

**AN INVESTIGATION INTO THE EFFECT OF NON-PERFORMING  
LOANS ON THE PROFITABILITY OF COMMERCIAL BANKS IN  
NAMIBIA**

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## **ABSTRACT**

This study investigates the effect of non-performing loans on the profitability of major commercial banks in Namibia for the period 2015 to 2020. In order to achieve this objective, pooled annual data for six commercial banks obtained from the banks' financial statements was used to estimate panel regression models, fixed and random effects models. The results indicate that bank size and loan to assets ratio explains about 14% and 10% of the variation in a bank's profitability as measured by return on assets. The null hypothesis of no significant relationship between NPL and ROA was not rejected, meaning that non-performing loans have no effect on the profitability of commercial banks in Namibia. This implies that there is a need for commercial banks to transform more deposits into loans in order for them to increase interest-bearing assets. The study findings stress the need for commercial banks to transform more deposits into loans in order to increase interest-bearing assets. The positive effect of bank size on profitability suggests possible scale efficiency as a result of the expansion in bank size. The study further recommends that, banks must continue to closely monitor inflation to stabilise the economy. Commercial banks must show resilience to learn from recent experiences, demonstrate courage to tackle challenges and exploit opportunities embedded in tribulations experienced. The study further recommended that, the banks should further be committed to deliver monetary, price and financial stability.

**Key words:** Return on Assets, Non-Performing-Loans, Commercial Banks and Fixed Effect model.

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## ACRONYMS

<b>BoN</b>	-	Bank of Namibia
<b>CAR</b>	-	Capital Adequacy Ratio
<b>DEAM</b>	-	Data Envelopment Analysis Method
<b>DMU</b>	-	Decision Making Unit
<b>GRN</b>	-	Government of the Republic of Namibia
<b>GPM</b>	-	Gross Profit Margin
<b>LAR</b>	-	Loan to Asset Ratio
<b>NIM</b>	-	Net Interest Margin
<b>NPAs</b>	-	Non-Performing Assets
<b>NPLs</b>	-	Non-Performing Loans
<b>ROA</b>	-	Return on Assets
<b>ROE</b>	-	Return on Equity
<b>USA</b>	-	United States of America
<b>CAR</b>	-	Capital Adequacy Ratio
<b>NPLR</b>	-	Non-Performing Loans Ratio
<b>MQR</b>	-	Management Quality Ratio
<b>CDR</b>	-	Credit to Deposit Ratio
<b>RS</b>	-	Risk Sensitivity
<b>NSX</b>	-	Namibia Stock Exchange

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I dedicate this study to my family who always assisted me and gave me courage. I would like to also dedicate this to my friends who had faith in me, supported and helped me along the way. Also, to my lower primary teachers, for having played a role in my upbringing in terms of disciplining me and teaching me how to read and write. To my high school teachers, it's because of their constant encouragement and motivation that I progressed this far in the sphere of education and life overall. I equally dedicate this thesis to my employer, specifically my supervisor for always understanding and according to me time to work on this project. This thesis is also dedicated to the University of Namibia's academic staff and the non - academic staff, the former, for having inspired my mind and thus helping me shape my future and the latter for the supporting function performed to allow me to navigate smoothly during and after my academic years on campus. Finally, I dedicate this thesis to the Lord Almighty, Jesus Christ, for His forever unfading and unconditional love, Halleluiah!

## **DECLARATIONS**

I, Eliphas Hadibo Mwaetako, hereby declares that this study is a true reflection of my own research, and that this work or part thereof has not been submitted for a degree to any other institution of higher education.

No part of this thesis may be reproduced, stored in any retrieval system, or transmitted in any form, or by any means without the prior permission of the author, or the University of Namibia on my behalf.

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A handwritten signature in black ink, appearing to read 'E.H.M.', with a long horizontal stroke extending to the right.

**17/04/2023**

**Eliphas Hadibo Mwaetako**

**Date**

## **CHAPTER ONE: INTRODUCTION**

### **1.1 BACKGROUND OF THE STUDY**

Commercial banks all over the world face several risks due to non-performing loans (Nyarko-Baasi, 2018). According to Fofack (2015) the banking sector in Namibia is making significant losses due to non-performing loans in their books. Revenue generated from the loan book is a major source of income to the financial institutions (Fofack, 2015). The likelihood of commercial banks making losses due to loan default by debtors has been exacerbated by the COVID-19 pandemic and the resilient Coronavirus (Andrew, 2020). This clearly has a negative effect on the intermediary role of commercial banks towards the growth and development of the economy (Andrew, 2020). The rate at which these institutions give credit to businesses and entrepreneurs alike is critical to the impetus for industrial activities, economic growth and development (Fofack, 2015).

In its annual report, the (Bank of Namibia, 2019) states that the non-performing loan ratio of commercial banks increased from 3.6% in 2018 to 4.8 % in 2019. The deterioration was largely because of the worsening of Non-Performing Loans (NPLs) in various loan categories such as mortgages, personal loans, and credit cards, just to mention but a few. Non-performing loans are the loans that are commonly described as loans in areas for at least 90 days (Guy, 2011). The Non-performing ratio relates to the measurement of bank's credit risk and the quality of outstanding loans. A high ratio means the bank bears a greater risk of loss if it fails to recover the owed amounts, while a low ratio means that the outstanding loans pose a low risk to the bank (Fofack, 2015).

Michael *et al.* (2016) emphasised that NPLs have a direct impact on the operational effects which turns-out to affect profitability, liquidity and solvency of the bank. In an exploratory study in the Namibian commercial banking sector by Kithinji (2011) it was concluded that there is a significant relationship between profits, amount of credit and the level of non-performing loans. In the same vein, Macharia and Pagon (2005-2015) claim that there is a relationship between the level of non-performing loans and the financial performance of commercial banks. However, conclusive studies were not carried out, hence the need to further investigate to empirically ascertain the effects of non-performing loans on the profitability of commercial banks in Namibia. This study will further look at the disaggregation of NPLs per bank in the Namibian commercial banking sector (Lera and Rao, 2016).

The Bankers' Association of Namibia (BAN, 2020) indicates that non-performing loans had a direct impact on the profitability of commercial banks, owing to the global financial crises and the COVID-19 pandemic. Commercial banks in Namibia are currently affected by non-performing loans and this is a significant challenge for the foreseeable future (BoN, 2020). Frantic efforts to reduce non-performing loans have been done, however, the non-performing loans are continuously growing. There is however, a need to carry out this study to ensure that the non-performing loans are controlled to enhance the profitability of the commercial banks in Namibia.

## **1.2 PROBLEM STATEMENT**

Commercial banks today are making huge losses due to NPLs in their books (Nyarko-Baasi, 2018). This is because industries have largely been driven by credit facilities from commercial banks the world over (Hamishu, 2011). According to the Bankers'

Association of Namibia (BAN, 2020) non-performing loans have had a direct impact on the profitability of commercial banks, owing to the global financial crises and the COVID-19 pandemic. Commercial banks in Namibia are currently riddled with non-performing loans and this is a significant challenge for the foreseeable future (BoN, 2020).

Despite actions that have been taken to reduce non-performing loans, which include among others, the licensing of Credit Reference Bureaus; non-performing loans have continued to grow (BAN, 2020). To exacerbate the situation, commercial banks have recently reported both increases in non-performing loans and a decline in profits for the period ending 30 June 2020. Consequently, non-performing loans have maintained an increasing trend in the commercial banking sector (BoN, 2020). The ratio of non-performing loans to gross loans increased from 4.7 percent in December 2018 to 5.9 percent in December 2019 (BoN, 2020). According to the BAN (2020) the pre-tax profit for the sector declined by 16.6 percent from N\$ 125.8 billion in December 2018 to N\$107.9 billion in December 2019.

Empirical research confirms that most banking failures have been caused by non-performing loans (Brownridge, 2021). Similarly, Macharia (2012) concurs. In the same vein, Michael *et al.* (2006) postulate that non-performing assets in a loan portfolio affect operational efficiency, which in turn affects profitability, liquidity and the solvency position of commercial banks. Further studies indicate that NPLs affect profitability (Berger *et al.*, 2010).

Therefore, the aim of this study was to investigate the effect of non-performing loans on the profitability of commercial banks in Namibia. This could possibly enhance the profitability of commercial banks and provide intervention strategies to monitor and reduce NPLs. This would, in turn, significantly contribute to a long-term sustainable financial system and consequently improve the economic conditions via a developmental and infrastructural investment drive, which would in turn, result in full employment, the multiplier effect and other related downstream activities.

### **1.3 RESEARCH OBJECTIVES**

#### **1.3.1 Main Objective**

To determine the effects of non-performing loans on the profitability of commercial banks

#### **1.3.2 Specific objectives**

- i. To identify the causes of the non-performing loans in commercial banks in Namibia
- ii. To examine the effect of non-performing loans on profitability of commercial banks in Namibia.

#### **1.3.3 Hypotheses**

The hypotheses of the study are:

- $H_0$ : Non-performing loans have no effect on profitability of commercial banks in Namibia.
- $H_1$ : Non-performing loans have an effect on profitability of commercial

#### **1.4 SIGNIFICANCE OF THE STUDY**

The findings of the study are of interest to commercial banks as they will get to know effects of non-performing loans on profitability and encourage them to take necessary measures to control occurrences of non-performing loans in the current economic conditions. The Bank of Namibia could employ the new findings of this research in the establishment of guidelines that help in management of non-performing loans in the commercial banking sector in Namibia, whilst protecting the interests of the public and ensuring the health of the economy. Finally, this study will be useful to future researchers and provide a basis for further studies based on the current economic conditions.

#### **1.5 LIMITATIONS OF THE STUDY**

Most of the respondents had a feeling that financial information must not be given to third parties. This limitation was overcome by the fact that the researcher is a bank employee and has been in the commercial banking sector in Namibia for the past 8 years. A letter was sent to all senior executives of commercial banks for them to accord the support towards the study to help in obtaining supplementary information.

#### **1.6 DELIMITATION OF THE STUDY**

The study focused on commercial banks and specifically dealt with the effects of non-performing loans on the profitability of commercial banks. The study excluded all other financial institutions such as pension funds, insurance, investment houses, unit trusts, just to mention, but a few.

## **1.7 SUMMARY**

The study focused on non-performing loans in commercial banks in Namibia. It has been observed from the literature that the banking sector in Namibia is making significant losses due to non-performing loans in their books. Andrew (2020) claims that revenue generated from the loan book was a major source of income to commercial banks all over the world. The likelihood of commercial banks making losses due to loan default by debtors has been exacerbated by the COVID-19 pandemic and the resilient Coronavirus. This clearly has a negative knock-on effect on the intermediary role of commercial banks towards the growth and development of the economy. The next chapter will discuss the relevant literature upon which the study was anchored.

## **1.7 FORMAT OF THE STUDY**

**Chapter One** – covered the introduction and background of the study. This included the problem statement, the research objectives, the hypotheses, the significance, the limitations, and delimitation of the study.

