UNIVERSITY of RWANDA

COLLEGE OF BUSINESS AND ECONOMICS

NON-PERFORMING HOUSING LOAN AND FINANCIAL PERFORMANCE OF SELECTED COMMERCIAL BANKS IN RWANDA (2015-2019)

A thesis submitted in partial fulfillment of the requirements for the Master's Degree in Business Administration (Finance) in the University of Rwanda

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DECLARATION

I, MURENZI Aloys, hereby declare that this thesis is my original work and has not been presented for a degree or any other award in any other University

Signed……..…….. Date……

Names: …….

This thesis has been submitted for examination with my approval as university supervisor.

Signed……. Date……

Name…….……

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ABSTRACT

The purpose of this research was to measure the influence of non-performing housing loans on financial performance of selected commercial banks in Rwanda (BPR, BK, and ECOBANK). The first objective was to examine the level of non-performing housing loans among the selected commercial banks in Rwanda, the second was to determine the financial performance of those banks and the third was to establish the influence of non-performing housing loans on the financial performance of selected commercial banks in Rwanda from 2015 to 2019. The study was entirely quantitative. Data was collected from secondary sources mainly published reports of the three selected commercial banks. Panel data was subjected to multiple linear regression analysis to measure the influence of gross NPHL and net NPHL on financial performance of the selected commercial banks. The study found out that the average rate of the gross nonperforming housing loans has been slowly reducing from 5.53 in 2015 to 4.36 in 2019. Whereas the average rate of net nonperforming loans has gradually and slightly reduced from 2.2 in 2015 to 2.1. This gradual decrease indicates that defaulting loans in the housing sector has been gradually declining. It was found out that average return on asset has not been high for the first three years. In 2015 it was 1.5 and gradually increased to 4.47 by the year 2019. The average return on equity has gradually increased from 9.7 in 2015 to 11.53 by the year 2019. The study revealed that the average net interest margin for the selected commercial banks has been gradually increasing. The average net interest margin was 6.6 by the year 2015 and increased to 9 by the year 2019. This increase is an indicator of improvement in the financial performance of the concerned commercial banks. P. values (0.004, 0.006, and 0.014) from coefficients tables for return on equity, return on asset, and net interest margin were far less than the level of significance 0.05. Therefore, a decision was made to reject the null hypothesis and a conclusion was made that there was a liner relationship between nonperforming housing loans and return on asset, return equity and net interest margin. This means that in the selected commercial banks, the declining nonperforming housing loans had a positive influence on return on equity, return on asset and net interest margin. This implies that if nonperforming housing loans continues to decline, the return on equity and net interest margin will also increase.

Key words: Non Performing Housing Loans, Financial Performance

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LIST OF ACRONYMS AND ABREVIATIONS

ARM: Adjustable Rate Mortgage.

BCR: Banque Commerciale du Rwanda.

BHR: Housing Bank of Rwanda.

BPR : Banque Populaire du Rwanda.

BRD: Banque Rwandaise de Développement

CSR: Caisse Sociale du Rwanda.

DJIA: Dow Jones Industrial Average.

DU: Dwelling unit

EDPRS: Economic Development and Poverty Reduction Strategy

FRM: Fixed Rate Mortgage

GFC: Global financial crisis

I&M Bank:

NPL: Non Performing Loans

RHA: Rwanda Housing Authority

RNRA: Rwanda Natural Resources Authority

RSSB: Rwanda Social Security Board

S.A.: Société Anonyme (Public Limited Company)

UBPR: Union des Banques Populaires au Rwanda

UK: United Kingdom

USA: United States of America

USD: United States of America Dollars

CIS: Commonwealth of Independent States

GNPHA: Gross Nonperforming Housing Assets

NNPHA: Net Nonperforming Housing Assets

CHAPTER 1: INTRODUCTION AND BACKGROUND OF THE STUDY

1.1. Background of the study

This chapter includes a short introduction to the whole aspect of the research which comprises among others are background information, statement of the problem, objectives of the study, statement of hypothesis, scope and significance of the study ending up with the limitation and delimitations of the study.

In the past 20 years, the financial sector has grown very exponentially and became more interconnected. The expansion of the financial sector was made easy through the development of new financial products and markets. This development has exposed financial institutions to risks and economies in general. Negative effects like the housing crisis among others have potential to lead to low financial performance and bear a negative effect on the economy. The risks associated with housing crises in general lead to increasing rates of NPLs in the financial institutions which later bear a negative effect on the financial performance. (Federal Reserve Bank of Cleveland, 2020).

The growing level of NPLs strongly affects negatively efficiency which in turn affects the level of financial performance of commercial banks. This lowers significantly interest revenues, diminishes investments, lowers liquidity and finally leads to bankruptcy. If such a situation prevails, it can lead to low performance of the financial sector and the national economy in general. Contrary to this, gradually declining level of NPLs obviously lead to increased level of efficiency in management of provision of financial services which eventually contributes to improved financial performance of the banking institutions and the growth of the concerned economies. (Junmin, 2018).

The housing bubble of 2008 that mainly led to high Non-Performing Loans, caused serious loss of the banking sector in Europe and America. Given that experience, many scholars and practitioners have broadly used Non-Performing Loans as a dimension of asset quality among commercial banks and are time and again linked with failures and economic crises in both third and first world countries (Huljak, 2020).

In Korea, according to Jungmu (2019) there exists a close relationship between housing projects and banks' profitability and soundness. When the housing sector is performing well and prices of houses high, it leads to the better performance of commercial banks. On the other hand, drop in housing prices lead to a situation where NPLs could rise.

Most banks in developing countries use a greater proportion of their asset to finance housing projects. There exists a big demand for construction of residential and business houses in the developing cities and towns in the developing world. Given the conditions, houses represent a large proportion of people and businesses' expenses and take a substantial part of lifetime income. Acquisition of houses be it residential or business, requires enormous investment that can be rarely financed using income. That's why borrowing becomes necessary and for long term to meet the housing demand. Bearing in mind, that long-term creadits are more profitable to the commercial banks, it was also realised that in case of defaulting loans, the banks are negatively and seriously financially affected. This means that high level of NPLs is one of the factors that can affect financial performance of the banking industry (Khandaker, 2017).

The factors that explain economic crisis in the west have not been different from those that explain it in Africa. What becomes particular in Africa is that for economic systems of developing countries are bank-centered. Banks constitute the primary source of funding. This exposes African economies to economic crises whenever the banking sectors experience shocks. This is the very reason why the primary cause of economic crisis in African Economies is high level of NPLs. A greater proportion of loan portfolio in emerging economies is used to finance housing construction projects. Based on this, we assume that that Nonperforming housing loans contribute to a greater extent to the gross non-performing loans, eventually bearing a negative effect on financial performance of the commercial bank (Muhammad, et. al, 2020).

Enormous nonperforming housing loans portfolio bears negatively on the capability of a commercial bank to make profits. In the 1990s and beyond commercial banks in Nigeria experienced severe nonperforming loans which led low profitability. The issue of NPL was mainly caused by accumulated high risk loans provided to bank promoters and management to finance mainly large scale housing projects (Ugoani, 2015). The similar relationship between nonperforming loans and financial performance was noted in the study of Mulowork (2016) conducted in Ethiopia. Based on his findings for the period of 2011 to 2015, the decrease in nonperforming housing loans was significantly related with the improvement in the financial performance of the selected banks.

Rwandan financial sector is dominated by the banking sector representing 70% of the total assets of the sector. The other sub-sectors including microfinance and insurance are not yet vibrant. This makes the country's financial system centered on the banking system. Good health of the banking

sector means good financial and economic strength and stability of the nation. To strengthen the banking sector, the central bank has put in place strong measures to improve asset quality of commercial banks through stringent regulations that helped the banks reduce rates of nonperforming housing loans. Regarding loans that are provided by commercial banks in Rwanda, a greater proportion of loans is provided to finance construction projects. For example, 30% of all loans provided in 2013 were provided to finance commercial and residential housing projects. The percentage increased to 33 in 2014. Obviously this means that default of the housing loans would bear a very negative effect on the performance of the banking institutions. However, on the other hand, good performance of housing loan portfolios would positively influence financial performance (BNR, 2015).

The banking industry in Rwanda according to the above mentioned report was still small representing only 17 % of the Gross Domestic Product in 2005. This percentage represents a total amount of $ 402 million. The bigger market shares of the banking sector belonged to 3 commercial banks. In the first place, Bank of Kigali (BK), Banque Populaire du Rwanda (BPR) the former Union des Banques Populaires du Rwanda and I&M bank the former Banque Commercial du Rwanda (BCR). The largest is BK in terms of asset and provides loans to large, medium and small businesses. The second, is BPR with also many branches and offering small loans to farmers to facilitate agricultural activities. ECOBANK's share is not big but represents foreign investment in this banking sectors (BNR, 2015).

To ensure that commercial banks manage efficiently and effectively, there is need to understand the micro and macro conditions in which they operate. These include their understanding of all the risks of housing lending, customers' capacity to afford a house, availability of mortgage registration system, and more significantly the financial capacities of customers to support 10 to 20years assets. The major challenge to the housing loans market in Rwanda is that of affordability. Housing loans are still expensive because of high interest rates. This constraint is mostly a result of factors that include rising inflation rate which makes commercial banks increase interest due to uncertainty. Interest rates for housing loans of different banks has been high above the 15% standard housing lending rate. Among many other factors, high interest rate is one of the main contributors to the high non-performing housing loans (Ugoani, 2015).

Studies revealed issues of low performance of housing loans in Rwanda, but none of the studies investigated how performance of the housing loans affect financial performance of institutions in general and financial performance of the selected banks in this study.

1.2. Problem statement

In the past few years, many countries across the world have experienced incredible financial crises. The recent crisis was experienced in the US subprime mortgages owing to a sudden reduction in the availability of money or credit from different lending institutions, which occurred in 2007 and 2008 leading to financial crises and instability of the financial market. Monetary crises are greatly marked by the rise of non-performing loans (NPLs) in banking advances especially in bank-centered economies. (Muhammad, et. al, 2020).

Rwanda as a developing country was affected by the shocks from the global financial crisis as well. Studies revealed low performance of loan portfolios of the commercial banks in Rwanda owing to high risk loans that were provided to finance modern residential and commercial buildings projects that have mainly emerged in different parts of Kigali in the last 15 years (Souza and Feijo, 2011).

Due to unpredictable factors, housing loan borrowers become delinquent and this negatively affected financial performance of commercial banks. This resulted in NPLs ratios that are higher than the acceptable ratio of 5%. Nonperforming housing loans ratio (NPL) in commercial banks was 6.9% by June 2013 which increased to 8.2% in 2014. Shocks to the commercial banks led to a situation where financial performance of commercial banks declined in 2013 and 2014. It was found out that return on asset was 2.3 and return on equity 10.9% for the year 2013 which declined to 2.1 and 9.9 respectively in 2014. These figures indicate how commercial banks were chocked financially. Looking at the financial performance of individual banks, one notices that return on asset and equity for BK the biggest commercial and the booming bank has been stagnant between 2010 and 2014. Return on asset for the year 2014 was 4%, in 2013 4% and 3.9 in 2012. This led to the introduction of reforms in monetary policies regulations in 2015 to strengthen the Rwandan financial system and protect commercial banks from severe performance risks arising from defaulting borrowers and Nonperforming housing loans. Since the introduction of the aforementioned reforms, no studies were conducted to investigate the effectiveness of the aforementioned reforms in terms of diminishing the rate of NPLs and affecting financial performance of the selected commercial banks in Rwanda.

