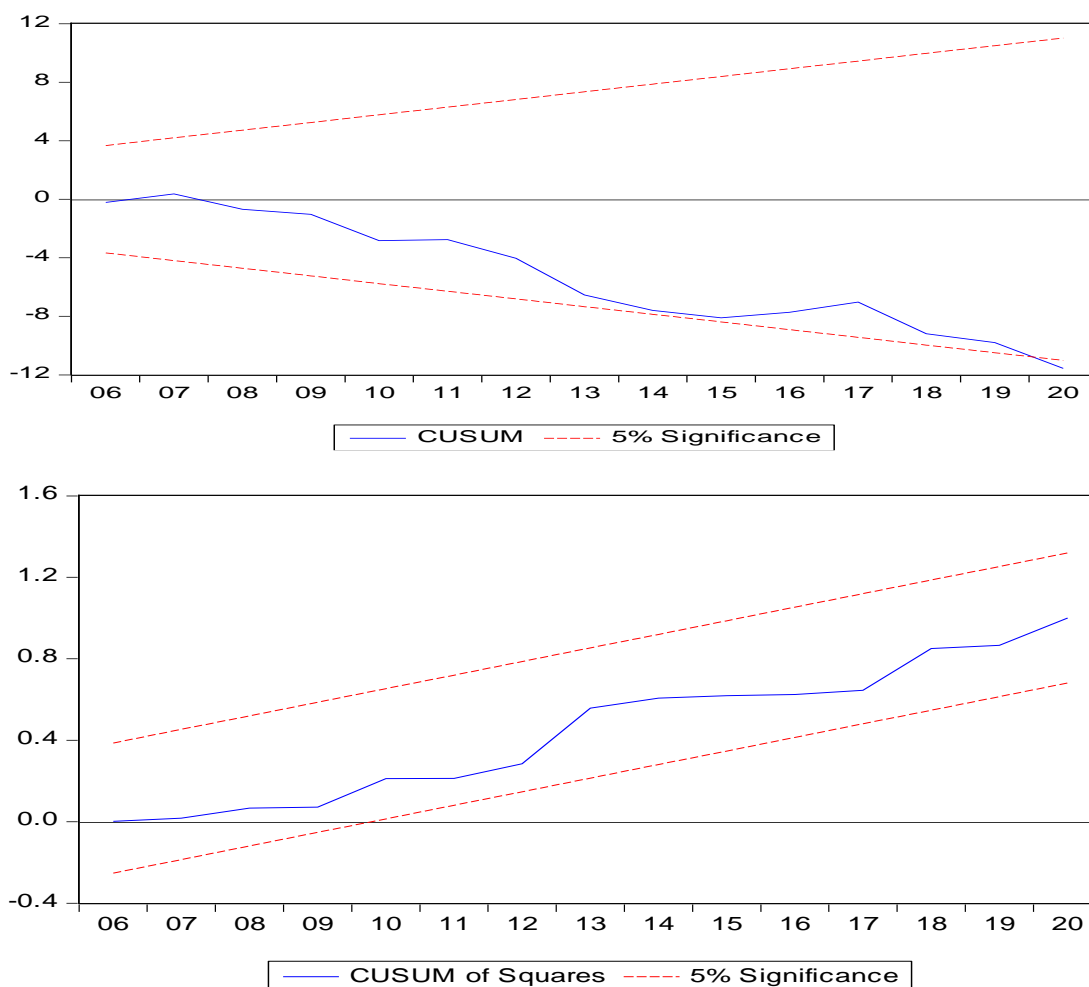
Both Interest Rate (IR) and Debt ratio indicate an insignificant negative effect, meaning that any increase shall lead to a small or no decrease in ROA. For example, an increase on Interest rate would lead to about a 0.0994 decrease on ROA everything being equal. R-Squared and Adjusted R-Squared recorded an 83% and 80% respectively which indicates that the independent variables significantly explained the dependent variable.

### **5.7 Diagnostic Tests Results**

The test for stability, serial correlation and normality was conducted to examine the validity and stability of the results and also to establish that, the selected model can be used for policy formation and implementation.

### 5.7.1 CUSUM and CUSUMSQ Test for Stability Results

Figure 2: CUSUM and CUSUMSQ test for Stability



The above figures show the stability test of the selected ARDL model. The CUSUM and CUSUMSQ lines are within the lower and upper 5% confidence level bounds indicating that the model is stable and the results show that both the short-run and long-run coefficients are stable.