**Chapter Two** –the provides the literature review and empirical studies upon which the study was anchored. The study reviewed research findings from recent and previous studies on the same thematic area, with a specific focus on grey areas previously identified as important in shaping the improvement on NPLs.

**Chapter Three** - presents the methodology used in this study. The study design, research setting, study population and sampling are described. Research procedures, data collection tools and measures to ensure trustworthiness are discussed in this chapter.



**Chapter 4**—lay out the data presentation and analysis. This study used various methods and techniques of data presentation such as graphs, bar charts, histograms, pie-charts and line-graphs to aid the analysis and presentation thereof.

**Chapter Five** - is dedicated to discussing the findings, before drawing the conclusions and recommendations made from the study.

## **CHAPTER TWO**

### **LITERATURE REVIEW AND THEORETICAL FRAMEWORK**

#### **2.1 INTRODUCTION**

This chapter reviews key theories linked to non-performing loans and various studies that are relevant to non-Performing Loans and profitability of Banks. The review and examined key areas covering information asymmetry theory, non-performing loans (NPLs) and the factors influencing return on assets (ROA) and NPLs.

#### **2.2 COMMERCIAL BANKS IN NAMIBIA**

The term commercial banks refer to all banking corporations that are licensed to accept deposits, lend loans and do other functions such as provision of safe deposit lockers, safe custody services, selling mutual fund, insurance products and gold coins (Bank of Namibia, 2018). This study will focus on commercial banks in Namibia, namely: Bank Bic Limited, Bank Windhoek Limited, First National Bank Limited, Letshego Bank Limited, Nedbank Namibia Limited and Standard Bank Limited. The central bank, which is the regulator and supervisory authority of commercial banks, is officially known as the Bank of Namibia (BoN).

Commercial banks play a crucial role in the economy as they play the role of mediator between borrowers and savers (Basel Committee on Banking Supervision , 2017). Furthermore, their role is to mobilise financial resources and make them available to businesses and investors through such instruments as loans and treasury bills (Chimukono *et al.*, 2016). The success of commercial banks is based on their assets

value and profits thereof, viz-a-vis the size and performance of their loan books in each financial year (Fofack, 2015). Subsequently, loans are a major generator of banks' operating profit. Hence, they expose commercial banks to the greatest level of strategic risk if loans do not perform well for the period under review, through defaulting borrowers (Amuakwa-Mensah and Boakye-Adjei, 2014).

The Namibian banking industry is characterised by an oligopolistic market structure in which a few institutions dominate the industry (Ikhide, 2018). Commercial banks in Namibia operate under the Banks Institutions Act 2 of 1998, which aims to consolidate and amend the laws relative to banking institutions. The Act aims to provide authorisation of a person to conduct business as a banking institution and to control, supervise and regulate banking institution. Furthermore, the act also aims to make provision for the management of banking institutions and make provision for matters concerning banking institutions in Namibia (Bank of Namibia, 2020).

According to the Bank of Namibia (BoN, 2020) the Namibian banking sector consists of 6 commercial banks, licence to provide banking and financial services. The total assets of all commercial banks put together are valued at N\$401 billion. Although the main purpose of Agri-bank is not entirely profit-oriented, since it is a parastatal, basically aiding farmers and helping the government in achieving its developmental objectives, all other banks are solely run with the motive of profit-making.

Commercial banks are faced with a challenge of reducing NPLs because they have an adverse effect on profitability. According to Namibia Financial Institutions Supervisory Authority (NAMFISA, 2020) non-performing loans have continued to

rise. With attempt to reduce the growth of NPLs, private credit reference bureaus have been licensed. Nevertheless, this has not led to reductions in non-performing loans as expected (Bank of Namibia, 2020). NPLs of commercial banks have opportunity cost, in that the non-interest earning loans could have been invested elsewhere, to earn returns and increase profitability. There are also costs associated with the attempts to recover NPLs and the costs affect the profitability of commercial banks.

## **2.3 THEORETICAL LITERATURE**

### **2.3.1 Information Asymmetry Theory**

The theory to be considered here is information asymmetry, initially propounded by George Akerlof (1970, p. 5) which states that, “... *the good cars may be driven out of the market by the lemons. It is quite possible to have the bad driving out the not-so-bad, driving out the medium, driving out the not-so-good, driving out the good, in such a sequence of events. But in a more continuous case with different grades of goods, worse pathologies can exist.*” Akerlof (1970) posits that the use of linear utility allows a focus on the effects of asymmetry of information. Therefore, the lemons model by Akerlof (1970) can be used as the premise for information asymmetry theory to denote the cost of non-performing loans.

In a market where goods are sold honestly or dishonestly, “... *quality may be represented or can be misrepresented.*” (Akerlof, 1970, p. 7). Traders in the fray who flood the market with inferior goods tend to drive the market out of existence. The case of automobile “*lemons,*” clearly articulate and illustrate the cost dishonesty dealings. The presence of people who wish to pawn bad wares as good wares, tends to drive out the legitimate business. Akerlof (1970) argues that dishonesty is a serious problem in

developing countries. It delineates the nature and cost of external economies involved and this clearly has an impact on NPLs. This is because credits in developing countries often strongly reflect the operation of the “*Lemons Principle*”.

The asymmetry information theory has been used in this study. It describes the problem in financial markets and implies that the borrower has much more information about their financial position than the lender (Auronen, 2013). Stiglitz (2020) claims that information asymmetry is a scenario where one party has more and better information than the other party when making business decisions and transactions. It is a common phenomenon generally opposed to perfect information. This results in an imbalance of power in transactions, and usually, the transactions may end-up an awkward situation, thereby resulting in NPLs.

In the banking industry, information asymmetry occurs because the borrowers have full knowledge of their financial situation, to which the banks may not be privy (Auronen, 2013). Thus, symmetrical information is critical for sound borrowing decision-making by commercial banks. Information asymmetry in borrowings may lead non-performing loans, and hence, this can lead to market failure due to huge loan books that are non-committal and simultaneously non-performing.

Information asymmetry is critical in managing banks’ loan books. This is because loans are sensitive to the challenges of information asymmetry (Stiglitz, 2020). Asymmetrical information may result in adverse selection, incomplete markets and non-performing loans (Auronen, 2013). This can lead to banking failures. Quite often, this is because one party to a banking borrowing transaction have greater material information and knowledge than the other. The phenomenon is also commonly

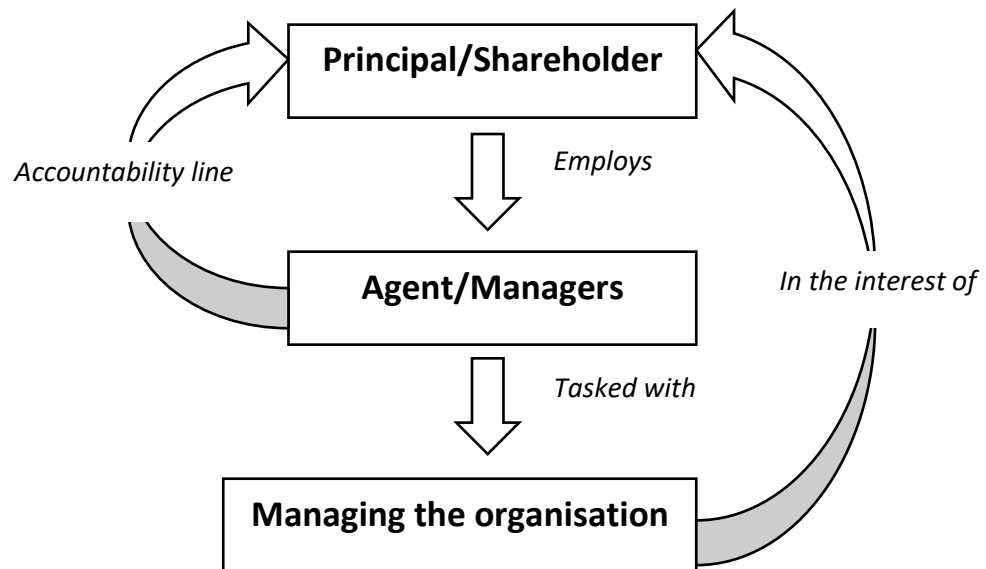
referred to as information failure because it involves deceptive information sharing which may result in information disequilibrium and unfair conduct during borrowing transactions by commercial banking clients.

In another study by Richards (2011) information asymmetry refers to a state where business owners or managers know more about the forecasts for and risks facing their business than do lenders (Price Water House Coopers, 2002). Asymmetric information is that market transaction on the two sides to deal with the content of information in terms of quantity and quality that are not equal (Vatansever and Hepsen, 2013).

### **2.3.2 Agency Theory**

Agency theory is a management and economic model that attempts to explain relationships and self-interest in business organisations. COSO (2015) define agency theory as the relationship between the shareholders of company and the agents, particularly the chief executive officer and senior executives. According to Ram., Charan., Dennis and Useem (2013) senior managers are referred to as agents because they are employed for their expertise and knowledge to champion the success, growth, profitability and long-term sustainability of the entity. Thus, top management is hired by the principals so as to drive corporate strategy, and hence, propel the organisation to phenomenal success. Once the corporate strategy is in place, then it is the work of senior managers to implement the strategic plan (Larcker and Tayan, 2015). The principal expects the senior managers to make prudent decisions, in the best interest of the firm. Therefore, the management team is fully empowered and authorised to use their expertise and knowledge to the best of their abilities to come up with practical strategies and solutions in the best interest of the organisation (Warwick and Jeffrey,

2013). Managers have full decision powers to innovate, in their use of company resources and champion the long-term sustainability of the organisation. **Figure 2.1** below illustrate the relationship dynamics of the agents' theory:



**Figure 2.1 Principal-Agent Relationship Dynamics**

*Source: Zogning (2020)*

**Figure 2.1** presents the agency theory in diagrammatic form. That relationship is the one between shareholders and company executives (COSO, 2015). Agency theory assumes that both the principal and the agent are motivated by self-interest.

**Principal** – as shown in Figure 2.1 above, the principal employs the agent to perform work on their behalf. Principals rely on agents to execute certain functions and transactions, particularly financial and managerial, resulting in a difference in agreement on priorities and methods (Zogning, 2020). The difference in priorities and interests between agents and principals is known as the principal-agent problem.

**Agent** – the agent uses the resources of a principal to manage the business and assets of the principals (COSO, 2015). In this case, the agent is the decision-maker, but incurs

little or no risk. If a risk becomes a reality, all losses will be borne by the principals. The work of the agent is to carefully and successfully manage the entity, in the best interest of the principals. In performing his functions, the agent must be held accountable to the principals.

In the fiduciary relationship of the principal and the agent, the agent is not expected to act in self-interest, but to always act in the best and sole interest of the principal. Meanwhile, the agent may take chances and manipulate key information for own advantage, to the detriment of the shareholder. More often, agents are able to conceal information that the principal can possibly use to their disadvantage (Warwick and Jeffrey, 2013).