Furthermore, the researcher found out that the existing literature on NPLs and performance has left a deep knowledge gap. For example, Panta (2018), Mulowork (2016 and Nigoani (2015) in their studies, focused on effects of NPLs on financial performance of banks. It is worth noting the important contribution by Junmin (2018) and (2015) through his consecutive studies on the Non-Performing Loans in housing bubbles, and the effect of NPLs on housing prices in China. Obviously scholars investigated how housing bubbles led to NPLs and how NPLs affected housing prices, but none of them published empirical findings on non-performing housing loans and the effects on financial performance of the commercial banks. Through this study, the researcher attempted to answer that unanswered question, hence justification of the study.

1.3. Objectives of the study

The researcher had to set the general and specific objectives to guide the study to successful completion.

1.3.1. The general objective of the study

The general objective of the study is to assess the effect of non-performing loans on financial performance of the selected commercial banks (BPR, BK and ECOBANK) for the period of the study. To achieve this objective, the general objective is supported by the following three specific objectives:

1.3.2. Specific objectives

The specific objectives of the study are to:

1. Examine Non-Performing Housing Assets Loans of the selected commercial banks for the period of the study
2. Determine the financial performance of the selected commercial banks for the period of the study
3. Assess influence of non-performing housing loans on financial performance of BK, BPR and ECOBANK

1.4. Research questions

This study attempts to find answers to the following questions:

1. What is the Non-Performing Housing Loans (GNPHA) of the selected commercial banks for the period of the study?

2. What has been the financial performance of selected commercial banks for the period of the study?

3. What is the influence of non-performing housing loans on financial performance of selected commercial banks?

1.5. Justification of the Study

To achieve growth of housing in Rwanda requires the huge finance which requires the private constructors to approach some commercial banks which have the housing loan product in their loan portfolio. It is worth noting that housing sector is very important in National economy. Development of sectors of economy create excessive demand for housing infrastructure. Investors in this sector need to work with commercial banks to finance construction activities. However, commercial banks have to be very careful in provision of loans to finance huge construction projects. Feasibility studies have to be convincing that investors will be able to repay loans adequately. Good performance of the housing sector will positively affect loan repayments and the financial performance of commercial banks.

This study is beneficial to different individuals and organizations in many different ways. It is beneficial to the researcher, academicians, to professionals in the banking sector, the regulatory agencies in this case the central bank, fellow students among others.

First and foremost, it is beneficial to the researcher whose curiosity was satisfied but also whose knowledge expanded. The researcher felt proud that he has discovered new knowledge and made his contribution to knowledge that will be useful to academicians and others in the banking sectors. The study will be of benefit to academicians because it provides useful information that can be used in learning and teaching process. Fellow researchers will find it useful to understand the performance of loan portfolio and financial performance of the commercial banks.

The commercial banks and professionals from the banking sector will find the findings quite informative useful. Recommendations made on basis of key findings will help them improve performance of loan portfolios and improve financial performance. Further researches on commercial banks, brings awareness that commercial banks need to let the public understand and know what they do by making all necessary financial data available to the general public.

This study will also benefit the regulatory agency, which is the central bank, the Banque Nationale du Rwanda (BNR) in this case. The central bank will learn from the findings of this study the

effectiveness of the policy reforms they have adopted and enforced in the past. Gaps in enforcement of policies and needs for new policies will be pointed out.

The study is of a great value to students who are expecting to get a Master degree in Finance. The findings of this study will supplement the knowledge acquired in school and be useful to them while undertaking their final year research on similar topics or areas of interest.

1.6. Limitations of the study

During the conduct of this study, various limitations were encountered. Correction of the data involved the selected commercial banks in the city of Kigali. Given the in-depth analysis that required collection of data on housing loans, accessibility of such data was difficult. To mitigate this, the researcher had to approach the banks and explain clearly that the study was to be conducted for purely academic purposes.

Given the nature of information on nonperforming housing loans, to collect data required that the researcher spend much more time to get various reports on financial performance and particularly on nonperforming housing loans. It required much time and hard work to read reports and compile key data from all of those reports from different commercial banks. This was time-demanding but interesting to the researcher whose interest was to fill the knowledge gap and to contribute to knowledge area. To overcome this, the researcher had to request and get one-month annual leave, and tried all his best to link up with the commercial banks to get the required data for the study. Combining normal work and research could not be possible because conducting research required hard work and a lot of concentration. The annual leave helped to address the constraint of time to work against the deadlines set by the study supervisor and the deadlines set by the university.

1.7 Brief description of the thesis structure

This study is organized in five chapters. Chapter one comprises the background of the study, statement of the problem, research objectives used to guide the research, research questions, justification of the study, limitations and delimitations of the study, and a brief description of the thesis structure. Chapter two which is literature review covers the theoretical review, conceptual review, empirical review and conceptual framework. Chapter three which is methodology includes

research design, population of the study, sampling procedure and data collection, operational definition of variables, methods of data analysis and ethical considerations.

Chapter four which is data analysis and interpretation covers presentation of data, data analysis, results and discussion, whereas chapter five which is major findings, conclusion and recommendations includes a summary of major findings, conclusion and recommendations.

CHAPTER 2: RELATED LITERATURE REVIEW

This chapter covers four important parts that include theoretical review, empirical studies, theoretical framework, and the conceptual framework. Literature

2.1 Theoretical review

This part covers various theories adopted in this study on lending and performance of loans in financial institutions. Theories presented here are those that explain lending dynamics in terms of leading factors of Non-Performing Loans, and remedial strategies. They include credit default theory, Information Asymmetric Information theory, and Accelerator theory. Researchers for a long time, have developed a variety of theories and assumptions that try to provide explanation of the factors related to the occurrence and accumulation of non-performing loans in commercial banks. The development of literature work assessing non-performing loans is attributed to the fact that non-performing loans bear a very negative effect on financial performance of commercial banks. Scholars who conducted studies in different parts of the world like Argentina, East Asia and sub-Saharan Africa have proved that nonperforming loans are strongly associated with low financial performance of 1990s and mostly recently in US and Europe (Anayochukwu, 2016). The moral credit default theory, financial accelerator theory, and information asymmetry theory were developed to confirm hypothesis of impact of non-performing housing loan to the financial performance of commercial banks in general.

2.1.1. Credit Default Theory

Credit Default Theory has been developed by Sy (2007). Most current credit default theories fail to establish a linkage between the causes and effects of loan defaults and cannot assess credit risks in a very dynamic market environment as experienced in the recent mortgage and credit market crisis. This theory helps managers assess credit risks analytically and eventually to measure and manage credit risk energetically to enhance the stability of the financial system. Sy (2007) strongly believes that credit default is due to both delinquency and insolvency. This theory is relevant for circumstances where there exists indirect relation to the effect of default that affect the financial performance.

Delinquency is defined as a situation where the borrower fails to meet a loan payment per the loan repayment schedules. On the other hand, insolvency is defined as a state of a banking institution where liabilities are greater than assets. The term credit default really revolves around the concept

of delinquency. Delinquency takes place when a customer who borrowed money fails to make a loan repayment as per the agreed loan repayment schedules. When a banking institution becomes delinquent, it triggers assessment of solvency which can lead to a conclusion of negative equity position that can cause loan termination and lead to loss on the side of the lender.

When credit officers are assessing borrowers' suitability, one of the main factors of consideration is the loan serviceability. However, there are unpredictable factors that can lower the borrowers' loan serviceability. This means that it can change over time due to individual circumstances and changes in micro and macro-economic conditions. A loan which may have started off as being simply a serviceable loan may become so hard to the borrower due to unpredictable adverse factors from the environment. In summary various scholars over time, attempted to explain nonperforming loans and effects on financial performance of banking institutions. They all noted that delinquency occurs when borrowers is unable to repay the loans by the due dates and that this affects banking operations and eventually lead to low financial performance.

This theory is very significant in this study. It helped the researcher and is intended to be helpful to the audience and the managers of commercial banks in particular in paying more attention to how lending operations should be managed. It reiterates the importance of preventing or minimizing credit delinquency by carefully analyzing different factors that can cause borrowers to default. Preventing or keeping delinquency at a minimum possible helps banking institutions to minimize possibilities of insolvency. Low levels of delinquency will eventually lead to good performance of the loan portfolio and in turn will help commercial banks to have improved financial performance.

2.1.2. Information Asymmetry Theory

According to Sean (2020) the development of the famous economic theory of information asymmetry can be traced back to 1970s and 1980s by three renown scholars namely George Akerlof, Michael Spence and Joseph Stiglitz. It provided a credible explanation of potential factors of market failures. Economists define market failure as a situation where there is an inefficient distribution of goods and services in free market, where demand and supply are the only determinants of price. The theory posits that information imbalances between customers and sellers lead to market failure. Information Asymmetry Theory is relevant in lending circumstances where the lender has inadequate knowledge. In particular, one party has limited or distorted information on the other. Asymmetric information constitutes a big challenge in financial market especially in

borrowing and lending operations. It is believed that the borrower knows much better about his financial state than the one lending. Asymmetry of information has to be considered since credit managers need to make truthful information to make sound economic and lending decisions. Accessing information on borrowers from different sources helps to have adequate information on credit applicants. This theory of information asymmetric tells us that it may be difficult to distinguish good from bad borrowers, which may result into adverse selection and moral hazards problems. The theory posits that in the market, the party that has more access to accurate information on a particular thing to be transacted like a borrower in lending, is well positioned to bargain better terms for the transaction than the other party (in this case, the lender). The lender in this case who knows less about borrowers or about the same particular thing to be transacted can either make right decisions just by chance or wrong decisions regarding the transaction.

Generally, customers applying for loans have all information about their financial position and their capacity of loan repayment. However, in most situations while borrowing, they tend not to disclose the truth in order to qualify for more financing than they really deserve. This leads to information asymmetry and moral hazard. Adverse selection and moral hazards have led to significant accumulation of Non- Performing loan in banks (Macharia 2012).

The significance of the information symmetry theory in this study is that it helps researcher, the audience and managers in commercial banks in particular to understand more deeply how asymmetric information is one of the key factors that can lead to inefficient provision housing loans which can in turn lead to high levels of defaulting loans and eventually to poor financial performance of the commercial banks. So it stresses that managers of commercial banks have to avoid asymmetric information in their lending operations. To conclude, information asymmetry theory posits that distinguishing good from bad borrowers is difficult. It tells that credit managers need to spend enough time to learn and know borrowers especially those borrowing huge sums for financing high risks projects like construction of different types of houses. If not, high rate of defaulting loans, can lead to insolvency of the commercial banks and low financial performance in the long run.