### 5.7.2 ARDL Serial Correlation Test Results

Table 10: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.220920	Prob. F(2,13)		0.8047
Obs*R-squared	0.620960	Prob. Chi-Square(2)		0.7331
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA(-1)	-0.058530	0.219943	-0.266113	0.7943

LOAN_VOLUME	0.062506	0.296709	0.210663	0.8364
INT_RATE	0.014256	0.443184	0.032167	0.9748
DEBT	-0.002381	0.052547	-0.045309	0.9645
RESID(-1)	0.191776	0.381098	0.503219	0.6232
RESID(-2)	-0.130006	0.316937	-0.410197	0.6883

Source: EViews 9 Computation of Research Data

The above table shows values of serial correlation of the selected model and result reveals that, no serial correlation exist among the variable as all the P-values are above the 5% significant level indicating that the model is free from serial correlation. However, we fail to reject the null hypothesis.

### 5.7.3 ARDL Heteroskedasticity Test Results

**Table 11: Heteroskedasticity Test Result**

Heteroskedasticity Test: White				
F-statistic	0.719666	Prob. F(10,8)		0.6929
Obs*R-squared	8.997804	Prob. Chi-Square(10)		0.5323
Scaled explained SS	2.953381	Prob. Chi-Square(10)		0.9825
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.000107	0.002104	-0.050801	0.9607
ROA(-1)^2	0.236444	0.118129	2.001573	0.0803
ROA(-1)*LOAN_VOLUME	-0.050073	0.169926	-0.294677	0.7757
ROA(-1)*INT_RATE	-0.599806	0.403943	-1.484877	0.1759
ROA(-1)*DEBT	-0.016360	0.071607	-0.228473	0.8250
LOAN_VOLUME^2	-0.330875	0.301420	-1.097722	0.3043
LOAN_VOLUME*INT_RATE	0.998323	1.019115	0.979598	0.3560
LOAN_VOLUME*DEBT	-0.056762	0.119940	-0.473254	0.6487
INT_RATE^2	-0.299664	0.672863	-0.445357	0.6679

INT_RATE*DEBT	0.142154	0.164258	0.865437	0.4120
DEBT^2	-0.011157	0.013613	-0.819571	0.4362
Prob(F-statistic)	0.692854			

Source: EViews 9 Computation of Research Data

The above table shows the Heteroskedasticity test results to show if the data are BLUE. The test results show that no heteroskedasticity exist between variables in the selected model as the P-Value is above the 5% significant value and in this case we fail to reject the null hypothesis.

#### 5.7.4 Regression Test for Specification Results

**Table 12: ARDL Ramsey RESET Test Results**

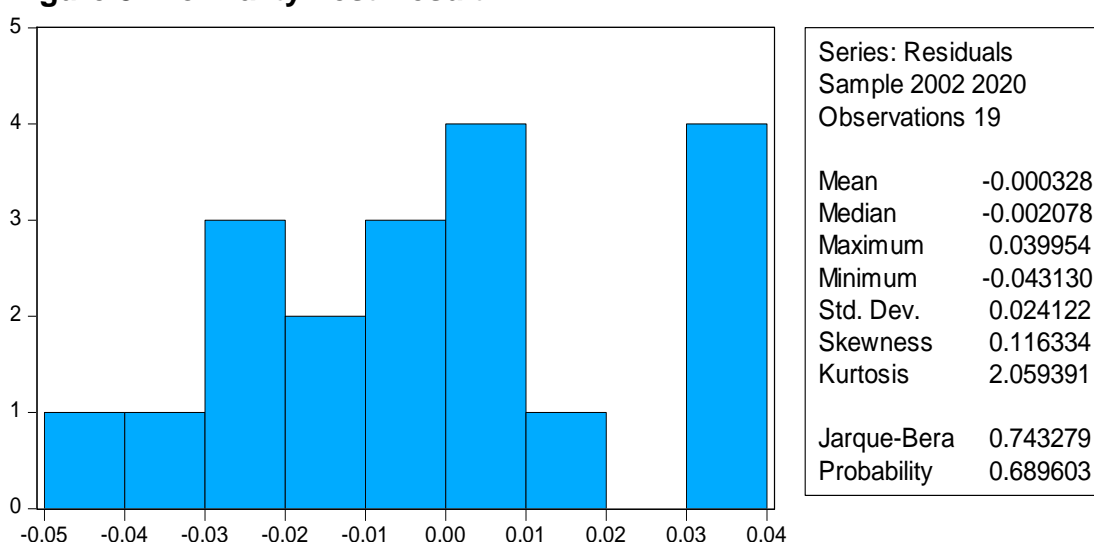
Ramsey RESET Test				
	Value	df	Probability	
t-statistic	0.015601	14	0.9878	
F-statistic	0.000243	(1, 14)	0.9878	
F-test summary:				
	Sum of Sq.	df	Mean Sq	
Test SSR	1.82E-07	1	1.82E-07	
Restricted SSR	0.010476	15	0.000698	
Unrestricted SSR	0.010476	14	0.000748	
Method: ARDL				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
ROA(-1)	0.305995	0.371488	0.823701	0.4239
LOAN_VOLUME	0.987408	1.030953	0.957762	0.3544
INT_RATE	-0.107361	0.633004	-0.169605	0.8677
DEBT	-0.013525	0.164515	-0.082208	0.9356
FITTED^2	-0.030848	1.977271	-0.015601	0.9878