### **2.3.3 Credit Worthiness and Asymmetry Theory**

Pagaon and Jappelli (2000) indicated that sharing of client's credit and credit worthiness information among banks is vital in improving the banks information on credit applicants. Relying on credit bureau alone is insufficient to get information on the borrower's credit worthiness. The asymmetry theory implies that it is difficult to differentiate between good and bad borrowers. Hence, information sharing among the banks may be useful.

Bank loans are regarded as risk assets. They are regarded as such because the monies advanced as loans by the banks belong to depositors and the risk arises in the sense that in case of massive defaults, depositors' monies may not be available on demand. A key feature of commercial banking is lending monies to borrowers at an interest. Lending by nature is high risk business (Stiglitz, 2020). Banking, and indeed lending may therefore, appropriately be regarded as high-risk business.



Risk arises because we cannot anticipate the existence of possible future events with certainty, and consequently, cannot make any correct prediction about the cash flow sequence (Pandy, 2006). There is jeopardy associated with life itself as well as in business. Despite the important role played by credit in the economy, it is associated with a catalogue of risks. According to (Kithinji, 2011) credit risk is an assumed risk that a borrower will not pay back the lender as agreed. The various types of credit risks comprise management risk, geographical risk, business risk, financial risk and industrial risk. The probable occurrence of partial or total default requires a thorough risk assessment prior to granting loans. Field (2011) the human condition is that of living with risk. The success or failure of banks, therefore, lies with management of risks and the ability of banks to set loans and deliver such value as would mitigate risks of default.

#### **2.3.4 Credit and Asymmetry Theory**

Bench (2011) posits that the scope of lending policies should include, but not limited to the following: who receive the credit, who grants it and how, the pricing of the credit, the amount of credit and organisational structure for its distribution. Other issues like the kind of credit and under the conditions upon which credit is granted also come into this preview of credit policymaking. The assertions of Bench seek to specify the scope of credit policy. However, this position could be stretched further by pointing out the fact that credit policy influences and affects the administration and management of credits.

However, a competent a manager is in his lending practices, bad debt will still arise (Etloite, 1989). It goes without saying, therefore, that the advancement and the repayment of a loan will become doubtful from time to time, and will eventually, affect profitability. Field (2011) postulated that bad debts pass through doubtful stage prior to a real loss of money occurring. Furthermore, there are so many reasons why lending becomes unsatisfactory and problematic. These reasons include, but are not limited to the following: (a) Customers not being able to manage their business efficiently, (b) A principal member of the company dying, (c) A falling demand for goods and/or services, (d) Excessive drawing by the proprietors of the business, (e) Failure to live within their means, and; (f) Climate change working against the business

### **2.3.5 Bank Deposits and Asymmetry Theory**

It is mostly acknowledged and known that commercial banks accept deposits and use those funds to provide loans to other customers or invest in other assets with expectancy of yielding higher returns (Field, 2011). Gezu (2014) claims that bank deposits by customers are the main source of bank loans. This explains the existing positive relationship between customer's deposits and commercial banks loan books. It is, therefore, argued that commercial banks' activities are twofold: Primarily, making profit and secondly, providing credit. In offering credit, a loan portfolio is moulded into an asset on the lender's portfolio. On the other hand, the recipient's portfolio is moulded into a liability, which is simply a debt. Like any other debt instruments, a loan involves a re-distribution of financial assets over a period.

The theoretical context of non-performing loans recognise that bank specific determinants do affect commercial banks' loan books. Galletta (2012) identified the following bank specific determinants namely: poor risk assessment, high interest rates,

rapid loan growth, credit orientation, bank size, cost efficiency, lenient credit terms, ownership structure, poor loan monitoring, poor risk assessment and lack of strict admittance-exit policies. Galletta (2012) further identified the following bank specific factors: operating efficiency, bank size, interest margin, rapid loan growth, policies on borrower admittance, credit terms, credit orientation, risk assessment and monitoring as the most significant in explaining non-performing assets. Richard (2011) showed that information sharing lessens opposing selection by improving banks information on credit applicants (Aurone, 2013).

### **2.3.6 Good and Bad Borrowers**

The theory of asymmetric information tells us that it may be difficult to distinguish good from bad borrowers (Field, 2011). Many a times, this may lead into adverse selection and moral hazard problems. Furthermore, the theory clarifies that in the market, the party that possesses more information on a specific item to be transacted can negotiate optimal terms for the transaction than the other party (Aurone, 2013). The party that knows less about the same specific item to be transacted is, therefore, in a position of making an awful decision. The theory of asymmetric information state that it may be difficult to differentiate between good and bad borrowers (Ibid). The problem of asymmetric information arise a result of inadequate information owned by the lender, and to a certain extent, complete information being possessed by the borrower about the transaction (Richard, 2011). Bank managers may know more about effects of non-performing loans on profitability of commercial banks than other stakeholders.

### **2.3.7 Moral Hazard**

The moral hazard hypothesis was first discussed by Keeton (1987) who argued that banks with relatively low capital respond to moral hazard incentives by growing the riskiness of their loan portfolio, which in turn results in higher non-performing loans on average in the future. The concept of moral hazard refers to a situation in which one party decides how much to take a risk by taking into deliberation that someone else will bear the cost when if things go wrong (Hamishu, 2011). The theory postulates that the problem of adverse selection may result from information asymmetric between banks customer and the bank which makes it almost impossible to distinguish bad from good perspective borrowers (Richard, 2011).

Michael *et al.*, (2006) further state that the moral hazard of too-big-to-fail banks represents another channel relating bank-specific features with non-performing loans. Moreover, a policy concern is that too-big-to-fail banks may opt for undertaking even extreme risk since market discipline is not imposed by its creditors who expect government protection in case of a bank's failure. Accordingly, large banks may compromise and increase their leverage pointlessly, and in turn, offer loans to lower quality borrowers.

The risk is that loans are the largest main source of income for commercial banks and that makes it risky because it creates the potential for the highest degree of default. It should be noted that the borrower does not repay the loan at once immediately, but rather arrange to repay later and in smaller amounts denominated as instalments (Gezu, 2014). Thus, asymmetric information is a problem in the financial market in that the borrower has much better information about his financial state than the lender does.

This may result in unhealthy loan-books held by commercial banks. Meanwhile, the two most important results of asymmetric information appropriate to financial services are known as moral hazard and opposing selection.

In the advent of non-performing loans, commercial banks face the uncertainty of loan repayment, as they cannot for sure be able to evaluate the creditworthiness of borrowers (Ahmed, 2013). Thus, the adverse selection causes good prospect borrowers to be displaced by bad prospect borrowers, which throughout the period the general quality of bank loan portfolios deteriorates and leads to accumulation of non-performing loans. Eventually, it translates into a decrease in profitability and erosion of capital (Gadzo *et al.*, 2019). This tendency naturally involves the extension of loans which initially send financial risk to a level beyond the reasonable payment capacity of the borrower (Olweny and Siphon, 2011).

## **2.4 EMPIRICAL REVIEW**

It is argued, however, that the poor performance of loans was very uneven in several countries (Erasmus and Makina, 2014). Hamishu (2011) claims that banks do not earn interest income on NPLs and end up losing assets, but also waste money to institute specialised departments and hired specialised financial engineers to deal with NPLs. In the same vein (Brownbridge, 2019, p. 119) observed that, “*if a bank faces NPL problems, it negatively affects its good standing, hence, reputational risk.*” In the same line of argument, Khemraj and Pasha (2012) explain that high percentages of NPLs are highly correlated with banks’ performances, especially in emerging economies. In agreement, Fofack (2015) also associated banks’ heavy accumulation of NPLs with

declining profitability and observed that the NPLs can heavily contribute possible financial distress.

Using time series data for each variable, Ogunleye (2012) employed a panel regression and correlation analysis along with descriptive statistics, examined how far the profitability performance of commercial banks in Ethiopia has been affected by risk associated with credit. The study found out that NPLs are positively related to performance. The findings of the study showed that commercial banks in Ethiopia need to institute policies and programmes to check credit risk to ensure their profitability and survival. A study by Uchendu (2010) to assess the determinants of profitability commercial banks in Ghana used time series data from 2001 to 2011, and employed multiple linear regression in form of FEM. The study found a positive relationship between profitability and NPLs.

However, Olawale (2014) studied how commercial banks in Nigeria performances were affected by credit risk during the period of 2008 to 2012. The study used secondary data collected from the companies audited annual accounts published in their websites and from the publication of the Central Bank of Nigeria. Multiple line regression method of analysis was employed. Profitability was measured with ROA as a function of NPLR. The findings of the study show a negative relationship, but not significant between loan ratio and total advances in terms of deposits. Furthermore, the results indicate a significant negative relationship between non-performing loans and advances rate and banks' profitability. The study further observed that banks profitability could be affected inversely by the levels of non-performing loans and advances, thus affecting greatly the banks' liquidity.

Meanwhile, the author concluded that an increase in credit risk would significantly reduce the financial performance of commercial banks. Moreover, Banker *et al.* (2010) used a panel data set over the period of 1995-2005 for 14 Korean commercial banks to conduct the research.

The relationship between NPL and bank financial performance has been the concern of emerging studies both in developed and developing countries. Several scholars (Kithinji, 2011; Samuel *et al.*, 2012; Adebisi& Matthew, 2015; Ebba, 2016; Kingu *et al.*, 2018; Koju, Kojuand Wang, 2018; Ekinici and Poyraz, 2019) examined the impact of non-performing loans on the financial performance of banks and came -up with diverse conclusions. NPLs were considered one of the main causes of the global financial crisis of 2008, which damaged the USA economy, and ultimately, the economies of many countries. Non-performing loans arise from various sources (Kingu *et al.*, 2018; Kingu, 2018).

The outcome implied that the NPLs rate put a negative impact on the bank productivity. Due to varying findings of studies done across different nations; there exist a gap in literature, hence, the study of the impact of NPLs on commercial banks is important because NPLs in the Namibia context would address and fill this gap. This study further investigated how NPLs affect the financial intermediation role of commercial banks, which is a core source of income to commercial banks, and consequently, has a direct bearing on the financial stability of the Namibian economy.

### **2.4.1 Profitability**

Bank profits are explained by both internal and external determinants (Naceur and Goaid, 2008). The factors, however, differ from bank to bank because of differences in shareholder, managerial decisions, business level strategy, competitive advantage and operational strategy. Empirical evidence suggests that capital size, size of deposit liabilities, bank size, composition of a bank's credit portfolio, interest rate policy, exposure to risk, management quality, labour productivity, bank age, ownership, ownership concentration and structural affiliation among others influences bank profitability. Bank profitability has been measured using various instruments such as ROA, ROE and the net interest margin (Flamini *et al.*, 2009; Saona, 2011; Naceur and Goaid, 2008).

Profitability defines a situation where the total income generated during a given period exceeds the expenses incurred over the same period, given that it was incurred for the purpose of generating that income (Hancock, 2019). Banks are such types of companies, where customers' deposits are posting in liabilities' side and on the other side issuing debt securities posting in the assets part (Gezu, 2014). Financial managers mostly direct their efforts to maximize profits to grow shareholders' worth and survival. The dynamic financial system enhances banks' profitability by raising the amount of money available for investment, and at the same time improving the quality of services provided for the customers (Hancock, 2019). This should lead to the protection of banks, and as such high profits could lead to financial stability (Olweny & Shipho, 2011).