2.1.3. The Financial Accelerator Theory

According to Clay (2019), the financial accelerator theory gives a detailed explanation of how lending and borrowing operations are to a larger extent affected by small economic shocks. This

theory is built on how the external finance premium that rise owing to inadequate flow of information and borrowers and lenders and economic agents' net worth are interacted. Economic agents' net worth can be defined as: the sum of liquid assets plus collateral value of illiquid assets minus outstanding obligations; and the external finance premium can be defined as: the difference between the cost of funds raised externally and opportunity costs internal to the firm. The theory posits that in most cases, many borrowers are interested to invest in projects that are riskier. Usually such projects are those that if properly managed have potential to help borrowers generate huge return than low risks investment projects. These projects are preferred from borrowers since the firms' losses in the case when the project's return is low and are limited to zero by legal regulation. The financial institutions' point of view is that these kinds of high risk and high return propensity projects are very unfavorable because they bear all, or most of, the costs in the case of project poor performance and failure. The theory also posits that owing to some economic shocks, the customers may not be able to borrow and try to avoid loan repayments.

This theory is significant in this study, because it helped understand the reason why most borrowers tend to request loans that are very risky. It warns the managers of lending operations in commercial banks that these high risk projects that include mainly construction of houses projects are very unfavorable to the financial institutions and that they have to be careful in provision of such loans. The theory is most significant again, as it helps to understand immediately how defaults of housing loans constitute a major shock to the commercial banks and bear directly a negative effect on the financial performance of the project.

2.2. Conceptual review

Theoretical review presents and discusses various works related to the concepts of the study. It gives details on determinants of NPL, the Non-Performing Assets, financial performance, and relationship between NPL and financial performance.

2.2.1 The concept of Non-Performing Loans (NPLs)

According to BNR (2015) a loan with pre-established repayment schedules is considered non-performing in the first place if the principal interest is due and unpaid for a period of ninety days or more. Second, it considered non performing if the principal or interest payment equal to ninety days' interest or more have been capitalized, refinanced, renegotiated, restructured or rolled over.

A non-performing loan (NPL) is defined with focus on qualitative factors relating to doubts about full collectability and/or quantitative factors, primarily a number of days past due trigger, generally

90 days as set by the International Monetary Fund (IMF). For this reason, to ensure the stability of the financial sector, the central bank regulates financial institutions with a particular focus on management of loans. Commercial banks are monitored regularly to ensure that these stringent regulations are put into effect.

Banking institutions risk to fail to recover the money lent to borrowers with other charges (interest or other charges), on agreed time periods. This risk is mostly caused by controllable and non-controllable factors (Federal Deposit Insurance Corporation, 2016).

2.2. 1.1 Concept of Non-Performing Housing Loans (NPHLs)

Non-performing housing loans means prime or sub-prime loans that were provided to borrowers to finance home and commercial houses construction projects that are ninety (90) days or more delinquent. The commercial banks regard this as financial assets that are no longer generating interest and/or installment payments as per the loan repayment schedules. (Junmin, 2015).

Many scholars view Non-Performing Loans typically as a by-product of economic crisis. NPLs are accidental occurrences in loan management that have huge potential to extend the harshness and duration of a financial crisis and render macro-economic management complicated. Furthermore, non-performing loans bear adverse effects on business investments in all sectors of economy. Many financial institutions lose credibility and this stifles investment decisions to raise fund from financial institutions (Ozili,2020). For bank-centered financial systems mainly in developing countries, Non-Performing housing loans can hinder economic recovery as they reduce significantly the operation margin and the capacity of the commercial banks to continue providing loans. Obviously, Non-performing housing loans have adverse effects on the financial performance of the banking institution. Banking institutions with high rates of non-performing housing loans find themselves in a difficult situation where they are required to incur carrying costs on non-income yielding assets that reduce profit levels and affect negatively capital adequacy.

There are different types of housing loans. Barbara (2010) defines mortgage as a loan product that allows the borrower (mortgagor) to obtain funds to purchase real estate. The lending institution is given a lien on the property as security that the loan will be repaid. The customer is given the needed money and the lender starts generating interest. The customer has the right of ownership and to utilize the property. The lien is removed when the total amount of the mortgage has been paid off

in full. The oxford Dictionary defines a mortgage as banks and building company's legal agreement by which they lend money at interest rate in the exchange of debtor's property titles. With the condition that the conveyance of title becomes void upon the payment of the debt. This definition looks similar to the Webster's New World Finance and Investment Dictionary (2010)'s definition. They both consider any type of property that is used as collateral security for a debt.

2.1.1.2 Types of Non-Performing Housing Assets (NPHA)

There are two common types of Non-Performing Assets. The first and very important type is the gross Non-Performing Housing Asset (NPHA), and the second is net Non-Performing Housing Asset.

Gross Non-Performing Housing Assets (GNPHA)

Gross non-performing housing assets means the amount of all housing loans that have been delinquent by the customers due to various reasons within a specified period of ninety (90) days. Borrowers for that period have not been able to pay the principal loan and interest as per loan repayment schedules. Banking institutions have to improve lending standards to lend to quality borrowers, which helps them to attain high financial performance. In spite of the foregoing, banking institutions still experience late loan payments and loan defaults. For this reason, banking institutions must account for loan defaults and expenses that are made as a result of lending. Banks include loan loss reserve in their financial statements to incorporate changing forecasts for losses from housing loan products (Gabe, 2020).

Net Nonperforming Assets (NNHA)

Net nonperforming housing assets refers to the unpaid loan amount that remains after deducting banks' provision for unpaid debts from the gross nonperforming loans. It is believed that Gross non-performing housing assets bear a negative effect on the banking institution goodwill and negative effects negatively affect equity value whereas net non-performing assets causes low level of profitability and liquidity in the bank's cash reserves. Gross nonperforming housing assets (NPHA) represents the exact NNPAs and in particular the quality of the loans made by a banking institution. (Ozili, 2019).

2.2.2 Determinants of Non-Performing Housing Loans

Financial crisis in many ways can arise from factors specific to the bank or macroeconomic conditions. Relative causes of NPLs occurrence cited by some researchers includes; economic

condition like inflation, interest rates, whereas bank specific factors include efficiency of the bank, bank capital, income diversification among others. This section presents and discusses different determinants of Non-Performing Loans including efficiency of the bank, bank capital, and income diversification.

Efficiency of bank

Efficiency institution means that commercial banks' operations are run at a comparatively low cost. That's when we can conclude that the banking institution is efficient. Decline in the cost efficiency of a commercial bank has propensity to lead to loan defaults in future. This is experienced by those banking institutions whose managers are not able to control operating expenses and ensure quality loan portfolio management. According to the European Parliament (2018) after low level of efficiency of the banking institutions exposes to a greater extent the bank to cumulative Non-Performing Loans. This is in agreement with what Huljak (2020) found out that deterioration in efficiency of the commercial banks has actually led to increasing level of non-performing loans and poor financial performance in the euro area countries.

However, in another study conducted in Sri-Lanka, it was revealed that in situations where bank's efficiency is deteriorating, NPLs tend to increase. The study found out that there existed a positive relationship between loan to asset ratio and NPLs. Large banking institutions tend to have higher levels of efficiency which leads to reduced level of nonperforming loans. Therefore, it was concluded that larger banks have less defaulting loans compared to smaller ones (Ekanayake and Azeez, 2015

A strange experience was faced in Sri-Lanka, where increasing banks' increasing cost efficiency in commercial banks was followed by increasing loan defaults leading to a formulation of a hypothesis that an increase in loan defaults is a result of reducing cost on underwriting and focusing on loans in short run bear the risk of having non-performing loans and poor financial performance in future. Ekanayake and Azeez (2015). This is in agreement with the study of Benthem (2018) whose findings showed that high operating efficiency leads to high levels of NPLs. This means that macro-economic factors have contributed to situations where NPLs increase in spite of high banking institution' high efficiency.

Bank capital

There is a direct effect of bank capital on nonperforming loans. It was observed that managers of low capitalized banks like to lend to borrowers with high risk projects which they finance without credit analysis and follow up of the borrowers. This results in the increase in loan delinquency which shows a negative association between bank capital and NPLs (Ekanayake and Azeez, 2015). High level of capital allows banking institutions to provide different types of loans both short-term and long-term with a conviction that they cannot be bankrupt or fail. They suggest that high capital will help to maintain nonperforming loans at a minimum rate. Capital adequacy ratio (CAR) shows the ability of an organization to face abnormal losses and to survive that situation. Many studies revealed that the capital adequacy ratio and nonperforming loans are negatively associated. This means that increase in capital adequacy leads to reducing non-performing loans.

The findings of Muhammad (2016) are in disagreement with findings a study conducted in Nepal by Koju and Wang (2018). Their study concluded that bank capital has positive association with NPLs which means that increase in capital adequacy could not lead to the reduction of non-performing loans.

Income diversification

There exist two kinds of earnings received by the commercial banks. In the first place, we have earnings from lending activities, and the second kind is banks' earnings from noninterest activities including trading and derivative transaction. Studies have revealed that banking institutions that earn income other than interest income are more careful and try to lower their risk by investing very less in high-risk investments. That's why, those banks have better loan performance showing the inverse relationship between NPLs and income diversification (Muhammad et al., 2020).

Louzis et al. (2016) investigated various banking and microeconomic factors as determinants of NPLs such as leverage ratio, ROA, CAR and noninterest income in different Greek banks and concluded that ROA has a negative impact while noninterest income has a positive impact upon NPLs.

Rachman et al. (2018) studied the various banking factors affecting the NPLs in Indonesia including income diversification, bank capital and other banking factors. Their study revealed that these factors do not influence NPLs; however, a negative association was found between NPLs and income diversification. Based on the results as mentioned earlier of the studies, we suppose that Income diversification has a positive association with NPLs.

2.2.4Financial Performance of commercial banks

Profitability indicators were used in this study to measure financial performance of the selected commercial banks. Profitability as a key indicator of the commercial banks' financial performance, it indicates that a bank is well positioned in the market and that there exists high quality management. This helps the bank to control risks and overcome easily short-term problems. This study adopted only three main indicators of profitability namely return on asset (ROA), return on equity (ROE), and net interest margin.

By profitability is meant the capacity of a business to be successful financially. Most business organizations analyze profitability to make sure that they make decisions that foster their capability to make profit. There are three main circumstances that can be used to describe financial institution's financial situation. Either, it can make profit, break-even or can make a loss. Generally, all commercial banks want to make profit. Profitability the utmost aim of banks in the short and long run. Banks must remain profitable in order to resist negative shock and continue to operate in the long-run. That is why, it is necessary to managers to assess current, future and past profitability levels. While analyzing profitability, there is need to look at both gross profit and net profit. Total sales minus direct cost of goods or services produced whereas for net profit, the formula is deducting general and administrative expenses, depreciation costs and all taxes from its revenue and any other income. The measures of profitability include Return on Assets (ROA) which is calculated by dividing a company's net income by the average total assets, return on Equity (ROE), determined by dividing net income by the average shareholder's equity and Net Profit Margin (NPM) computed by dividing net income by revenues (Scott 2019).

2.2.4.1 Return on assets (ROA)

High return on asset (ROA) in banking institutions is a great indication of good financial performance. It indicates that the bank is earning more income on less investment. This helps the financial institution to grow exponentially and expand investments. Commercial banks that increased gradually the return on asset performed had potential to provide better services, attract customer base and expand their activities to more geographical locations. High return on asset among many other benefits helps the commercial banks to remain more competitive. Banks with high return on asset, have the potential to provide affordable financial services to the customers in addition to investing in provision of better services. (Muluwork, 2016).