Source: EViews 9 Computation of Research Data.

The test for misspecification from the above table shows the model is free from misspecification as the P-value is greater than the 5% significant level and however, fails to reject the null.

### 5.7.5 ARDL Normality Test Results

**Figure 3: Normality Test Result**



**Figure 3: Normality Test:**

The test results show that the data for this study are normally distributed as the P-Value is 0.689 which is greater than the 0.05 percent significant level and fail to reject the null hypothesis that indicate normality for the data.

The above test results show that the model is valid and can be used for objective analysis. As it is satisfactory and can conclude that the results are valid and can be used for analysis and policy implementations.

## **CHAPTER SIX**

### **DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS**

#### **6.1 Discussions and Conclusion**

The banking sector and other financial institutions are regarded to be a leading player and very instrumental to economic development of a nation. In developing nations, the banking sector is considered to be a life-line for the growth and steady development for other institutions within the economy. Nevertheless, the proper functioning of banks is as not as seamless as it seems, they do encounter significant challenges that threatens their sustainability. The risky nature surrounding their operations and their balance sheet structure signifies their uniqueness. However, the overall economy will collapse and suffers grave negative consequences if the banking sector fails or distress in developing nations especially the country this research was conducted.

The communication sector in Sierra Leone does heavily relied on the banking sector in meeting their current and future term financial obligations in order to enhance their smooth operations and continuity. A bank crisis in this nation would give rise to a significant negative effect on the communication sector and the economy as a whole. Therefore, this study aims at examining, the impact of the banking sector development on the financial performance of the communication sector in Sierra Leone and focuses on the main objectives, which is to investigate the influence of banking sector services on the financial performance of the selected communication institutions and that which is accomplished by the first hypothesis followed by the others.



The results revealed that, loans and advances volume have a positive significant impact on financial performance of the selected communication institutions, similar to that of (Asom & Ijirshar, 2020) (Ugwuanyi, 2016) and (Muchingami, "et al'., 2017) and oppose to that of (Saadallah & Salah, 2019), interest rate and debt ratio with a negative insignificant impact to financial performance of the communication sector according to the ARDL model used to estimate the data.

The test for integration established that, the data are integrated at first difference and cointegration test proves that, there is an evidence of a long-run relationship among the variables. The variables utilized in this study are interwoven as loan and advances goes with interest rate and ends to be a debt to the borrowing institutions. The study also revealed a functional relationship exist between banking sector facilities to the communication sector financial needs and enhances its output growth rate. The relationship spotted out that, holding other factors constant, as banks increases their loans and advances the communication sector financial performance in terms of profit also increased.

This paper investigates the extent to which the banking sector in Sierra Leone influences the operations of the communication sector and revealed a positive relationship between banking development and communication sector financial performance and Interest rate shows to be insignificant and negatively influences financial performance. This indicates that the selected communication institutions were not borrowing more due to high interest rates charged by the banking sector during the review period. Debt ratio also found to be negatively insignificant which indicates that, debt causes a major challenge to the selected communication institutions financial performance abilities as debts are serviced from earnings.