Return on Assets (ROA) Return on Equity (ROE) and Net Interest Margin (NIM) among others, are the indicators used to measure profitability. There are, however, conflicting views among scholars on the superiority of one indicator over the other as a good measure of profitability. Bloem and Gorter (2010) used only the gross profit margin (GPM) in measuring profitability. Michael *et al.* (2006) believes that the three indicators, namely: ROA, ROE and NIM are all good. Hancock (2019) used only ROE to measure profitability in her study. Ogunleye (2012) did not believe that profit level per se could constitute a good measure of profitability and therefore, used ROA and ROE. Uchendu (2010) believed that the three indicators are all equally good.

The bank continues operating if it expects to make profits. Once this expectation is confirmed unrealisable, the most rational decision is to close the bank. In this study, ROA, is considered as a good and most widely used measure of profitability and as such has been used. Return on Assets has been measured as:  $ROA = \frac{\text{Net Earnings}}{\text{Total Assets}}$ .

#### **2.4.2 The Effect of Non-Performing Loans**

A non-performing loan is a credit facility in which the interest and/or principal amount has remained unpaid for a specific period. NPLs can also be referred to as Non-Performing Assets (NPAs). Loans are part of the bank's assets. Repayment of the principal and interest creates a stream of cash flows for the bank. Banks derive their profits from interest repayments. A loan is, therefore, regarded as non-performing if it is past due for ninety days. An increase in non-performing loans is a red flag, cautioning the bank of potential problems, and therefore, immediate action needs to be taken.

The share of non-performing loans in the total loans' portfolio is one of the main indicators of credit risk that contributes to decreasing bank assets (Kithinji, 2011). NPL does not only reduce the bank's profitability, but also the capacity of lending by reducing bankable assets (Lera and Rao, 2016). Depositors and investors start losing faith in the bank as they feel unsecured in terms of getting back their invested money with an expected return, which can lead to panic withdrawal. That is why defining the influence of NPLs is important not only for the bank performance, but also for the financial system. A decline in the ratio of non-performing loans indicates an improvement in the asset quality of public and private sector banks. An increase in the ratio of non-performing loans to total loans, on the other hand, should worry commercial banks.

If non-performing loans are not managed well, this may lead to banking failures. White (2002) alludes to the Japanese financial crisis of 1997 as being caused by non-performing loans. According to White (2010) Japanese banks are still suffering as a result of thousands of billions of yen of bad loans resulting from the collapse in asset prices two decades ago in the country's financial system.

Michael *et al.* (2006) has emphasised that NPL in the loan portfolio affects operational efficiency which in turn affects profitability, liquidity and the solvency position of banks. Non-performing loans are closely associated with banking crises. Batra (2003) posits that, in addition to the influence on profitability, liquidity and competitive functioning, non-performing loans also affect the psychology of bankers in terms of their disposition of funds towards credit delivery and credit expansion. Non-

performing loans are mainly caused by an inevitable number of wrong economic decisions by individuals and plain bad luck (Bloem & Goerter, 2001).

The problem of non-performing loans can pose serious adverse effects on the economy. The Government of the Republic of Namibia (GRN) has implemented various policy measures for the management of non-performing loans and securing confidence in the financial system, which includes licensing of credit reference Bureaus.

Hancock (2019) observed that an increase NPLs has a direct impact on profitability of banks by reducing returns on assets, and hence, posing a negative impact on the banks profit. Apart from the above-mentioned impact, NPLs pose opportunity costs in that the non-interest earning assets could have been invested elsewhere and earned significant profits.

Batra (2013) noted that in addition to the influence on profitability, liquidity and competitive functioning, NPL also affect the psychology of bankers in respect of their disposition of funds towards credit delivery and credit expansion placing more emphasis on NPL leads to the credit risk management segment of the bank assuming priority over other functions of bank's functioning. Therefore, the whole focus of banks would thus be pre-occupied with recovery procedures, rather than concentrating on expanding business, such as extending credit to make profit. The most notable impact of NPL is change in banker's sentiments which may hinder credit expansion to productive purpose.

Banks may incline towards more risk-free investments to avoid and reduce riskiness, which is not conducive for the growth of the economy. Michael *et al.*, (2016) postulates that NPL in a loan portfolio affects operational efficiency, which in turn affects profitability, liquidity and the solvency position of banks.

In a qualitative study conducted by Maseke & Swartz (2021) using secondary data, it was established that Namibian Commercial Banks experienced an increase in profitability and NPLs over the past five-year period. The study concluded that although the commercial banks have risk management systems and controls in place the NPLs are continuously increasing (Maseke & Swartz, 2021). NPLs have a negative impact towards the performance of the commercial banks. Loans are the main sources of revenue for the banks, an increase in NPLs results in the decrease of interest income for the banks (Sheefeni, 2015). A study conducted by Ghosh (2017) in the United States of America revealed that increases in NPLs results in credit supply restrictions, hindering the banks to supply more loans. The banks that have high NPLs will find it difficult to supply loans to their customers and may end up losing customers (Ghosh, 2017).

The effects of NPLs are that: there are high chances that the banks might go into liquidation, there might be a reduction in the banks' turnover due to non-payment of loans and this may prevent the banks to give new loans. The battle between interest and commission on turnover reduces the bank revenues drastically and the banks will ultimately fail to service their customers efficiently and effectively due to limited funds (John, 2018). NPLs have a negative effect on the profitability of banks. Further to that the banks operational efficiency is highly affected (Kirui, 2014). The banks' ability to

lend loans becomes highly affected due to lack of capital. The increases in provision for bad loans lead to undercapitalisation of the banks as well as reduction of the banks' profitability (Nyasaka, 2017).

## **2.5 THE EFFECT OF NPLS ON FINANCIAL PERFORMANCE**

Since interest income from bank assets form a substantial component of a bank's net income, lessened loans or poor asset quality shows unpleasantly on bank profitability. A study by Brock and Suarez (2000) shows a negative relationship between bank spreads and NPLs over total loans for most Latin American banking systems. They claim that this is due to distortions caused by insufficient regulation that allow banks to report misstated loan losses. Agoraki *et al.*, (2011) similarly found a negative relation between credit risk and bank profitability. The study showed that managers who were struggling to maximise profits seem to have adopted a risk-averse strategy.

Research by Messai and Jouini (2013) states that to minimise NPLs and improve the performance of the commercial banks, a few reforms have been made, including but not limited to: restructuring, reduce information gaps between lenders and borrowers; provide timely and accurate information about the debt profile of the borrower and payment history.

A performing loan will provide a bank with the interest income it needs to make a profit and extend new loans. When customers do not meet their agreed repayment provisions for 90 days or more, the bank must set aside more capital on the assumption that the loan will not be paid back. This reduces its capacity to provide new loans. If a bank has too many bad loans on its balance sheet, its profitability will suffer because it will no longer earn enough money from its credit business. In addition, it will need

to put money aside as a protection net in case it needs to write off the full amount of the loan book at some point in time (European Central Bank, 2016).

Akter and Roy (2017) claims that since lending is an integral part of the banks' ongoing activity, it is authoritative that commercial banks keep an eye on the unsettled funds lent out, for which periodic repayments are overdue. This study further showed that, if banks are incapable to re-coup the funds given to the borrowers, this may have a ripple effect on public self-assurance. That is if banks do not collect the funds which are overdue this would accordingly lead to the public losing confidence in the concerned banks. Ultimately, this will force a bank-run, which will further exacerbate the situation, as it will afterward result in a negative impact on profitability. Therefore, this shows that non-performing loans and profitability do have a relationship with each other and in fact, there is an inverse relationship between the two factors.

This further corroborates the argument that lending is a core pillar within the on-going commercial banks' activity because if loans are classified as non-performing ones and such amounts increase, it would significantly reduce profitability by a substantial amount.

Christaria and Kurnia (2016) also observed that if banks do not focus on conserving a manageable level of non-performing loans, this would affect the level of public confidence of the concerned banks. Hence, the profitability of the bank will be diminished. Profitability measures, particularly the ROA, appear to be the most significant representation which impacts NPLs in this stance (Akter and Roy, 2017).

## **2.6 THE EFFECT OF NPLS: COUNTRY CASES**

### **2.6.1 The Banking Crisis in Nigeria**

During the banking sector crisis in Nigeria in the late 1990s, promoters and directors of some of the unsuccessful banks were known to have been engaged in lending to themselves for the attainment of their bank shares contrary to the law. Such loans became non-performing and now subject to legal struggles. For example, shareholders of failed banks such as Afri-bank, Oceanic and Intercontinental had high non-performing loan portfolios. To evade their responsibility, they then sought recourse from the courts on how to sale the sick banks.

According to Bloem and Goerter (2001) poor selection of risks also includes loans based on the expectation of successful completion of a business transaction, rather than on the borrower's credit worthiness. In the case of Nigeria, loans were made available for the speculative purchase of securities to non-qualifying candidates and persons of straw. Massive loans were dished out by most of the unsuccessful banks on doubtful and speculative behaviour. Most of these assets eventually became non-performing. Another case in hand was the collapse of Citibank's credit culture. The aftermath thereof led to asset worsening in one of the most popular banking institutions in the world. Hamishu (2011) observed that pressure to make high profits led to a tendency to overlook well-documented credit standards during the 1980s.

Many bankers and regulators trust that a well-thought bank's credit risk management process offers a leading indicator of the quality of a bank's loan book. The asset quality unswervingly reflects the quality of supervision and the ability of the bank to earn

interest, and hence, profitability. Minimising non-performing loans and increasing bank profitability require good loan management of the loan book.

Although banks originally emerged as deposit takers, they soon matured into intermediaries of funds, thereby assuming credit risk (Olweny and Siphon, 2011). Over time, credit became the core-business of commercial banks and the primary basis upon which a bank's quality and performance are judged. The credit risk management process warrants special prominence because proper credit risk management quality affects the success or failure of financial institutions. Studies of banking crises through the world determine that the most frequent factor in the failure of banks has been usually loan quality (Stiglitz, 2020).

Olweny and Siphon (2011) claim that loan supervision entails monitoring borrowers carefully to detect signs that the borrower may have difficulty in repaying the loan. Such cautions are necessary to maximise the effect of corrective action and to minimise potential losses. The findings from a recent study by Thygeson (2015) showed that non-performing loan portfolios were often the common determinant of bank failures. The causes of NPLs are usually attributed to the lack of effective monitoring and supervision on the part of banks, lack of effective lenders' recourse, and weaknesses of legal structure and lack of effective credit recovery strategies.

### **2.6.2 NPLs in Bangladesh**

According to Louzis *et al.*, (2012) NPLs in Bangladesh commercial banking industry became problematic in the early 90s. This had a serious negative impact on bank profitability. In the last decade, loan default as a percentage of outstanding loans in



state-owned commercial banks were 50 percent or above, whereas private commercial banks and international commercial banks held between 5–10 percent of the total.