Return on asset as a measure of profitability, helps commercial banks to have an idea of the ratio of return on asset they own. Bankers get to know how their businesses are in converting the asset into net income. In calculating the return on asset (ROA), we net income derived from the income statement and total asset obtained from the balance sheet are considered. While comparing banking institutions, a financial institution with high return on asset means that the bank was able to use its various resources efficiently to generate income. It is worth mentioning that the ratio removes the effect of the bank size. In comparative studies, a smaller banking institution can be more efficient than bigger ones since it was able to generate more income for each money of its asset (Claessens & Kodres, 2017).

2.2.4.2. Return on Equity

A high return on equity indicates that the commercial bank is increasing its profits without needing much capital. Further it is an indication of how the managers deploy shareholder capital. On the other hand, dropping return on equity indicates that there banking institution is less efficient in managing equity capital. This is a very important criterion for the investors to be convinced to invest their money in a given commercial banks. Commercial banks with high return on equity will be more attractive to the investors. It gives credit that the commercial bank will be able to generate high return to the shareholders. It is also an indicator that the management of the commercial bank is able to use equity financing to fund bank operations and growth. (Muhammad et al., 2020).
Return on equity ratio is estimated by dividing net income by the shareholders' equity. ROE is a profitability rate from the shareholders' point of view. Investors are interested in high return on equity to be sure that the banking institution is likely to utilize their fund effectively. Commercial banks calculate return on equity at the end of the year and may choose a given number of years to understand the trend in generation of return and the capacity of the banks to maintain positive earnings growth. These reports are made available to the public in order to attract more investments (Ugoani, 2015).

2.2.4.3. Net Interest Margin (NIM)

A positive net interest margin (NIM) in a commercial bank indicates that it is operating profitably, whereas a negative margin indicates that there is investment inefficiency. In the former situation, a banking institution must take a remedial action by applying funds toward outstanding debt or shifting those assets towards more profitable investments. Further, a positive Net Interest Margin

gives credit to the manager that the investment decision was good. The Net Interest margin help managers know the profits the bank has made on investing activities as a proportion of total investing assets. Financial institutions in general use this profitability ratio to analyze the effectiveness of investment decisions made and track how their lending operations are profitable. This is very important because it helps them to make necessary adjustments to maximize their profitability. (Ekanayake and Azeez, 2015).

Banks mobilize deposits from customers and pay them some interest especially for fixed-term deposits. The bank in turn lends this money to other customers to finance their businesses and projects. The NIM now calculates the difference between the sum of interest paid to depositors and the amount of money it makes in lending out the money to other customers. To calculate the net interest margin, in the first place you have to calculate the sum of the investment returns also known as interest income. The commercial bank must have investments and be earning interest on those investments. First and foremost, these returns have to be summed up. Second, interest expenses of the bank are summed up. These are the interest which the bank pays to whom they have borrowed money. The third and last step the bank will subtract the interest expenses from total interest income or investment returns. To understand this clearly, let us take an example for one bank, the Net Interest Margin is 8.7 percent. It means that for every $100 of invested assets mostly loans, the bank made $9 of income after all interest expenses have been paid to all the banks' lenders. Therefore, it is obvious that the bank made good investment decisions during period X and used its resources effectively. Management made right investment and managerial decisions. Having a positive net interest margin will affect management decisions the following year. In such a situation, the bank may decide to charge higher interest rates to the borrowers or pay less interest to the fixed-term depositors. This means thus, that having a good net interest margin gives a competitive advantage to the commercial bank to invest more in quality service and impose its reasonable rates on the customers. (Scott 2019).

2.2.5NPHLs and Financial Performance

This section covers a discussion of related experiences of financial performance and NPLs from different similar studies conducted in different parts of the globe. Bank managers always need to measure Non-performing loans (NPLs) because they are a real reflection of the credit quality of the loan portfolio, and in general, represent the level of the performance of the loan portfolio of the

financial sector of an economy. They quite often need to keep NPL rate at a minimum to ensure that their banking institutions perform well. The lower, the rate of NPL, the higher the commercial bank performs. The higher the NPL, the lower, the level of financial performance (Ozili, 2019).

Influence of NPLs and Profitability of Commercial Banks

In a study conducted in Pakistan on the relationship between NPLs and profitability, findings revealed that NPL has a negative and substantial impact Profitability of the selected commercial banks. This means that there is a strong effect of Non-Performing Loans on profitability of the commercial banks (Muhammad et al., 2020).

2.2.6. NPLs and Return on Asset

According to Muhammad, et. al. (2020) in their study conducted in Pakistan, it was found out that there is existed a relationship between Return on Asset and Non-Performing Loans.

According to Ugoani (2015) there is a relationship between Non-Performing Loans and return on assets (ROA). Non-Performing loans are high, lowers the return on assets and the lower nonperforming loans, the higher the return on asset.

On the other hand, Boudriga et al. (2015) confirmed from their study that there is a negative association between ROA and NPLs. They drew a conclusion that when the ROA decreases, banking institutions start to make investments in high-risk projects, and as a result the level of NPLs increases. In such situations, declining return on asset (ROA) puts pressurizes commercial banks to provide more housing loans expecting to recover the financial health of the institution. Banking Institutions with a high level of revenue are less involved in perilous investments that can lead to loan defaults in the future which bear a negative effect on profitability and financial performance of the institution. Credit policy does not only help the banking institution to make profit but also to maintain the good public image.

Fannie and Freddie (2019) stated that there is a close association between NPLs and ROA. when the return on asset is low, the rate of nonperforming loans has risen high and when the nonperforming loans decline the return on asset increases. Hue (2015) in her study conducted in Vietnam, made a conclusion that when the growth rate of loans increased, the nonperforming loans and reduced the return on asset for the commercial banks.

Kirui (2015) revealed that nonperforming loans had a negative impact on the profitability of commercial banks in Kenya from 2004 to 2013. Kumar and Kishore (2019) in their study, found out that among the different banking and microeconomic factors return on asset had non-significant relationship with nonperforming loans in the banking system of the UAE

2.2.7. NPLs and return on equity (ROE)

The research findings of Muhammad, et. al. (2020) showed a strong relationship between NPLs and return on equity among selected commercial banks in Pakistan for the specified study period. The findings are in agreement with the findings of Sean (2020) affirming the influence of NPLs on return on equity.

Non-performing loans affects negatively operating efficiency of the commercial bank. This hinders the capacity of the bank to meet short and long term obligations to their customers as it reduces bank's liquidity and leads to low return on equity. Many commercial banks do not provide housing loans in some locations as a measure to avoid liquidity risk. But the level of the risk has to be kept in perspective. A commercial bank with sound creditworthiness should not face variabilities in its demand for cash of over 50% of its total assets. In theory, this could mean that up to 50% of its assets could be long term in their maturity without credit risk. This kind of liquidity can be greater for mortgages, either in their ordinary form or in some kind of securities form than for heterogeneous business loans either secured or unsecured by assets that are hard to obtain physical possessions of or to dispose-off. The effective liquidity of long term mortgage loan actually may be strong in an economic crisis than a short term commercial loan (Ozili,2019).

Finally, the level of liquidity of housing loan can be determined by a number of factors that include the quality of assets and how the financial system is well set. In case of defaulting, low risks assets can be liquidated through direct sale or some moderate premium to compensate for the relative illiquidity (Koju and Wang, 2018).

2.2.7NPLs and net interest margin

Making profit is very important for a commercial bank, other key stakeholder and the nation at large. Shahidal (2016) in his study conducted in the southern Asian countries, reported that the decrease in nonperforming loans significantly influences positively the net interest margin of the

commercial banks. This helps the banking institutions to increase its level of operating efficiency and profitability.

According to panta (2018), increase in nonperforming loan diminishes the interest income and significantly lowers profitability of a commercial bank. As asset of the bank increases, banks find themselves in a difficult situation where they cannot apply proper management practices because of huge operations to be handled.

2.2.8 Banking Capital and NPLs

There is a strong correlation between banking capital and financial performance. On the other hand, this capital is strongly associated with NPLs. This means that high NPL affect capital of the commercial banks. The study conducted by Muhammad, et. al. (2020) revealed that there existed a negative relationship between NPLs banking capital. This means that good performance of loan portfolio will eventually result in increasing banking capital.

2.3. Empirical review

In this part of study, the researcher discussed the literature review as a part of empirical research report which plays a key role of non-presented theories or related existing knowledge which support the research argument. It is there to set the boundaries of discussion by highlighting the core concepts to be used in discussion.

Nonperforming housing loans do not only bear a negative effect on the banking institutions, but also affect in general the economy of nations.

The defaulting of housing loans of 2007-2009 in US negatively affected the financial performance of commercial banks and led to a serious financial crisis. Due to the housing bubble the US economy entered a recession in 2007 and the following year of 2008 the GDP reduced by the rate of 5.4% and 6.4% in the first quarter of the following year 2009. This had many negative effects to the economy. Many business companies were affected and performed poorly. In the first place due to the downsizing of employees in many organizations, the rate of unemployment rose from 4.9% in December 2007 to 9.5% in mid-2009 (Jungmu, 2019).

The development of the housing market in Ireland from 2006 onwards led to a situation where the major source of revenues for the government was the property market. The government was generating its revenues from stamp duties, capital gains tax, Value Added Tax (VAT) paid by the developers and the income tax paid by the employees working for the huge construction companies.

In the same period the financial institutions had got access to the financial markets of European Union resulting from the integration. They were able to borrow short term funds at cheap rates from the European union financial market. The funds borrowed were used to provide mortgage loans in Ireland. These financial institutions were caught up in a situation that was very unusual to them. They were used to the traditional lending practices that consisted in using deposits to provide loans. The risk they took was followed by exuberance public spending in the housing market. The accumulation of lending and government spending in housing proved to be affecting the banking institutions and paralyzing the financial system in general (Gillingham and Buckle, 2014).

Default of housing loans in Ireland was due to different factors that included easy credit, low interest rate, speculation and unresponsive supply. During the financial crisis of 2008 the economy of Ireland was growing at 6% while in the rest of other euro zone states the growth rate was 2.25%. Owing to the substantial low interest rate than it should have been for a rapidly growing economy, the Irish people and were able to borrow more than they would have borrowed and this led to a rapid property boom. All this increased heavy investment in housing. By the year 2007, the proportion of investments other than housing loans was 27%. As the investment in housing increased, the rental prices went down, however, investors remained confident to earn returns through capital gains as it is predominantly done in Australia. Later, the property prices fell down. The investors withdrew from the property market. This brought down significantly the house prices prior to the crisis in 2007.

According to Huljak (2020) the UK's Policy Exchange Paper of 2005, the Ireland planning contributed to the bubble because they delayed to provide building permits which in turn delayed the supply of housing to the demand. When construction permits were issued too late, it resulted in the construction of a very large number of standardized, small, and poor quality houses in the suburbs or sometimes at longer distances from the cities. In the first place, large numbers of flats, something that people of Ireland were not familiar with, in the form of big apartment blocks. Second, the whole new housing colonies were built, consisting of hundreds of identical semi-detached or terraced houses lacking any individual character.