In order to rectify these issues, policy makers and regulators need to empower and encourage the banking sector, for them to be able to provide and grant long-term and emergency loans and advances to the communication sector that would enhances the sector financial performance and the economy at large. The central bank should set a reasonable interest rate ceiling and institute control mechanisms that will ensure a steady and competitive interest

rate among the banking institutions in the sector and in turns a major benefit for both sectors.

This study will add to the debate on the banking sector relationship to other institutional development and the economy, from another view point, by looking whether the banking sector operations do significantly affect the operations of the communication sector in Sierra Leone. The findings revealed that, the banking sector facilities drives the communication sector performance and significantly affects its financial performance. Furthermore, analyses disclosed that, a long-run relationship exist among variables used to determine the results.

This study can be of great importance for policy makers, investors, regulators, entrepreneurs, bank executives, scholars, researchers and anyone interested in industrial development. It provides help in order to conceptualize the relationship between banking facilities in the form of loans and advances and financial performance and also provide a clear understanding about the role of interest rate and debt as other players in the relationship. It would also provide support for scholars who intends to conduct further comparative studies of such nature or on other institutional sectors financial performance within the economy that relied on the banking sector to enhances their operational activities and also to those that depends on other sources to fund their operations, in respect to have better understanding and more information to determine the relative impact on financial performance of other economic institutions in relations to the banking sector development within a particular nation from time to time and best ways to finance institutional operational activities.

## **6.2 Recommendations for Regulators and Policy Makers**

In respect of this study results, the under mentioned serves as recommendations to policy makers, regulators, shareholders, investors, business executives and industrial practitioners.

- Policies makers and regulators needs to provide adequate support to the banking sector which would in turn extend such support to other institutions for national development purposes.
- The banking sector needs to be supervised and robustly monitored by the central bank and stakeholders to ensure viability and sustainability. The following areas needs to be perpetually monitored, Capital Adequacy, liquidity management, Assets quality, management efficiency and reserve management.
- Regulators should monitor the interest rate charged by banks in order to ensure a level playing field among borrowing institutions and borrowers.
- Industrial practitioners should strengthen their ties with the banking sectors in order to productively negotiate for better rates and increased banking facilities to finance current operations and also expansion projects.
- Executives of the institutional sectors should be able to accurately evaluate their financial needs and projections in order to ensure that banking facilities requested for are in concert with the purpose and volume. They must make proper repayment plans in order to avoid defaults which would provide room for penalty charges and eventually adversely affects earnings.

### **6.3 Further Future Research Direction**

In respect to help address the problem of endogeneity which can be caused by variables influences on the other or by an observed variable, this current study recommends further research direction on this topic.

This study suggests the inclusion of small and long serving communication institutions in order to enhance the generalization of the results, if only data are available. Similar Studies in relation to banking influence on other sectors financial performance in Sierra Leone and or the world over using the same variables and models but with a longer time period to determine the

relationship, in order to provide support to this research work and develop better understanding and also add to literature on this research area.

The work of regulators and policy makers may be easy if they are au fait with the exact aspect of the banking sector activities that needs to be improved on, in order to encourage other economic sectors to benefit from it. Future study can also investigate why the communication sectors received less in terms of borrowings compared to other sectors in the economy as this have some policy implications for banking development in Sierra Leone.

Literature has shown that Banking development is crucial for other economic sector financial performance. In that respect, the level of banking development that stimulate significant financial performance has not been fully well empirically tested in this study. This research did not take into account Operating Profit Margin (OPM) as dependent variable. In case of the independent variables, inflation rate, exchange rate and floating rate are considered essential in determining financial performance and should be taken in consideration for future research.

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## PLAGIARISM REPORT

**THE IMPACT OF THE BANKING SECTOR DEVELOPMENT ON  
THE FINANCIAL PERFORMANCE OF THE COMMUNICATION  
SECTOR IN SIERRA LEONE**

**By**

**AROUN RASHID KAMARA**

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## ETHICS COMMITTEE APPROVAL

28.09.2021

Dear Aroun Rashid Kamara

Your project “The Impact Of The Banking Sector Development On The Financial Performance Of The Communication Sector In Sierra Leone” has been evaluated. Since only secondary data will be used the project it does not need to go through the ethics committee. You can start your research on the condition that you will use only secondary data.

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of the Scientific Research Ethics Committee



**Note:** If you need to provide an official letter to an institution with the signature of the Head of NEU Scientific Research Ethics Committee, please apply to the secretariat of the ethics committee by showing this document.