### **2.6.3 Malaysia and Singapore**

Karim *et al.* (2010) investigates the relationship between non-performing loans and bank efficiency in Malaysia and Singapore by using the Tobit regression model. The outcome stated that higher NPLs reduce cost efficiency. On the contrary, lower cost efficiency increase non-performing loans and profitability. The results also determine that bad management in the banking institutions results in bad quality loans, and therefore, heightens the level of non-performing loans. Banks should identify them and take the necessary steps to eradicate the NPL from the industry. Several empirical studies have been conducted on non-performing loans and profitability of commercial banks all over the world and confirm that there is an adverse effect of NPLs on the banks' performance (Fofack, 2015).

Ahmed (2013) using Ordinary Least Square Regression was employed to estimate the effect of non-performing loans on financial performance. The results of the OLSR showed that non-performing loans, cost-income ratio, loan recovered, and total revenue were all statistically significant at 1% significance levels, respectively. The liquidity risk was not statistically significant. The non-performing loans and cost-income ratio had a negative influence on financial performance whereas total revenue and loan recovered had a positive effect on financial performance.

Kaaya and Pastory (2013) analysed the effect of credit risk on banks' performance by controlling the effect of deposits and bank size. The results showed a significant negative influence on banks' performance. Correspondingly, White (2002) has

analysed time series data and concluded that NPLs were one of the primary factors that influence bank performance. The empirical results represent NPLs as a percentage of total loans of SCBs were very high and they hold more than 50 % of total NPLs of the banking industry from FY2006 to FY2013. NPLs were one of the foremost factors influencing banks' profitability and it has a statistically significant adverse impact on the Net Interest Income of commercial banks.

#### **2.6.4 NPLs in Kenya**

Kithinji (2011) assessed the effect of credit risk management on the profitability of commercial banks in Kenya. Data on the amount of credit, level of non-performing loans and profits were collected for the period 2004 to 2008. The findings revealed that the bulk of the profits of commercial banks were influenced by the amount of credit and non-performing loans. Thus, the findings of the study signifies that the level of credit and non-performing loans have a significant impact on the profits of commercial banks (White, 2002).

It was, therefore, concluded that credit risk management significantly influences or prevents the failure of a commercial bank. This was because the failure of a bank can be influenced, to a large extent, by the quality of credit-decisions made by managers, and thus, the quality of the risk assets. Credit risk management provides a leading indicator of the quality of banks credit portfolios (Ross, 2015). Bloem and Goerter(2001) examined the relationship between bank performance and credit risk management. It could be inferred from their findings that return on equity (ROE) and return on assets (ROA) both measuring profitability were inversely related to the ratio

of non-performing loans to total loan of financial institutions, thereby leading to a deterioration in profitability.

### **2.6.5 Bosnia and Herzegovina**

According to Ahmed (2013) the shareholder's return is affected as the study showed that there was a connection between the NPL and Return on Equity (ROE). Besides, Warue (2013) analysed the causes and consequences of NPLs in the Bosnia and Herzegovina banking sector. The study concluded that there was a significant correlation between the rate of capital adequacy and non-performing loans. Non-performing loans have a strong negative correlation with indicators of liquid assets share in total assets and liquid assets in long-term liabilities.

### **2.6.6 NPLs in Nepal**

Batra (2013) investigated the effect of credit risk on the financial performance of 160 commercial banks in Nepal from 2012 - 2016. The regression results discovered that capital adequacy ratio (CAR) non-performing loans ratio (NPLR) and management quality ratio (MQR) have a significant relationship with the financial performance (ROA) of the commercial banks in Nepal. Similarly, credit to deposit ratio (CDR) and risk sensitivity (RS) has no significant impact on the financial performance of the commercial banks in Nepal. Further, Dimitrios *et al.*, (2010) examined the elements of non-Performing loans in Nepalese Commercial Bank. The study found that the NPL ratio harms ROA, whereas the NPL ratio has a positive effect on ROE.

## **2.7 DETERMINATIONS OF NPLS**

According to Bofondi and Ropele (2011) there are two major determinants of NPLs namely: (i). firm-specific factors, and (ii). System-wide, macro-economic elements.

### **2.7.1 System-wide, Macro-economic Determinants**

Bofondi and Ropele (2011) observed that NPLs are mainly driven by macro-economic volatility. This indicates the undiversified nature of African economies. Using a pseudo panel-based model for numerous Sub-Saharan African countries, the study found that economic growth, real exchange rate appreciation, the real interest rate, net interest margins and inter-bank loans are significant determinants of NPLs in Sub-Saharan Africa. Rajan and Dhal (2003) positions are that favourable macro-economic circumstances namely: maturity, cost and terms of credit, bank size and credit orientation significantly impact the NPLs.

Meanwhile, Salas and Saurina (2002) warned that real growth in GDP and rapid credit expansion points to some discrepancies in NPLs. Beck *et al.*, (2013) also found that GDP growth was one of the main drivers in the variation of NPLs. The study showed that economic downturns tend to increase NPLs, whilst improvements in economic performance tend to lower the level of NPLs. In the same vein, De Bock and Demyanets (2012) observed that NPL ratios are counter-cyclical in nature, falling during business cycle increases and rising in recessions.

### **2.7.2 Firm-specific Determinants**

Shehzad *et al.*, (2010) argue that concentrated ownership significantly reduces NPLs ratio of commercial banks. However, the findings from the study showed that this

varies depending on the levels of managerial control and shareholders' influence. Furthermore, Cornett *et al.*, (2010) claims that state-owned banks have more exposure to credit risk than privately owned banks. Beck *et al.*, (2013) suggests that diversification, usually measured by bank size, has an impact on loan quality.

Jiménez *et al.*, (2013) concludes that diversification of the credit portfolio at the bank level tends to reduce NPLs. Tabak *et al.*, (2011) concur. Hu *et al.* (2004) show that bank size is negatively correlated to NPLs but find no relationship between diversification and NPLs. Further still, Salas and Saurina (2002) observed that larger bank size allows for more diversification which ultimately leads to reduced risk through reduction in NPLs.

### **2.7.3 Bank Capital**

There is an inverse relationship between bank capital and non-performing loans. Lowly capitalised banks tend to get involved in high-risk investments and give loans that are issued without appropriate credit rating and monitoring (Keeton, 1999). As a result of these activities, the rise in loan default occurs showing the negative relationship between bank capital and NPLs. Furthermore, highly capitalised banks tend to give loans easily based on the assumption that these loans may not necessarily result in bank insolvent or fail. Hence, capital adequacy ratio (CAR) shows the ability of an organisation to face abnormal losses and to still-out-live the set-back. Thus, Hu *et al.*, (2006) concluded that bank size has a negative impact on NPLs when banks give risky advances.

#### **2.7.4 Return on Assets**

Godlewski (2008) examined the association between non-performing loans and return on assets, and concluded that the lower the rate of ROA, the higher would be NPLs. Hence, vice versa. Boudriga *et al.*, (2010) suggest that there is a negative association between ROA and NPLs. It was observed that when the ROA decreases, then the bank starts to make investments in high-risk projects. Consequently, the level of NPLs increase. Makri *et al.*,(2014) also confirmed that there was a negative relationship between ROA and non-performing loans. Meanwhile, Berger and YoungDe (1997) observed that banks with a high level of income are less involved in risky investments that can lead to loan non-payment in the future. It was, thus, concluded that there was a negative relationship between NPLs and bank profitability.

#### **2.7.5 Income Diversification**

Rachman *et al.*, (2018) argue that there was a negative association between NPLs and income diversification. Makri *et al.*, (2014) claim that there are two major types of earnings received by the banks namely: *(a)*. one is from lending activities, and the other is, *(b)*. from non-interest activities such as trading and derivative transactions. Hu *et al.*, (2013) argue that banks with more income other than interest income are more careful and they tend to spread their risk upon a wide spectrum of investment options in order to safe their turf. In order to lower their risk, they limit their investments in very high-risk counters and projects. As a result, these banks have better loan performance between NPLs and income diversification (Ghosh, 2015).

### **2.7.6 Efficiency of bank**

Bentham (2017) observed that operational efficiency increases the higher level of NPLs, which proposes that the behaviour of managers has an effect on NPLs. Fiordelisi *et al.*, (2011) concluded that decreasing efficiency increases the risk level of banks in future. Rachman *et al.*, (2018) concur. When the bank performs all its business activities at a comparatively low cost, then it is said that the bank is operating efficiently. Thygeson (2015) concluded that a decrease in the cost efficiency of commercial banks would affect the increase in future loan defaults. This usually is fate of those commercial banks that are not able to control operational expenses and have problems managing their loan portfolios.

### **2.7.7 Loan to Assets**

The loans to assets ratio measure the total loans outstanding as a percentage of total assets. The higher this ratio indicates that a bank is loaned up and its liquidity is low. The higher the ratio, the riskier a bank may be exposed to higher loan defaults. Loan to assets ratio (LAR) is an indicator of liquidity that reflects credit that the bank is having. Further still, it shows the percentage of bank assets to total debt in a year (Erasmus and Makina, 2014). Loan to assets ratio (LAR) is ratio that used for measuring the level of bank liquidity. Liquidity shows the ability of banks to meet the demand for credit with total assets owned (Klomp, 2004). According to Hempe *et al.*, (1994) loan to assets ratio (LAR) is the ratio used to demonstrate the ability of banks to meet the demand for loans by using the total assets owned by banks. The higher this ratio the better the credit performance level because the greater the loan component given in the total structure of the assets.

However, it has a negative effect on liquidity, because the higher this ratio is means that existing funds are widely used for credit allocation and less for short-term liabilities. According to Kosmidou, (2008) loan to asset ratio (LAR) is stated in most of the studies with total loans to total assets. Similarly, according to Saeed (2014) loan to asset s ratio (LAR) is one source of income generated by commercial banks by way of dividing the total loan on total assets. LAR is used to measure the ability of banks to the meet the demand for credit (Hempe *et al.*, 1994). Loan to asset s ratio (LAR) is a comparison of how big credits which are given by commercial banks are compared to the total assets owned by banks. The larger the credit is, the lower the credit risk that may be faced by commercial banks for funds channelled to borrowers.

### **2.7.8 Bank Size**

The size of a business means the ability it possesses, the variety and number of production capability it has and diversity of services it can offer to its customers (Sethi, 2017). In a simpler way, the best indication of bigness of a firm is the size of its management group and the amount of assets it possesses compared to others in the same industry (Saeed, 2014). Firm size has been remarkably considered as an important determinant of loan performance and bank profitability. This is big banks have achieved more learning, greater cumulative experience and they are able to spread their fixed costs over a greater reach (Klomp, 2014). Therefore, size has been considered as a fundamental variable in explaining loan performance and bank profitability. The relationship between these two has an impact on loan performance and bank profitability.