According to Gabe (2020), it was too late when the government realized the challenging situation because the prices of houses had enormously increased. In addition, despite the sharp increase in the house prices, the government continued to encourage housing investments. The government,

central and local government planners were only interested in huge numbers of houses and failed to understand that investments in housing sector should have been promoted in a reasonable manner. This lead to an increase in numbers regardless of the quality and whether the houses were really needed. This mentality contributed significantly to the sharp increase in the supply of low quality houses in remote locations. The decline in the house prices led to the nonperforming housing loans and low financial performance of the banking sector. In turn, the whole economy was shaken as tax revenues severely reduced owing to the heavy reliance on tax revenues from the construction sector as a main source of public revenue.

This challenging situation in Ireland, led to the sudden increase in unemployment. The banking institutions had begun to reduce the provision for housing loans due to high rates of nonperforming housing loans. In response to this situation, the government intervened and provided a guarantee to the banks using public funds in order to address the decline in the performance of the property market. This drastically increased the government expenditure leading to the increase in the budget deficit (Donnery et al, 2018).

Ireland ended up losing its international creditworthiness as in November 2010 its yield debt reached an unsustainable 9%. The government became locked up as it had a budget deficit which it couldn't fund with international debt. The remaining option for Ireland was to reduce public expenditure and line them with the public revenues (Donnery et al., 2018).

Given the fact that low performance of housing loan portfolio affects macro-economic conditions, governments should play a role of regulating the financial system and ensure that those rules and regulations are complied with. Responsible government agencies need to ensure that the national and international rules and regulations are followed in management of loans.

At the other extreme the governments can own and operate the housing finance system or even the entire financial system. Many countries operate in between these two extremes, mostly with a combination of policies that reflect the particular tradition and circumstances of the country. The result is that systems that tend to vary dramatically in their operation details across countries. This variation sometimes is mainly superficial, with important impact on the successfulness of the system. In other situations, the intervention significantly reduces the potential for financial intermediation to facilitate the formation of residential capital or significantly increasing the cost.

It is easy to perceive some of the benefits and drawbacks of government interventions by taking extreme cases of complete government ownership and operations of the system. In such situations, the government is in advantageous position of controlling most of the factors that make lending risky. In some cases, the government makes good use of these advantages for example credit risk for homeowner lending has not been a problem in communist societies because the government lender could embellish wages from the government employer. Liquidity was not a concern especially since there were no other financial intermediaries competing for funds (Gabe, 2020).

These problems were identified and put into three ordinary government interventions which are to mediate imperfections in the market decision making process, to ensure stability of the financial system in the economy and to regulate and monitor the distribution of income. The first and second interventions are thoroughly interconnected, on the basis of the fact that financial markets generally do not meet the ideal of wholeness and perfection, including zero cost of transaction and information and absence of cost and benefit that yield to the society and not to private parties. They are occasionally meant to rationalize government actions that increase the direct movement of funding to housing sector. For instance; housing intermediaries may receive tax or funding advantages or they may be tax advantages to borrowers. In many cases, the end-result will be the creation of exceptional circuits to enable adequate provision of housing finance (Robinson and Hammitt, 2011).

Direct measures to raise the funds for housing is not the best remedy to these types of market failures. In such situations, it is far much better to identify the real nature of market failure and come up with the intervention to address the problem. To give an illustrative example, some lenders may be advised not to lend to certain categories of the population because of challenges in enforcing recovery measures. In this regard, the government can play its role in facilitating borrowers to provide practical security of loan repayment rather than a situation whereby the government force banking institutions to lend or take on risk of non-payment. In the same way, the government may also make its intervention to help banking institutions to strengthen management system, liquidity or agency risk because only the government may have the information, powers, resources and incentives needed to control these risks appropriately particularly in emerging economies (Claessens & Kodres, 2017).

On the other hand, remedial measures to address perceived imperfections in private market can simply cause more imperfections. This is predominantly the situation when the government takes

over the risk rather than simply acting to facilitate appropriate control of the risks. This mostly happen in situations when the government decides to increase the agency risk in an attempt to lessen system risk through deposit insurance or mortgage insurance.

Occasionally, the government should look no further than itself to detect the sources of market dysfunctionalities in housing finance including restrictions on participation by commercial banks, limitations or the types of mortgage contracts that can be offered, and weaknesses in land titling and registration, foreclosure and eviction procedures. Forcing lending institutions to work around those kinds of barriers can be very costly in general and counter-productive to the overall objective of significantly raising the flow of funding to housing sector. The objective of changing the distribution of resources down to the less privileged parts of the society is a common motivating factor for intervention in housing finance. Obviously, a lot of families in emerging nations will have scarce finance to acquire housing provided by the formal market. It is worth noting that the suitable involvement in the situation is to enable supply through policies that decline the cost of growth of minimal formal owned or rental housing and to facilitate demand by programs that give funds directly to the beneficiaries. The typical example is the lump sum grants for home purchases. It is seriously noted that subsidizing housing loans at non market terms is usually very counterproductive. Such intervention disorganizes the operating of the financial market, and many times result in much less credit flows to the housing sector (Pojani and Stead, 2015).

2.4. Conceptual framework

A conceptual framework is an analytical research tool intended to assist the researcher to develop awareness and understanding of the concepts under study and to graphically present it (Auronen and Richard, 2013). A conceptual framework is used to make conceptual distinctions and organize ideas. It helps researchers to outline potential courses of action or to present a preferred approach to an idea or thought. It is used to illustrate research findings expected by the researcher. it is a very important tools as it maps out how variables adopted in the study can be relate to each other.

In this study, the variables adopted were conceptualized on basis of relevant theories and related studies by different scholars. In this section of conceptual framework stands for the researcher's synthesis of literature by showing how the phenomenon is explained. It put out the actions required during the study by giving its previous awareness and observations pointed out by other researchers. This is done by understanding the relationship and connection of research variables.

It also shows the concepts identified in demonstrating the relationship between Non-performing housing loans and financial performance of commercial banks in Rwanda. The reality is that financial performance of commercial banks depends heavily on good management of non-performing housing loans issued. In this regards the research tries to see the relationship between non-performing housing loans and how it affects the performance of commercial banks in Rwanda between 2015 and 2019. The researcher will conduct a study on the root cause of non-performing housing loans, the effect it has on financial performance of commercial banks in Rwanda and strategies to ensure effective management of non-performing housing loans in commercial banks in Rwanda.

Conceptual framework acts as a road map and direction of research undertaking, it also guides the researcher towards his objectives (Magher, 2017).

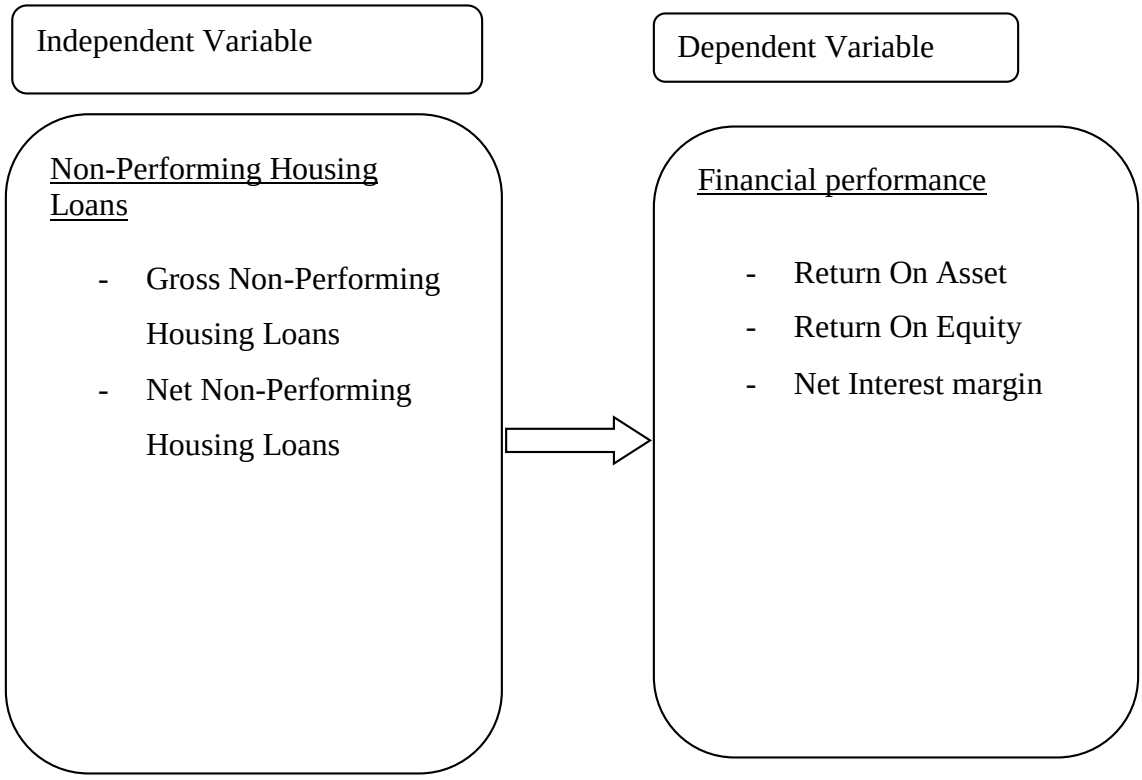

Figure 1: Conceptual framework

This study was carried out with the objective of finding out whether the financial performance and non-performing loans of commercial banks in Ethiopia has been related by using performance as

well as to test the existence of the relationship between the Capital adequacy, Asset Quality, Management efficiency, and Liquidity with the profitability measures.

In the context of this study, dependent variable is the financial performance of commercial banks (BK, BPR and ECOBANK); its complements are loans and total housing loans while independent variable is total non-performing loans and total non-performing housing loans. The researcher wants to find out how non-performing housing loans has affected financial performance of commercial banks (BK, BPR and ECOBANK) between the year 2015 and 2019. He will find out the relationship between independent and dependent variables using regression analysis. The R-Squared (Which is the coefficient of correlation) will help the research to confirm the findings.

Operational Definition of Terms

This section presents definition what the terms mean operationally in this study.

Definitions of dependent and independent variables under study are given as follows.

Non-performing loans (NPLs).

NPLs are the loans that are not paid by borrowers as per the loan repayment schedules. The loans do not generate interest and the principal amount for a period of ninety days. In this research, the nonperforming loans were measured first as the total non-performing housing loans, and as the ratio of nonperforming housing loans to NPLs.

Gross Non-Performing Housing Asset

In this study, gross non-performing housing asset (NPHA) refers to the amount of all housing loans that have not been repaid by the customers due to various reasons within a specified period of ninety (90) days. Borrowers for that period have not been able to pay the principal loan and interest as per loan repayment schedules.

Thus, to measure this, the researcher had to get nonperforming housing loans for each commercial bank from reports for the entire period of the study 2015-2019.

Net Non-Performing Housing Asset

In this study, Net Non-Performing Housing Asset (NNPHA) refers to the amount that results after deducting provision for unpaid debts from gross nonperforming housing assets/loans. To measure net nonperforming housing asset, the researcher had to subtract provision for unpaid housing loans from total nonperforming housing loans for each commercial bank for the entire period of the study.

Return on assets (ROA)

In this study, return on asset (ROA) refers to how profitable a commercial bank is relative to its total asset. It shows how the banking institution is financially positioned, with less pressure to invest in risky projects. In this research, to measure return on asset, the researcher collected ROA values from various reports from the selected commercial banks for the period of the study that extends from 2015 to 2019.

Return On Equity (ROE)

In this study, return on equity (ROE) is measure of financial performance that is calculated by dividing net income by shareholders' equity. Thus in this study, to measure it the researcher got return on equity values from reports of the selected commercial banks for the entire period of the study.

Net Interest Margin (NIM)

Net Interest Margin (NIM) is a measurement of the difference between the interest income made by the commercial bank and the amount of interest that has to be paid to different lenders including depositors and other banking institutions in relation to their interest earning assets. It is similar to the gross margin for non-financial business organizations. It is expressed as a proportion of what the commercial banks generate on loans in a time period and other assets minus the interest owed and paid on borrower funds divided by the average amount of the assets on which it earned income in the same period.

It was thus measured by getting the values from the reports produced by each commercial bank for the entire period of the study 2015-2019.

CHAPTER 3: METHODOLOGY

3.1. Introduction

This chapter presents various ways in which the study was designed and conducted. In conducting this research study, the researcher used techniques and methods which were necessary and useful to collect data for the success of this research study. This chapter covers the research design, profile of selected commercial banks, data collection, data processing, data analysis, and ethical considerations.

3.2 Research Design

A research design is a careful systematic study or investigation in some field of knowledge, undertaken to establish some facts or principles. It is also an entire process of study the problem formulation through dissemination of findings. For this study, the researcher applied descriptive and correlational research design. It used descriptive design because it considered production of descriptive statistics. This was appropriate to measure the level of nonperforming housing loans and the level of financial performance of the selected commercial banks. Furthermore, it is also correlational because panel data collected from various reports were subjected to multiple regression analysis to measure if there exists influence of nonperforming housing loans on financial performance of the selected commercial banks in Rwanda. Establishing the linkage of the main variables is done in line with the third specific objective of the study.

3.3 Profile of Selected Commercial banks

The study concerns three selected commercial banks namely BPR, BK, and ECOBANK. All the selected banks operate in in Rwanda. Two namely BK and BPR are local, whereas ECOBANK has presence in 36 different countries.

Profile of BK

Bank of Kigali was established in 1966 to provide commercial financial services to individuals, small businesses and large corporations. The bank was partially owned by the government of Rwanda and the banque belgolaise each owning 50%. Later in 2007, the government through its privatization policy decided to sell its shares. Shares were sold to some other corporate entities like the social security fund of Rwanda and the national post office of Rwanda.
In 2011, there were plans for the government to divest more of its ownership in the bank by floating 25 percent shareholding on the Rwanda Stock Exchange (RSE).

On 21 June 2011, the Rwandan Capital Market Advisory Council approved plans for the bank to float 45 percent of its shares on the RSE and list its shares on the RSE. Trading in the shares of the bank started on 30 June 2011. In December 2012, regional media reports indicated that the bank was in the middle of an expansion into neighboring Uganda. In February 2013, the bank received regulatory approval to open an office in Kenya.

The BK motto of Bank of Kigali is financially transforming lives. The mission of Bank of Kigali is to be the leader in creating value for its stakeholders by providing the best financial services to businesses and individual customers, through motivated and professional staff. The vision of Bank of Kigali aspires to be the leading provider of most innovative financial solutions in the region.The values of Bank of Kigali are to be Customer focus, Integrity, Quality, Excellence.

Profile of BPR

BPR was founded in 1975 when the people of Nkamba, a village in the current Eastern Province, felt the need to have a savings and credit scheme to help them grow financially and achieve better livelihoods. Subsequently, other community based savings and credit schemes were established in other areas of Rwanda thus forming various autonomous "Banques Populaires." in 1986, as these autonomous savings and credit schemes grew bigger and stronger, an umbrella bringing them together was put in place, with its headquarters in Kigali, under the name "Union des Banques Populaires du Rwanda (UBPR). These entities were tied together as cooperatives mainly to serve their members.
In 2008, UBPR was transformed to become a commercial bank while retaining its cooperative roots. 65% of the shares were retained by the former cooperative

members, while 35% were acquired by a strategic partner, Rabobank, the latter having the main mission to help upgrade "BPR" into a fully-fledged retail bank.
The mission is to offer a full range of financial services in the urban and rural areas in a market driven and financially sustainable way, based on cooperative characteristics. Special attention was given to farmers, agribusiness enterprises, private individuals and micro as well as small and medium enterprises.

The vision is to be the leadings Bank in Rwanda. to realize this vision, BPR upholds values of accountability, openness, transparency and responsibility to all stakeholders. BPR is highly committed to delivering excellent services to esteemed customers. Integrity, team work and high level of professionalism are key characteristics of staff of BPR to help them contribute to the mission and vision of the bank. Services at BPR atlas Mara are customer focused. By the year 2018 BPR had 552,090 customers, and 94 branches across the country. BK had 275,000 customers and 76 branches.

Profile of ECOBANK

ECOBANK Rwanda is part of the Banks and Credit Unions Industry. ECOBANK is the leading Pan-African banking group, with a presence in 36 African countries, in Paris, London, Dubai and Beijing. Its vision is to build a world-class Pan-African bank and to contribute to integration of Africa. Back in 2007, ECOBANK arrived to Rwanda, absorbing the operation of a local bank that at that time was bankrupted. From that moment, the efforts were focused on turning around this bank, cleaning it up, retraining people and realigning the business' strategy.

Up to date, ECOBANK has a very strong position in the Rwandan market and a very active participation on the growth of this country. Through its two customer-centric business segments, Domestic Bank, Corporate and Investment Bank, ECOBANK provides a full range of retail, wholesale, investment and transactional banking services. With its Corporate and Investment Bank come financial solutions to global, regional and public corporates, financial institutions and international organizations; such as, Pan-African lending, trade services, cash management, internet banking and value-chain finance. It also provides treasury, corporate finance, investment banking and securities plus asset management services.

Through its Domestic Bank, ECOBANK Rwanda provides a full range of convenient, accessible, and reliable financial products and services to individuals, small businesses, local corporates and public sector organizations, using our extensive network of branches, ATMs and POS terminals which we gradually increase across Africa Currently, ECOBANK has three strategic priorities. Number one, providing world-class customer service, embracing technology to offer convenient, accessible and reliable banking services, number two, building shareholder value by taking a long-term strategic view and monetizing our unique presence in Middle Africa, number three, becoming an employer of choice though attracting, retaining and growing Africa's best talent.
Also, this bank believes it has a responsibility to be socially relevant to the communities that it serves, being strongly committed to sustainable development of the region and are a signatory of the Equator Principles, the UNEP Finance Initiative and the UN Global Compact.

ECOBANK offers all the required products in the sector and specializes in those with wider demand in the country. The first one would be its trade finance; as Rwanda is a country with lots of importations and also exports to sub-regions, ECOBANK has a strong presence with the 40% of the market ship.
The second sector, the financial institutions to have long term resources in order to search for capital and be able to finance the needs of the small industry that is starting to develop in Rwanda such as construction materials, tea and coffee sector…
Finally, the third sector the bank is working on is agro processing. Due to the huge potential for agro processing it is easy to invest in the transaction industry and ECOBANK is contributing to the development of this new area.

3.4 Population of the study

The study population is 16 commercial banks in Rwanda. According to BNR (2014) by march 2020, those licensed commercial banks were AB Bank Rwanda Plc, I&M Bank Rwanda Plc, Bank of Africa Plc, Bank of Kigali, KCB Bank Rwanda Plc, Ecobank Rwanda Plc, Urwego Bank Plc, Banque Populaire du Rwanda Plc, Equity Bank Plc, Development Bank of Rwanda Plc, Bank of Kigali Plc, Zigama CSS, NCBA Bank Rwanda Plc, Access Bank Rwanda Plc, Cogebanque Plc, and Guarantee Trust Bank Rwanda Plc.

3.5. Selection of the commercial banks

Three commercial banks BK, BPR and ECOBANK were selected and involved in this study. Selection of the banks was made purposively on the basis of how they have been providing housing loans in the past. For example, by 2014, BK ranked first in terms of provision of housing loans where the amount provided was 185,067,000,000frw, followed by ECOBANK with 66,041,000,000 and BPR with 40,068,000,000. Apart from this criteria, these banks are well established with many branches not only in the capital city of Kigali but also across the country.

3.6. Data collection

To collect data, the researcher used secondary sources of data given the nature of the study and data required. Raw data on nonperforming housing loans and financial performance was collected from the selected commercial banks. These sources included all financial reports accessed electronically from the Banks's websites, and hard reports accessed from the banks. Specifically, data on the main concepts of the study were retrieved mainly from the balance sheets and income statements of the individual banks for the period of the study.

Secondary sources of data were the most appropriate source since involving individual members was not necessary and would lead to biased and untruthful data. They took much time to search relevant information, to extensive reading of all documents to exhaust data collection. It was a good opportunity to collect truthful and bias-free data. Collection of data was systematically done in line with the study research questions and specific objectives. Using secondary sources of data was cost effective but was time demanding.

3.7Operational Definition of Terms

This section presents definition what the terms mean operationally in this study.

Definitions of dependent and independent variables under study are given as follows.

Non-performing loans (NPLs).

NPLs are the loans that are not paid by borrowers as per the loan repayment schedules. The loans do not generate interest and the principal amount for a period of ninety days. In this research, the nonperforming loans were measured first as the total non-performing housing loans, and as the ratio of nonperforming housing loans to NPLs.

Gross Non-Performing Housing Asset

In this study, gross non-performing housing asset (NPHA) refers to the amount of all housing loans that have not been repaid by the customers due to various reasons within a specified period of ninety

(90) days. Borrowers for that period have not been able to pay the principal loan and interest as per loan repayment schedules.

Thus, to measure this, the researcher had to get nonperforming housing loans for each commercial bank from reports for the entire period of the study 2015-2019.

Net Non-Performing Housing Asset

In this study, Net Non-Performing Housing Asset (NNPHA) refers to the amount that results after deducting provision for unpaid debts from gross nonperforming housing assets/loans. To measure net nonperforming housing asset, the researcher had to subtract provision for unpaid housing loans from total nonperforming housing loans for each commercial bank for the entire period of the study.

Return on assets (ROA)

In this study, return on asset (ROA) refers to how profitable a commercial bank is relative to its total asset. It shows how the banking institution is financially positioned, with less pressure to invest in risky projects. In this research, to measure return on asset, the researcher collected ROA values from various reports from the selected commercial banks for the period of the study that extends from 2015 to 2019.

Return On Equity (ROE)

In this study, return on equity (ROE) is measure of financial performance that is calculated by dividing net income by shareholders' equity. Thus in this study, to measure it the researcher got return on equity values from reports of the selected commercial banks for the entire period of the study.

Net Interest Margin (NIM)

Net Interest Margin (NIM) is a measurement of the difference between the interest income made by the commercial bank and the amount of interest that has to be paid to different lenders including depositors and other banking institutions in relation to their interest earning assets. It is similar to the gross margin for non-financial business organizations. It is expressed as a proportion of what the commercial banks generate on loans in a time period and other assets minus the interest owed and paid on borrower funds divided by the average amount of the assets on which it earned income in the same period.

It was thus measured by getting the values from the reports produced by each commercial bank for the entire period of the study 2015-2019.