Gezu (2014) argues that there is a positive relationship between firm size and profitability, suggesting that a positive unit change in firm size leads to an increase in return on equity of firms. According to Klomp (2014) the firm size is commonly measured by gross sales or gross value of assets, logarithm of total assets, number of employees and sales turnover. Growth in size of a firm can be in terms of revenue, profits, assets or number of employees which are all indispensable for increased financial health and profitability.

### **2.7.9 Capital Adequacy**

Capital adequacy refers to the amount of equity to hedge against any shocks that the bank may experience (Kosmidou, 2008). The Capital requirement of banks is highly regulated by governments. This is because capital adequacy plays a crucial role in reducing the number of bank failures, and hence, losses to depositors. The ratio of equity to total assets is employed as a measure for bank capital adequacy.

This measures the percentage of the total asset that is financed with equity capital. Capital adequacy, therefore, refers to the sufficiency of the amount of equity that can absorb shocks that banks may experience. Capital adequacy denotes the amount of capital a bank must hold as required by the financial regulator (Klomp, 2014).

It is expected that the higher the equity to asset ratio, the lower the need for external funding, and therefore, the higher the profitability of the commercial bank. Bank with higher capital to asset ratio are considered relatively safer and tend to have a better margin of cushion, remaining profitable even during economically difficult times (Kosmidou, 2008). Conversely, banks with lower capital adequacy are considered

riskier relative to highly capitalised banks (BoN, 2020). Capital adequacy, is therefore, considered to have effect on profitability of commercial banks.

### **2.7.10 Liquidity**

Liquidity is a factor that determines return on assets which is a measure of profitability (Kosmidou, 200; BoN, 2020). Sethi (2017) posits that commercial banks should have ready cash to meet loan demands by customers. Meanwhile, liquidity test the ability of commercial banks to meet short-term obligations, when they fall due. Banks take deposit from customers and give out loans. Thus, the ratio of a bank's advances to customer deposits is used as proxy for liquidity. Liquidity is a major concern for banks and the shortage of liquidity can trigger bank failure. Banking supervisors also view liquidity as a major concern (BoN, 2020).

However, holding assets in a highly liquid form tends to reduce income as liquid asset are associated with lower rates of return (Kosmidou, 200). For instance, cash which is the most liquid of all assets is a non-earning asset. It would therefore be expected that higher liquidity would negatively correlates with profitability. It is argued that when banks hold high liquidity, they do so at the opportunity cost of some investment, which could generate high returns (Kamau, 2009).

The trade-offs that generally exist between return and liquidity risk are demonstrated by observing that a shift from short term securities to long term securities raises a bank's return but also increases its liquidity risks and the inverse in is true. Thus, a high liquidity ratio shows a less risky, but a less profitable bank (Hempel *et al.*, 1994).

Liquidity, therefore, is a determinant of profitability and management is faced with the dilemma of liquidity versus profitability.

## **2.8 SUMMARY**

This chapter focused on theoretical frameworks and empirical evidence illustrating the effects of non-performing loans on the profitability of commercial banks. Asymmetry of information was the main theory in the ensuing debate on non-performing loans and profitability of commercial banks. Empirical studies from several countries around the world do confirm that indeed non-performing loans affect the profitability of commercial banks.

Several empirical studies have been conducted on non-performing loans and the profitability of commercial banks all over the world and this confirms that NPLs have an impact on banks' performance and profitability. Poor selection of risks also includes loans based on the expectations of successful completion of a business transaction rather than on the borrower's credit worthiness. In the case of Nigeria, loans were made available for the speculative purchase of securities to non-qualifying candidates and persons of straw. Most of these assets eventually became non-performing. It was observed that pressure to make high profits led to a tendency to overlook well-documented credit standards during the 1980s.

Many bankers and regulators trust that a well-thought-out bank credit risk management process provides a leading indicator of the quality of a bank's loan book. The asset quality critically reflects the quality of supervision and the ability of the bank to earn

interest, and hence profitability. Minimising non-performing loans and increasing bank profitability requires good loan management of the bank's loan book. In the African context, it was observed that NPLs were mainly driven by macro-economic volatility. Furthermore, it was noted that inter-bank loans were significant determinants of NPLs in Sub-Saharan Africa and that favourable macro-economic circumstances such as terms of credit and credit orientation significantly impacts the NPLs.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 INTRODUCTION**

This chapter deliberates on the methodology the study employed in investigating the effects of non-performing loans on the profitability of commercial banks in Namibia. Among the elements discussed in this section are the research philosophy, the research design, the approach, target population, techniques used in data collection as well as the techniques used to analyse the data.

### **3.2 RESEARCH PHILOSOPHY**

Research philosophy is defined as a system of beliefs and assumptions about the development and nature of knowledge (Saunders, Lewis and Thornhill, 2016). By understanding the research philosophy, it should help with selecting the correct approach to the research. Given the type of research being conducted, the foundation of knowledge needs to be known and understood so as to select the right research methodology (Saunders *et al.*, 2016).

According to Creswell (2015) there are two types of research philosophy namely: positivism and interpretivism. For this study, a positivist stance was adopted. The positivist philosophy works well in the tradition of a natural scientist. A natural scientist prefers to work in a manner that can allow for observation of social reality to take place, while allowing such research to produce law-like generalisations, which are common in natural sciences.

### **3.3 RESEARCH DESIGN**

A research design is the plan followed by the researcher in carrying out the study and in gathering information from respondents (Titus and Mitchell, 2015). A research design guides the structure, strategy and approaches that will be used to carry-out the research study (Burns and Blout, 2015). According to Saunders *et al.* (2016) there are three types of research designs namely: quantitative, qualitative and mixed methods research designs. This study employed quantitative research methods. This is because the nature and scope of the study necessitated a quantitative design. The research strategy, approaches, data collection procedures and methods were also quantitative by design. Hence, this justified the choice of the quantitative research paradigm.

Profitability, measured by return on assets was taken as the dependent variable. Furthermore, non-performing loans were measured by the non-performing loans ratio, which is calculated as non-performing loans over total loans as the independent variable. CAMEL factors affecting profitability, namely: capital adequacy, operational costs efficiency and liquidity were all well-thought-out in the analysis as control variables.

### **3.4 RESEARCH APPROACH**

The research approach refers to the process that the researcher is going to take to ensure that the study addresses the objectives of the research (Saunders *et al.*, 2016). There are three approaches that can be considered, namely: exploratory, descriptive and explanatory.

### **3.4.1 Exploratory Research**

Exploratory research seeks to find out what is happening. According to Creswell (2015) exploratory research is preliminary research to clarify the exact nature of the problem to be solved. It is used to ensure additional research is taken into consideration during an experiment, as well as determining research priorities, collecting data and honing-in on certain subjects which may be difficult to take note of without exploratory research (Saunders *et al.*, 2016). Sometimes this research is informal and unstructured. It serves as a tool for initial research that provides a hypothetical ground for applied research (Bryman, 2015).

### **3.4.2 Explanatory Research**

Explanatory research is a study which addresses the relationship between variables (Bryman, 2015). Explanatory research is a type of research design that focuses on explaining the aspects of one's study (Kothari, 2016). Explanatory research is responsible for finding the 'why' of the events through the establishment of cause-effect' relationships. Therefore, explanatory studies can deal with both the determination of causes (post-facto research) and effects (experimental research) through hypothesis testing (Saunders *et al.*, 2016).

### **3.4.3 Descriptive Research**

Descriptive research aims to describe the profile of the phenomenon. According to Creswell (2015) descriptive research is used to describe characteristics of a population or phenomenon being studied. Descriptive research addresses the "what" questions which show the characteristics of the population or situation being studied.

For this research, the explanatory research design was applied. This helped in understanding various cause-effect relationships between the variables. This was in line with the quantitative design and the deductive approach which were undertaken in this study, resonating with the positivist stance which was also adopted for the study.

### **3.5 POPULATION**

Lavrakas (2008) postulates that the study target population comprises of all elements or units possessing similar characteristics and for which the research findings would be generalised. It is from the target population that the sample is drawn (Bryman, 2018). All the six commercial banking corporations were considered for the study, namely: Bank Bic Limited, Bank Windhoek Limited, First National Bank Limited, Letshego Bank Limited, Nedbank Namibia Limited and Standard Bank Limited. Staff working in the NPL departments were considered as a sample of the study since they were eligible to provide the relevant information that was needed for the study.

According to the Namibia Financial Sector Strategy of 2021, commercial banks represent 76 percent of the banking sector's assets size, loan size, liability positions and capital and earnings. The remaining 25 percent represents other non-banking institutions such as insurance companies, pension funds, investment managers, micro-lending institutions, the Namibia Stock exchange and the stockbrokers.

### **3.6 SAMPLING STRATEGY**

According to Saunders *et al.* (2016) there are two main strategies namely: (i). Probability, and (ii). Non-Probability sampling strategies. In this study, the probability sampling strategy was used, employing stratified sampling procedures. Stratified sampling is a type of probability sampling method in which the total population is



divided into smaller groups or strata to complete the sampling process (Creswell, 2015). The population was divided into various subgroups drawn from the 6 different commercial banks in Namibia. The strata are formed based on some common characteristics in the population data (Bryman, 2015). After dividing the population into strata, the researcher randomly selected the participants proportionally, only targeting staff who were working with NPLs.

This study set out to identify the factors that determine NPLs in Namibia and to empirically determine the impact of NPLs on bank profitability on all the study objectives. Firm-specific data employed in the study was obtained from the financial statements of the selected Namibian commercial banks while macro-economic-level data was obtained from the IMF International Financial Statistics over the study period which spans 2015-2020. The choice of this period is purely based on the availability of data.

### **3.7 DATA COLLECTION**

Due to the nature of financial studies, the study used secondary data sources. The data was sourced from statistical records maintained by the 6 commercial banks. Data was also sourced from the Bank of Namibia, the regulatory body supervising the banking industry in Namibia.

### **3.8 PROCEDURE**

Due to the nature of financial studies, the study used secondary data sources, sourced from statistical records maintained by the 6 commercial banks.

### 3.9 DATA ANALYSIS

The initial step to analyse descriptive statistics was applied for the preliminary sample, where the data was collected from 6 Namibian Commercial Banks. Panel data was collected from the 6 Namibian Commercial Banks for the period 2015-2020. A regression model was used with panel data to carry out tests. It was assumed that each entity had its own uniqueness that may have an effect on the explanatory variables. The fixed effects model (FEM) analysed the relationship between NPLs and bank explanatory variables (Do, Ngo & Pung, 2020). According to Kingu (2018) time series data is examined using different estimation methods depending on the research questions and objectives.

The two most popular regression estimation models applied in comparable studies were the *Pooled Regression* (OLS) model, the *Fixed Effects* regression model and *Random Effects* regression model. Nevertheless, the OLS property violates the assumption of the classical linear regression model. There is no correlation between the error term and the independent variables, and thus, this can lead to biases and inconsistent outcomes. Therefore, because OLS fails to control for the heterogeneity effect in panel data, the current study used the *Fixed Effects* and Random Effects model to analyse the effects of the independent variables on the dependent variables.

Further to that, quantitative data obtained from the respondents was analysed through the IBM SPSS 26 Program. Correlation Analysis, Mean scores, Chi-square and ANOVA Analysis were carried out. Correlation Analysis was conducted to establish the relationship that exists among the variables. Mean Score Analysis was conducted to establish the central tendency measurement of the variables. Further to that, Chi-

square Analysis was conducted to measure the goodness of fit of the variables. Analysis of Variance was carried out to test the relationships between the group variables.

### 3.9.1 MODEL SPECIFICATION

The Fixed effects model recognises heterogeneity among cross-sectional units as against homogeneous units in the case of the pooled OLS regression model. Hence, under the fixed effect model, individual specific effects of cross-sectional data are captured (Batalgi, 2005). In this study, individual bank specific effects may include the level of innovation, policies, location, marketing strategies, skills of the workforce, clientele base. The fixed effects regression is given as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{3it} + a_i + u_{it}$$

Where:

$Y_{it}$  =the dependent variable^ represented by x (DV) where i = entity and t = time

$\beta$  =the coefficient for independent variable

$X_{it}$  =represents one independent variable

$a_i$  =(i=1.... n) is the unknown intercept for each entity ( n entity-specific intercepts)

$u_{it}$  =the error term

Using this regression specification, the model for this study is thus written as:

$$ROA_{it} = \beta_0 + \beta_1 NPL_{it} + \beta_2 LTA_{it} + \beta_3 BS_{it} + \beta_4 CAA_{it} + a_i + u_{it}$$

## **3.9.2 VARIABLES**

### **3.9.2.1 Return on Assets (ROA)**

The dependent variable for this research is Return on assets, it is calculated by dividing net profits after tax with total assets at the end of the financial year. Return to assets is an indicator of performance and measures how the banks are profitable, relative to their assets, meaning how management is efficient in utilising the company assets to generate profits (Batalgi, 2005). A higher ROA indicates effective and efficient use of the bank's assets to generate profits. This study has extracted ROA from published annual financial statements of commercial banks. High ROA shows that the financial position of the banks is stable and they are not interested in investing in risky loans because of less pressure to generate income.

### **3.9.2.2 Non-Performing Loans (NPL)**

Non-Performing Loans ratio, which is calculated by dividing non-performing loans with total loans and advances, is used as an indicator of credit risk. The higher the NPL ratio, the poorer the credit quality and, therefore, the higher the risk that more loan loss will be charged against income. On the other side, banks with a high level of capital tend to give loans easily as they know that due to these loans banks are not going to be bankrupt and fail; therefore, banks are highly engaged with these kinds of risky credit activities, suggesting a positive association between capital and NPLs (Rajan, 2017).

### **3.9.2.3 Loan to Assets Ratio (LTA)**

The loans to assets ratio measure the total loans outstanding as a percentage of total assets. A higher ratio indicates that a bank is loaned up and its liquidity is low. The higher the ratio, the riskier a bank may be to higher default.

#### **3.9.2.4 Bank Size (BS)**

Bank Size represents bank size proxied by the bank's total assets. This is used to capture the fact that bigger banks are better placed than smaller ones in taking advantage of economies of scale in transactions that they will tend to enjoy a higher level of profits. The higher the total assets, the greater its potential of income generation (Laryrea *et al.*, 2016).

#### **3.9.2.5 Capital Adequacy**

Capital adequacy ratio (CAA) is the ratio of capital to the sum of a risk-weighted bank's assets. This ratio measures the amount of a bank's capital relative to the amount of its risk-weighted credit exposure. Amuakwa and Boakye (2015) studied the various banking factors that effected the NPLs in Ghana and revealed that microeconomic factors have a negative impact on NPLs, while bank capital has a positive impact on NPLs.

### **3.10 ETHICAL CONSIDERATIONS**

#### **3.10.1 Informed Consent**

All the participants were fully informed of the aims and objectives of the study, and they were given consent forms to sign before participating in the study.

#### **3.10.2 Privacy and Confidentiality**

According to Saunders *et al.* (2016) privacy and confidentiality should be addressed before commencing on the study. In this study, participants were assured that all data and information would be always kept under lock and key. No third parties would ever be allowed to have access to private and confidential data and information.

### **3.10.3 Non-Discrimination**

The researcher ensured that there was no discrimination against participants on the basis of sex, race, faith, creed, ethnicity, gender, religion or any other factors not related to scientific competence and integrity of the study.

### **3.10.4 Legality**

According to Creswell (2015) the researcher has a duty and responsibility to know and religiously follow relevant laws, guiding and protecting the integrity of institutions, organisations and participants before, during and after the study has been completed. This also includes institutional and governmental policies (Saunders *et al.*, 2016).

Furthermore, the study adhered to all ethical behaviour of truthful reporting and presenting honestly. Data was never distorted, falsified or modified. All sources in this study have been acknowledged accordingly. All data and information from the study were treated with the highest and strictest level of confidentiality.

## **3.11 SUMMARY**

This chapter focused on the research design and methodology which were employed to carry-out this study. A positivist paradigm was adopted, in line with the quantitative approach and explanatory design. This chapter also included the research strategy, the population, the sampling strategy, sampling techniques, mediating variables and ethical considerations. The next chapter provides the presentation of the results and their discussion.

## **CHAPTER FOUR: RESULTS AND DISCUSSIONS**

### **4.1 INTRODUCTION**

This chapter presents the results and discussions made from the study on the effects of non-performing loans on the profitability of commercial banks in Namibia. Furthermore, it provides findings of the study based on the study objectives which were articulated in chapter one, in an effort to try and address the research problem and answer the research questions.

### **4.2 RESULTS PRESENTATION**

The independent variables for the study were Non-performing Loan (NPL) ratio, Loan to Assets ratio, Bank Size and Capital Adequacy. The dependent variable that measured the profitability of the banks was Return On Assets (ROA).

The population consisted of 6 commercial banks licensed by the Central bank of Namibia and operational in Namibia during the period 2015 to 2020. The data was collected from the financial statements of each commercial banks and the annual ratios were obtained for each period under study. The period 2015 to 2020 was chosen because data was available and easily accessible. The statistical analysis was carried out using available data and relatively recent information considered to be accurate and reliable. Data obtained was transferred to the IBM SPSS 27 software where descriptive statistics, correlation analysis, Chi-square test of independence and regression analysis were performed.

### 4.2.1 DESCRIPTIVE STATISTICS

The summary of the descriptive statistics for all the variables used in the study is presented in Table 4.1. The table reports the mean, standard deviation, maximum and minimum values along with the number of observations.

**Table 4.1 Summary Descriptive Statistics of the Study Variables**

	n	Minimum	Maximum	Mean	Std. Deviation
ROA	36	-.35	.32	.0135	.118
NPL	36	.00	.59	.0683	.1398
LOAN_TO_ASSETS	36	-.052	22.38	1.932 2	4.9191
BANK_SIZE	36	6.07	8.47	7.311 1	.6439
CAPITAL_ADEQUAC Y	36	.05	13.00	.7016	2.1344

*Source: Own computation by author (2022)*

The average return on assets across all six banks was 1.35% with a standard deviation of 11.8% indicating that, on average a sampled bank recorded relatively low profit which varied significantly among the six banks. Bank Windhoek recorded quite high return on assets during the period under review, while Bank BIC recorded losses for all the years for the period under review. The mean NPL of the six banks was 6.83% in which Standard Bank had the highest NPL of 59% while LETSEGO had the lowest NPL of 0.3%. The relatively high standard deviation for NPL suggest varying degrees of credit risk among the sampled banks. The loan to assets ratio of the six banks was



193.22% on average during the period under review. It is noteworthy that Bank Windhoek had an average of over 200% loan to assets ratio in 2015 and 2016 while Bank BIC recorded a negative loan to assets ratio of over 200% in 2016. Overall, Bank size had a mean of 7.31. There was relatively low variability in the sizes of the six banks sampled. Capital adequacy averaged 70.16% during the review period.

#### **4.2.2 UNIVARIATE ANOVA**

The univariate analysis of variance of dependent and independent variables is summarised in Table 4.2. The table shows the individual effect of the independent variables NPL, loan to assets, bank size and capital adequacy on profitability (ROA) of the sampled commercial banks.

**Table 4.2: Univariate Analysis of dependent and independent variables**

Dependent Variable: ROA						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	.218 <sup>a</sup>	4	.054	6.509	.001	.465
Intercept	.037	1	.037	4.451	.043	.129
NPL	.009	1	.009	1.081	.307	.035
LTA	.027	1	.027	3.208	.083	.097
BS	.039	1	.039	4.695	.038	.135
CA	1.813E-5	1	1.813E-5	.002	.963	.000
Error	.251	30	.008			
Total	.480	36				
Corrected Total	.469	35				

a. R Squared = .465 (Adjusted R Squared = .393)

**Source: Own computation by author (2022)**

The results in Table 4.2 show the relationship between the four independent variables and profitability (ROA). The adjusted R-squared value of 0.393 suggests that the independent variables can jointly explain 39.3% of the variability in the commercial banks' profitability. However, the F significance tests show that only LTA and BS are individually significant in explaining the variability in profitability at a 10% level of significance.

The other two independent variables all have p-values greater than 0.1. The Partial Eta Squared for BS is 0.135 which indicate that about 13.5% of the variation in the

profitability of the sampled banks is explained by their sizes. In addition, the Partial Eta Squared for LTA is 0.097 and this indicates that about 9.7% of the variation in the profitability of the six commercial banks sampled is explained by their LTA.

### 4.2.3 CORRELATION ANALYSIS

Correlation analysis is performed to assess the degree of linear association between two variables. The bivariate correlations between the study variables are presented in the Pearson correlation matrix in Table 4.3. Bank size and profitability (ROA) are significantly correlated at a 1% level of significance. Loan to assets and profitability (ROA) are positively and significantly correlated at a 1% level of significance while bank size and return on assets are negatively and significantly correlated at a 1% level of significance. In addition, bank size and NPL as well as bank size and loan to assets are also negatively and significantly correlated.

**Table 4.3 Pearson Correlation Coefficient Matrix of Study variables**

	ROA	NPL	LOAN_TO_ASSETS	BANK_SIZE	CAPITAL_ADEQUACY
ROA	1				
NPL	0.0181	1			
LOAN_TO_ASSETS	0.6114**	-.1229	1		
BANK_SIZE	-.5739**	-.5072*	-.526**	1	
CAPITAL_ADEQUACY	-.0012	-.0713	.0155	.029	1

\*\* Correlation is significant at 1% level of significance

*Source: Own computation by author (2022)*

#### 4.2.4 REGRESSION RESULTS

Using Python with panel data of 36 observations (n=36) obtained from financial statements for six commercial banks for the period 2015 to 2020, the estimated fixed and random effects models are shown in Tables 4.4 and 4.5, respectively.

The fixed effect model results show that the overall model is statistically significant at both 1% and 5% level of significance. Loans to assets (LTA) has statistically significant effect on profitability of the commercial banks at 1% level of significance. The regression coefficient of the variable LTA when estimating the fixed effects model is consistent with the expected sign.