3.8. Data processing

Data processing in this research was the transformation of the raw data from reports into meaningful information basing through the use of a statistical computer software. Raw data in the case of this study numeric data was transformed into descriptive tables on nonperforming loans and financial performance. The same data was also transformed into inferential tables to measure the relationship between the main variables under study.

3.9. Editing

Editing is the process of selecting and preparing writing, photography, visual, audible, and film media used to convey information. The editing process can involve correction, condensation, organization, and many other modifications performed with an intention of producing a correct, consistent, accurate, and complete work. Before actual analysis of data, the researcher took time to check if every data was well captured into the software, and mistakes were corrected.

3.10 Statistical analysis

After editing, raw data was entered in a computer for data processing. Data was entered into SPSS 21.0 version to make panel data set. Descriptive and quantitative techniques were used to analyze data to generate descriptive statistics on nonperforming housing loans (Gross nonperforming loans and net nonperforming housing loans) and financial performance in terms of (return on asset, return on equity and net interest margin).

The third specific objective in this study was determining if nonperforming loans influence financial performance in the selected commercial banks. To establish that linkage, panel data was subjected to simple regression analysis.

The following was the simple regression analysis model:

Multiple regression model: $A=b_0+b_1x$

We test if they are significantly different from zero

H_o= all $b_k=0$

H_1= At least $1b_k \neq 0$

For the null hypothesis (H_o), an assumption is made that there is no significant linear relationship between nonperforming housing loans and financial performance of the selected commercial banks in Rwanda if the multiple regression Probability Value is equal to zero.

The alternative hypothesis, assumes that there is a significant linear relationship between nonperforming housing loans and financial performance of the selected commercial banks in Rwanda if the multiple regression coefficient/Probability Value is different to zero.

3.11. Tabulation

Tabulation is a systematic and logical presentation of numeric data in rows and columns to facilitate comparison and statistical analysis. It facilitates the researcher to make comparison by bringing related information close to each other and helps in further statistical analysis and interpretation. In other words, the method of placing organized data into a tabular form is called as tabulation. It may be complex, double, or sample depending upon the nature of categorization.

3.12. Ethical considerations

Research ethics guided the researcher in the process of conducting the study. Ethical considerations help researchers to conduct their study professionally in such a way that help all people involved in research to participate actively and provide bias-free and reliable data. The researcher carried with him, the research recommendation letter that he obtains from the office of postgraduate. This recommendation letter introduced the researcher as a legalized researcher and it enabled him to obtain the secondary sources of data he was looking for. It allowed him to introduce himself, introduce the topic of his study, and requested the stakeholders to assist by providing various documents needed to collect data. He assured the respondents that their responses would be kept confidential and no damage would result from the data they are ready provide as it will be used for academic purpose only. During data analysis, the researcher makes sure that there is objectivity in recording, coding, and interpreting data.

CHAPTER 4: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Chapter four presents, interprets and discusses the results of the study. Findings are presented with respect to the study specific objectives. Therefore, the results presented here are organized in accordance with the study specific objectives. This study was guided by the following specific objectives: examine Gross Non-Performing Assets (GNPHA) of the selected commercial banks for the period of the study, examine Net Non-Performing Housing Assets (NNPHA) of the selected commercial banks for the period of the study, Determine the financial performance of the selected commercial banks for the period of the study, assess influence of non-performing housing loans on financial performance of BK, BPR and ECOBANK.

4.1 General information

The table below presents general information related to the study among the selected commercial banks for the period of the study. Specifically, this section covers the average total loan amount, the gross NPL and the net NPL rates, average housing loan amount, their proportion and average provision for unpaid housing loans.

Average housing loan amount, proportion

The table below presents findings of the study on the average housing loan amounts and proportion of total loan amount it represents.

Table 4.1: Average housing loan amount, proportion

Period	Average Total housing loan amount	Average Proportion of the total loan amount
2015	64331008323	37.7
2016	76487192300	34.8
2017	93521219107	37.9
2018	105202932302	37.7
2019	112218649597	34.86

Source: Secondary data

As it can be observed the average housing loan provided by the selected commercial banks has been increasing gradually. The average amount in 2015 was 64331008323 and increased to 112218649597 in 2019. However, the average proportion of the total loan amount has not gradually increased. It was 37.7 in 2015 and 34.86 in 2019. This shows that a greater percentage of the loans

is provided to finance housing projects in all the selected commercial banks. This tells that the percentage of loan provided to finance other sectors of economy have not been equally important. However, the fact that the proportion of housing loans for the selected banks has not been gradually increasing indicates that their loan amounts invested in other sectors of economy have been increasing.

The gradual increase of housing loans, is aligned with the development of towns and cities in Rwanda. This development requires huge investments in decent construction activities like construction of roads, hotels, recreation facilities, industries, residential houses, etc. obviously we can easily see the link between development of all economic sectors with an increase in demand for housing. That is why housing is the first sector with huge financing from loans by the selected commercial banks in Rwanda.

Average loan, GNPL, Net NPL

The table below presents information on the average total loan amounts, gross NPL rate and Net NPL rate. This is average of the three banks concerned in this study namely BPR, BK and ECOBANK.

Table 4.2: Average total loan amounts, Gross NPL and Net NPL rates

Period	Total loan amount	Gross NPL rate	Net NPL rate
2015	170419987333	10.76	6.2
2016	212320949345	13.57	7.5
2017	244917187509	8.8	3.36
2018	272531815814	6.68	2.75
2019	311112775632	5.42	2.3

Source: Secondary data

This table revealed that the loan amounts provided by the selected commercial banks has been gradually increasing. Average loan amount provided in 2015 was 170,419,987,333, which increased to 311,112,775,632 by the year 2019. The table further revealed that the gross non-performing loan has been gradually declining which is a good indication of reducing the financial shocks to the concerned commercial banks. The average gross nonperforming loans rate was 10.56 in 2015 and this declined to 5.42 in 2019. At the same time, the average rate net nonperforming loans also declined gradually from 6.2 in 2015 to 2.3 in 2019. This indicates that the financial health

of the selected commercial banks has been improving. This quite significant to a country like Rwanda with the financial system that is bank-centered. Efficiency and strength of the banking sector a major factor in promoting the business sector of Rwanda and ensuring macro-economic stability.

Average provision for unpaid housing loans

The table below presents information on average provision for unpaid housing loans among the selected commercial banks in Rwanda.

Table 4.3: Average provision for unpaid housing loans

Period	Average provision for unpaid housing loans
2015	1,131,756,919
2016	1,512,656,884
2017	1,851,792,337
2018	2,127,381,411
2019	2,079,633,145

Source: Secondary data

The table above reveals that average provision for unpaid housing loans has been gradually increasing. It was 1,131,756,919 and increased to 2,079,633,145 in 2019. The more commercial banks increase provision for unpaid loans, the more the financial institutions withstand shocks from nonperforming loans and other risks from the business environment. This helps to stabilize the Rwandan financial system which is bank-centered and stabilizes various sectors of economy. The increase of provision for unpaid housing loans could be an indication that financial performance of the commercial banks has also been increasing. It helps banks to continue lending operations to all customers which in turn contributes a lot to the development of individuals, organizations and the nation at large. In such a situation, defaulting borrowers will not adversely affect lending operations of the commercial banks. Borrowers will always have chance to access finance at reasonable cost rather than opting to lend from non-financial lenders whose lending terms and interest rates are very high.

4.2 Non-performing housing loans among BK, BPR and ECOBANK from 2015-2019

The first specific objective of this study was to examine the level of Non-Performing Housing Loans of the selected commercial banks for the period of the study. Raw data was collected on Non-Performing housing loan amounts for three commercial banks under study.

Average rate of gross nonperforming housing loans (NPHL) and net nonperforming housing loans (NNPHL).

The table below presents findings on the average rate of gross nonperforming housing loans and net nonperforming housing loans for the selected commercial banks in Rwanda.

Table 4.4: Average rate of GNPHL, and NNPHL

Period	Gross NPHL rate	Net NPHL rate
2015	5.53	2.3
2016	3.85	2.18
2017	5.3	2.13
2018	4.38	2.1
2019	4.36	2.1

As it can be observed from the table, the rate of the gross nonperforming housing loans has been reducing slowly from 5.53 in 2015 to 4.36 in 2019. Whereas the rate of net nonperforming loans has gradually and slowly reduced from 2.2 in 2015 to 2.1. This indicates that defaulting loans in the housing sector has been gradually declining. Considering the rate of net nonperforming housing loan, an assumption can be made that for the period of 2015-2019, the commercial banks were not shocked by nonperforming housing loans. Any serious challenges in lending could have resulted from lending to other sectors other than housing. Lending operations to housing sector could not be affected negatively.

As it is observed in this table, there is a difference between the rate of gross nonperforming housing loans and the rate of net nonperforming housing loans. The difference was 3.23 in 2015 and reduced to 2.26 in 2019. The reduction in the difference is a good indication that the commercial banks have increasingly been able to increase the capacity to resist to financial shocks from the non-performing loans.

Another important comparison to be made is comparing the gross nonperforming housing loans and the total gross nonperforming loans. There is a striking difference. For example, in 2015 the total gross nonperforming loan was 10.76 whereas the gross nonperforming housing loan was 5.53. in 2019, the total gross nonperforming loan was 5.42, whereas the gross nonperforming housing loan was 4.36. This means that there could be borrowers from other sectors of activity like small and medium businesses among others, whose low loan defaults might have contributed to the total gross nonperforming loans in the selected commercial banks.

Financial performance of the selected Commercial Banks

The second objective of this study was to analyze how the selected commercial banks performed for the period of the study. The selected measurements were return on asset (ROA), return on equity (ROE) and Net Interest Margin.

Return on asset helped to understand how profitable commercial banks were relative to their total asset. Return on equity helped to understand how commercial banks generate returns to shareholders, whereas net interest margin was used to understand the difference between interest income made by the commercial bank and the amount of interest that has been paid to different lenders.

Table 4.5: Average return on asset, return on equity and net interest margin

Period	Return On Asset (ROA)	Return On Equity (ROE)	Net Interest Margin
2015	1.5	9.7	6.6
2016	1.68	8	7
2017	1.96	8.5	6.24
2018	3.76	11.53	8
2019	4.47	11.53	9

Source: Secondary data

As it can be observed on this table, the average return on asset has not been high. It was 1.5 in 2015 and has gradually increased to 4.47 by the year 2019. This indicates that in general the capacity of the commercial banks to convert the money invested into net income has not been high especially for the first three years of the period of the study. This revealed that considering the average return on asset, for the three years 2015, 2016 and 2017 financial performance of the commercial banks

was low. Based on this, we observe that the capacity of the commercial banks to generate profits relative to the total asset seriously stagnated.

The average return on equity has gradually increased. Table 4 revealed that it was 9.7 and it increased to 11.53 in 2019. This is a good indication that gradually and considerably the commercial banks were able to generate returns to shareholders. This predisposes the banks to increasing shareholder equity because high returns on equity attract people to invest in the commercial banks. Furthermore, Muhammad, et. al (2020) revealed that increasing return on equity is an indicator that the management of the commercial bank is able to use equity financing to fund bank operations and growth. This means that the management of the commercial banks has been gradually efficient. That is why basing on what is observed in table 4, rising return on equity indicates good financial performance for the period of the study.