The regression coefficient of BS is also significant at 1% level of significance. In addition, the regression coefficient for NPL is significant at 5% level of significance but its sign is positive and therefore not consistent with the sign's expectation. The variable CA does not have statistically significant effect on profitability of the six sampled commercial banks.

**Table 4.4 Fixed Effect Model Estimates**

<b>Model 1: Fixed-effects Model</b>				
<b>Variable</b>	<b>Coefficient</b>	<b>Standard error</b>	<b>t-statistics</b>	<b>p-value</b>
<b>NPL</b>	0.2705	0.1199	2.2560	0.0327
<b>LTA</b>	0.0206	0.0035	5.8940	0.0000
<b>BS</b>	0.1193	0.0393	3.0366	0.0054
<b>CA</b>	0.0006	0.0044	0.1314	0.8964
<b>Const</b>	-0.9177	0.2987	-3.0721	0.0049
R-squared = 0.6216				
F-statistic = 10.679				
p-value = 0.0000				

**Source: computation by author (2022)**

When using the random effects model, the variables loan to assets (LTA) and bank size (BS) both have statistically significant effects on profitability (ROA) of the six sampled commercial banks at a 5% level of significance. However, while the regression coefficient of LTA is consistent with the expected sign, the regression coefficient of BS is not consistent.

**Table 4.5 Random Effect Model Estimates**

<b>Model 2: Random-effects Model</b>				
<b>Variable</b>	<b>Coefficient</b>	<b>Standard error</b>	<b>t-statistics</b>	<b>p-value</b>
<b>NPL</b>	0.2025	0.1221	1.6588	0.1072
<b>LTA</b>	0.0184	0.0035	5.1995	0.0000
<b>BS</b>	0.0850	0.0389	2.1847	0.0366
<b>CA</b>	-0.6583	0.0046	0.1654	0.8697
<b>Const</b>		0.2985	-2.2051	0.0350
R-squared = 0.5418 F-statistic = 9.1658 p-value = 0.0001				

**Source: Computation by author (2022)**

From Table 4.5, the regression coefficient of loan to assets (LTA) can be interpreted to suggest that a 100% increase in loan to assets can be expected to increase profitability (ROA) by about 2.03%, holding all other factors constant. This is to be expected because loan advances generate income for banks, subsequently increasing profitability. The results presented above suggest that there is not enough evidence to reject the null hypothesis of this study at a 5% level of significance.

**Table 4.6 Hausman Test**

<b>Chi-square test statistics</b>	34.9093
<b>df</b>	5
<b>p-value</b>	0.000

**Source: computation by author (2022)**

The Hausman test was performed to compare the fixed effects model and the random effects model and thus identify the most suitable model between the two models. This test is conducted since the F tests in Table 4.4 and Table 4.5 indicate that the fixed effects and random effects models are both significant. The null hypothesis of the Hausman test assumes that the fixed effects and random effects models do not differ substantially. If the null hypothesis of this test is rejected, it can be concluded that the random effects model is inappropriate, and the fixed effects model is more suitable.

The results of the Hausman test are presented in Table 4.6. The results shows that *Chi – square = 17.92 with p – value = 0.003* . Therefore, the null hypothesis of the Hausman test is rejected at a 1% level of significance since the *p – value* is less than 0.01. This suggests that the fixed effects model is the most appropriate model compared to the random effects.

### **4.3 DISCUSSION OF RESULTS**

It is evident from the findings that LTA has a significant and positive effect on ROA. This is in accordance with the findings of Kosmidou (2008) who states that the larger the loan, the more credit risk it is to the bank, and the lower the profit subsequently. This is in line with the results of and Chan (2009) who found out that loans make up a large segment of interest-bearing assets and banks with more deposits transformed into

loans are likely to have more profits. Hence the positive relationship between bank performance and LTA.

Bank Size also has a significant and positive effect on the profitability of commercial banks in Namibia. This concurs with Bhattarai (2020) who also found a positive and significant relationship between bank size and bank performance for commercial banks in Nepal. Bhattarai (2020) argues that this is expected because if the size of the bank is relatively bigger it is most likely to reflect in the bank's strength and performance.

Other independent variables considered in the study such as NPL and CAA do not have a significant effect. This was confirmed by the correlation analysis and the estimated regression models. Thus, the study's null hypothesis is not rejected at a 5% level of significance since the *p value is greater than 0.05*. This imply that non-performing loans had no significant effect on the profitability of commercial banks in Namibia. Is this result in line with the finding of Olweny and Siphon (2011) which loans size of the bank is not problem, as much as proper policies, procedure and control mechanisms are in place to monitor and recover them.

Loan to assets and NPL are negatively correlated, though not significantly so Ghosh (2017) revealed that increases in NPLs results in credit supply restrictions, hindering the banks to supply more loans.

The results of the estimated regression model support the importance of credit in commercial banks. Credit is a core-business of commercial banks and the primary basis upon which a bank's quality and performance are judged. This was in line with

an argument propounded by Hamishu (2011). It was observed that the credit risk management process warrants special prominence because proper credit risk management quality affects the success or failure of commercial banking corporations. Studies of banking crises through the world reveal that the most frequent factor in the failure of banks has usually been loan quality (Stiglitz, 2020).

Olweny and Siphon (2011) claim that loan supervision entails monitoring borrowers carefully to detect signs that the borrower may have difficulty in repaying the loan. Such monitoring is necessary to maximise the effect of corrective action and to minimise potential losses. The findings from a recent study by Thygerson (2015) show that non-performing loan portfolios were often the common determinant of bank failures. The results from this study found that the causes of NPLs are usually attributed to lack of effective monitoring and supervision on the part of banks, lack of effective lenders' recourse, weaknesses of legal structure and lack of effective credit recovery strategies (Hamishu, 2011).

#### **4.4 SUMMARY**

This chapter focused on the presentation of results, analysis and interpretation. It started with descriptive statistics, correlation analysis, ANOVA and estimating regression models. The fixed effects and random effects models were used to analyse the effect of independent variables on the dependent variable - profitability (ROA). The fixed effects model is preferred to the random effects model. In addition, the results of both models revealed that loan to assets (LTA) and bank size (BS) have a significant and positive effect on profitability. A 100% increase in loan to assets can be expected to increase profitability (ROA) by about 2.03%. Other independent



variables have insignificant effects on profitability. Therefore, the null hypothesis of no significant relationship between NPL and ROA is not rejected, meaning that non-performing loans have no effect on the profitability of commercial banks in Namibia. The next chapter presented the summary of this study and recommendations.

## **CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS**

### **5.1. INTRODUCTION**

This research set out to find the effects of nonperforming loans on the profitability of commercial banks in Namibia. This chapter presents a summary of the key findings, conclusions, and recommendations from the findings.

### **5.2 SUMMARY OF THE STUDY**

The study is on the effects of nonperforming loans on the profitability of commercial banks in Namibia. Secondary data for the period 2015 to 2020 was obtained from the selected top six banks' financial statements. Descriptive analysis, correlation analysis and regression analysis were performed. Among the independent variables considered, only loan to assets and bank size have a significant impact on profitability (ROA). Thus, the study's null hypothesis is not rejected at a 5% level of significance, implying that there is a need for commercial banks to transform more deposits into loans in order for them to increase interest-bearing assets.

### **5.3 CONCLUSIONS**

Based on the findings from the study, the following conclusions were made:

It was concluded that the performance of commercial banks in Namibia is influenced by the banks' loan to assets ratios and the size of the banks. Commercial banks with higher LTA are likely to be more profitable, while larger banks perform better than smaller banks.

## **5.4 RECOMMENDATIONS**

Based on the foregoing analysis, discussions, observations, and findings of the study, it would be appropriate to make the following recommendations:

According to the findings of this study, non-performing loans have no significant effect on bank performance. Loan to assets and Bank size have an impact on the profitability of the commercial banks in Namibia. Commercial banks in Namibia should therefore engage credit bureaus for assistance in credit assessment and provision of information about susceptible defaulters to minimise exposure to credit risk that eventually starves the bank of the available cash, hence resulting in liquidity constraints.

Bank Managers and credit Managers should further innovate ways to grow the Asset books and Bank size subsequently. Considering the significant effect of Loan to assets, the study therefore, recommends that commercial banks should come up with innovative ways of enhancing their internal financial polices to improve the asset sizes while maintaining the bank's liquidity.

Credit personnel should develop a sound credit management system in order to control and carefully monitor loans extended to the borrowers. Banks should also be innovative and embrace technology to be able to facilitate data mining and management information systems to facilitate access to customer information regarding history to inform the decision on the risk of the customer and thus the loan to be granted.

Banks should be allowed to price loans based on the projected risk of the client, in order to reduce liquidity risk which results from higher Loan to Asset ratio. Higher pricing for higher risk customers and lower interest rate for lower risk clients as well as better pricing for clients who repay their loans in time to encourage borrowers to adhere to their credit terms.

Amid the difficult economic conditions associated with the Covid-19 pandemic, banks must continue to closely monitor inflation to stabilise the economy. Commercial banks must show resilience to learn from recent experiences, demonstrate courage to tackle challenges and exploit opportunities embedded in tribulations experienced. The banks should further be committed to deliver monetary, price and financial stability, navigating emerging risks in the economic environment in an attempt to grow the economy rapidly and create new jobs.

## **5.5 RECOMMENDATIONS FOR FUTURE STUDIES**

It is recommended that future studies may use different measures of profitability and also explore more explanatory variables.

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## APPENDICES

### Appendix A: Language Editing Certificate



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#### LANGUAGE & COPY-EDITING CERTIFICATE

4<sup>th</sup> March 2022

**RE: LANGUAGE, COPYEDITING AND PROOFREADING OF ELIPHAS HADIBO MWAETAKO's THESIS FOR THE MASTER OF BUSINESS ADMINISTRATION DEGREE OF THE NAMIBIA BUSINESS SCHOOL OF THE UNIVERSITY OF NAMIBIA**

This certificate serves to confirm that I copyedited and proofread **ELIPHAS HADIBO MWAETAKO's** Thesis for the **MASTER OF BUSINESS ADMINISTRATION DEGREE** entitled: **AN INVESTIGATION INTO THE EFFECT OF NON-PERFORMING LOANS ON PROFITABILITY OF COMMERCIAL BANKS IN NAMIBIA**

I declare that I professionally copyedited and proofread the thesis and removed mistakes and errors in spelling, grammar, and punctuation. In some cases, I improved sentence construction without changing the content provided by the student. I also removed some typographical errors from the thesis and formatted the thesis so that it complies with the University of Namibia's guidelines.

I am a trained language and copy editor and have edited many Postgraduate Diploma, Masters' Thesis, Dissertations and Doctoral Dissertations for students studying with universities in Namibia, Zimbabwe, Eswatini, South Africa and abroad. I have also copy-edited company documents for companies in the region and abroad.

Please feel free to contact me should the need arise.

Yours Sincerely,

A handwritten signature in black ink, appearing to read "Dr. Greenfield Mwakipesile".

The Rev. Dr. Greenfield Mwakipesile



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