Table 4, also revealed that the average net interest margin for the selected commercial banks has been gradually increasing. The average net interest margin was 6.6 by the year 2015 and increased to 9 by the year 2019. This increase is an indicator of improvement in the financial performance of the concerned commercial banks.

As Ekanayake and Azeez (2015) believed positive net interest margin (NIM) in a commercial bank is an indication that the banks operate profitably, whereas a negative margin indicates inefficiency in investments. A positive and increasing NIM for these commercial banks indicates that the banks have been efficient. One this basis, the banks can be given credit that they made right investment decisions.

The Net Interest margin help managers know the profits the bank has made on investing activities as a proportion of total investing assets. Financial institutions in general use this profitability ratio to analyze the effectiveness of investment decisions made and track how their lending operations are profitable.

The influence of GNHPL and NNPHL on financial performance

The simple regression analysis was used to analyze the influence of nonperforming housing loans on the financial performance of the selected banks.

Nonperforming housing loans and return on equity

Table 6 below presents findings on the influence nonperforming loans and return on equity. The researcher used the following simple regression model: $A=b_0+b_1x$

Hypotheses were tested to see if the P values are significantly different from zero.

Ho= all $b_k=0$

H1= At least $1b_k \neq 0$

Table 4.6: Table of coefficients

Data was subjected to simple regression analysis, to test the level of relationship between nonperforming housing loans and return on equity.

		Un-standardized coefficients		Standardized coefficients		
	Model	B	Std Error	Beta	t	Sig
1	(Constant)	54.262	27.888		1.229	.254
	NNPHL rate	.743	.277	.634	2.322	.004

a. Dependent variable: Return on equity

As it can be observed from the table of coefficients table above, the Probability Value (0.004) is far less than the level of significance (0.05). This means that all coefficients can be equal to zero. Therefore, the P-Values fall in the rejection side of the normal distribution of values. A decision was taken to reject the null hypothesis and a conclusion made that there is a significant linear relationship between non-performing housing loans and return on equity in the selected commercial banks in Rwanda. This implies that the increase in non-performing housing loans lowers the return on equity and a decrease in it influences positively the increase of return on equity. Therefore the declining rate of non-performing housing loan is a determinant of return on equity in the selected commercial banks.

Table 4.7: Model Summary

Model	R	R square	Adjusted R square	Std error of the estimate
	.534[a]	.603	.328	7.050

Table 4.7 reveals that the squared correlation indicates a proportion of variance of 53.4% in the dependent variable that is accounted for by the predictor.

Nonperforming housing loans and net interest margin

Table 8below presents findings on the influence of nonperforming housing loans on net interest margin (NIM). The researcher used the following multiple regression model: $A=b_0+b_1x$. Hypotheses were tested to see if the P values are significantly different from zero.

Ho= all $b_k=0$

H1= At least $1b_k \neq 0$

Table 4.8: table of coefficients

Data was subjected to simple regression analysis, to test the level of relationship between nonperforming housing loans and net interest margin.

		Un-standardized coefficients		Standardized coefficients		
	Model	B	Std Error	Beta	t	Sig
1	(Constant)	67.192	32.532		2.345	.197
	NNPHL rate	.981	.320	.792	4.326	.006

a. Dependent variable: Net interest margin

As it is observed from this table, the P-Value calculated is 0,006 which is far less than the level of significance of 0.05. This means that all coefficients can be equal to zero. Therefore, the P-Values fall in the rejection side of the normal distribution of values. A decision was taken to reject the null hypothesis and a conclusion made that there is a significant linear relationship between non-

performing housing loans and net interest margin in the selected commercial banks in Rwanda. This implies that the increase in non-performing housing loans lowers the net interest margin and a decrease in nonperforming housing loan influences positively and leads to the increase of net interest margin. Therefore, the declining rate of non-performing housing loan is a very important determinant of return on equity in the selected commercial banks.

4.9. Model summary

Model	R	R square	Adjusted R square	Std error of the estimate
	.629[a]	.821	.429	7.050

Table 4.9 reveals that the squared correlation indicates a proportion of variance of 62.9% in the dependent variable that is accounted for by the predictor.

Nonperforming housing loans and return on asset

Table 9 below presents findings on the influence nonperforming loans and return on asset. The researcher used the following multiple regression model: $A=b_0+b_1x$

Hypotheses were tested to see if the P values are significantly different from zero.

Multiple regression model: $A=b_0+b_1xGNPHL+b_2xNNPHL$

We test if they are significantly different from zero

Ho= all $b_k=0$

H1= At least $1b_k \neq 0$

Table 4.10: Table of coefficients

Data was subjected to simple regression analysis, to test the level of relationship between nonperforming housing loans and return on asset.

		Un-standardized coefficients		Standardized coefficients		
	Model	B	Std Error	Beta	t	Sig
1	(Constant)	71.634	40.241		1.683	.186
	NNPHL rate	.897	.472	.913	3.142	.014

a. Dependent variable: Return on asset

As it is observed from this table, the P-Value calculated is 0.014 which is far less than the level of significance of 0.05. This means that all coefficients can be equal to zero. Therefore, the P-Values fall in the rejection side of the normal distribution of values. A decision was taken to reject the null hypothesis and a conclusion made that there is a significant linear relationship between non-performing housing loans and return on asset in the selected commercial banks in Rwanda. This implies that the increase in non-performing housing loans lowers return on asset and a decrease in nonperforming housing loan influences positively and leads to the increase of return on asset. Therefore, the declining rate of non-performing housing loan is a very important determinant of return on equity in the selected commercial banks.

4.10 Model summary

Model	R	R square	Adjusted R square	Std error of the estimate
	.79[a]	.721	.651	8.122

Table 4.10 reveals that the squared correlation indicates a proportion of variance of 79% in the dependent variable that is accounted for by the predictor.

CHAPTER 5: MAJOR FINDINGS, CONCLUSION AND RECOMMENDATIONS

This chapter presents summary of findings, conclusions drawn based on key findings, recommendations to the relevant organizations and suggestions for further research. The summary of key findings is always made and presented on basis of the specific objectives that guided the study. The conclusion is made based on the general objective of the study and the recommendations made based on key findings of the study. Suggestions for further studies are also made based on the knowledge gaps that were identified and that this study could not address. They are suggested to future researchers so that they can supplement and contribute to knowledge through their future research undertakings.

5.1 Summary of findings

The first specific objective was to examine the level of Non-Performing Housing Loans of the selected banks for the period of the study. It was found out that the average rate of the gross nonperforming housing loans has been slowly reducing from 5.53 in 2015 to 4.36 in 2019. Whereas the average rate of net nonperforming loans has gradually and slightly reduced from 2.2 in 2015 to 2.1. This gradual decrease indicates that defaulting loans in the housing sector has been gradually declining. Considering the rate of net nonperforming housing loan, an assumption could be made that for the period of 2015-2019, the commercial banks were not shocked by nonperforming housing loans given an insignificant average rate of net nonperforming housing loans. Any serious challenges in lending in the selected commercial banks could have resulted from lending to other sectors other than housing. Lending operations to housing sector could not bear a negative effect.
A notable difference between the rate of gross nonperforming housing loans and the rate of net nonperforming housing loans. The difference was 3.23 in 2015 and reduced to 2.26 in 2019. The reduction in the difference is a good indication that the commercial banks have increasingly been able to increase the capacity to resist to financial shocks from the non-performing loans.

The second objective of the study was to examine the financial performance of the selected commercial banks for the period of the study. It was found out that average return on asset has not been high for the first three years. In 2015 It was 1.5 and gradually increased to 4.47 by the year

2019. This indicates that in general the capacity of the commercial banks to convert the money invested into net income has not been high especially for the first three years of the period of the study. This revealed that considering the average return on asset, for the three years 2015, 2016 and 2017 financial performance of the commercial banks was low. Based on this, we observe that the capacity of the commercial banks to generate profits relative to the total asset somewhat stagnated. The average return on equity has gradually increased. It was 9.7 in 2015 and increased to 11.53 by the year 2019. This is a good indication that gradually and considerably the commercial banks were able to generate returns to shareholders. This predisposes the banks to increasing shareholder equity because high returns on equity attract more people to invest in the commercial banks. Rising return on equity indicates good financial performance for the period of the study.

The study revealed that the average net interest margin for the selected commercial banks has been gradually increasing. The average net interest margin was 6.6 by the year 2015 and increased to 9 by the year 2019. This increase is an indicator of improvement in the financial performance of the concerned commercial banks.

The third objective of this study was to assess the influence of non-performing housing loans on financial performance of BK, BPR and ECOBANK. Coefficients tables revealed P. values (0.004, 0.006, 0.014) for return on equity and net interest margin and return on asset were far less than the level of significance 0.05. Therefore, a decision was made to reject the null hypothesis and a conclusion was made that that there was a liner relationship between nonperforming housing loans and return on equity and net interest margin. This means that in the selected commercial banks, the declining nonperforming housing loans had a positive influence on return on equity, net interest margin and return on asset. This implies that if nonperforming housing loans continues to decline, the return on equity, net interest margin and return on asset will also increase.

The findings of the study are in agreement with what Shahidal (2016) found out in his study conducted in the southern Asian countries. The decreasing nonperforming loans positively influenced the net interest margin of the commercial banks. This helped the banking institutions to increase their level of operating efficiency and profitability.

5.2 Conclusion

Based on research findings, it was found out that the rate of nonperforming housing loans has been declining and financial performing gradually increasing. Return on equity, return on asset and net

interest margin have been considerably increasing, whereas return on asset increased insignificantly and somewhat stagnated for the first three years. Simple regression analysis revealed that there was a linear relationship between nonperforming housing loans and return on equity, return on asset and net interest margin. On that basis a conclusion was drawn that declining nonperforming housing loans for the period of 2015 to 2019 influenced positively the increase in return on equity, return on asset and in net interest margin.

5.3 Recommendations

Based on the findings of the study, the following recommendations were made and addressed to the relevant authorities:

Commercial banks: BPR, BK and ECOBANK

BPR, BK and ECOBANK should improve management of loan portfolio especially focus on sectors with a high number of defaulting borrowers to reduce the total rate of nonperforming loans. Sectors that include small and medium businesses, and increase gradually provision for nonperforming loans in general.

This recommendation is made because the study revealed that there has been tangible improvement in the performance of non-performing housing loans. However, BK (2019) reported that that the SMEs sector has a high rate of NPL above 8%. This means that reducing NPLs in other sectors will help the commercial banks to maximize their potential for attaining increasing profitability and improved financial performance.

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Based on the findings of this study, the BNR should identify sectors of economy that are riskier than others. This will help commercial banks to be alert and carefully analyze suitability of borrowers before approving and disbursing the loans. The central bank should strengthen policies and regulations on provision of loans to high risk sectors.

The recommendation is made on the basis that as the central bank oversees the whole financial sector, it should communicate the findings of their studies on the high risky sectors of economy and provide specific guidelines that can help commercial banks in lending operations to specific sectors.

5.4 Suggestions for Further Studies

Based on the findings, the following are suggested topics for further research:

Factors affecting Non-Performing Housing Loans in Commercial Banks in Rwanda

Comparative study of economic sectors that affect nonperforming loans in selected commercial banks in Rwanda.

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