



SEEK WISDOM, ELEVATE YOUR INTELLECT AND SERVE HUMANITY !



Factors Affecting Non-Performing Loans: Case study on Development Bank of Ethiopia

**By
Mingizem Belete**

**Advisor
Amare Abawa (PhD)**

**A Research Project submitted in Partial Fulfillment of the Requirements
for the Award of the Degree of Masters in Business Administration in
Financial Service Program**

**June, 2024
Addis Ababa, Ethiopia**

DECLARATION

I hereby declare that this work entitled '*Factors Affecting Non-Performing Loans: Case study on Development Bank of Ethiopia*'. is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgment has been made in the text.

Mingizem Belete

Candidate's Name



Signature & date

Advisor's Approval

This Research project has been submitted for examination with my approval as a College advisor.

Amare Abawa (PhD)

Advisor's Name



Signature & date

Addis Ababa University
College of Business and Economics
MBA in Financial services Program

This is to certify that the research project prepared by Mingizem Belete entitled: "Factors Affecting Non-Performing Loans: Case study on Development Bank of Ethiopia" and submitted in partial fulfillment of the requirements for the Master of Business Administration in Financial Services Program complies with the regulations of the College and meets the accepted standards with respect to originality and quality.

Approval of Board of Examiners

Internal Examiner

Signature & Date

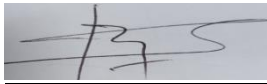
Degefa Duressa (PhD)

 24/07/24

External Examiner

Signature & Date

Mekonnen Mengistie (PhD)



ACKNOWLEDGMENTS

First and foremost I would like to thank Almighty God for granting me the strength, courage, patience and inspirations in completing this work. Next, I am very grateful to my advisor **Amare Abawa (PhD)**, for his professional assistance, patience and understanding that help me for the completion of this study. I would like to express my sincere thanks and gratitude to my lovely family for their moral encouragement, prayer throughout my life and support in all my academic achievement. Finally, I am also thankful to my colleagues and friends for their cooperation, encouragement, constructive criticisms, intellectual support and guidance.

Contents

DECLARATION	ii
ACKNOWLEDGMENTS	iv
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF ACRONYMS	xi
ABSTRACT.....	xii
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of the study	1
1.2 Statement of Problem	4
1.3 Research Questions	8
1.4 Objectives of the Study	8
1.4.1 General Objective	8
1.4.2 Specific Objective	8
1.5 Research Hypothesis	8
1.6 Significance of the Study	9
1.7 Scope of the Study.....	9
1.8 Limitation of the Study	10
1.9 Organization of the study	10
CHAPTER TWO	11
LITERATURE REVIEW	11
2.1 Concepts and Definitions	11
2.1.1 Banking.....	11
2.1.2 Role of Banks.....	11
2.1.3 Bank Lending.....	11
2.1.4 Basic concept of loan	12

2.1.3	Definition of Non-Performing Loans.....	12
2.2	Theoretical Literature Review.....	13
2.2.1	The Principal -Agent Problem	13
2.2.2	Adverse Selection Theory	14
2.2.3	Moral Hazard Theory.....	14
2.2.4	Financial intermediation theory	14
2.2.5	Information asymmetry theory	15
2.2.6	Loan Processes.....	15
2.2.7	Classifications of Loans and Advances	16
2.3	Bank specific determinants of NPLs.....	17
2.3.1	Interest rate.....	17
2.3.2	Credit Assessment.....	18
2.3.4	Credit Monitoring	18
2.3.5	Credit Size.....	19
2.3.6	Collateral.....	20
2.4	Customers Specific Factors Affecting Non-Performing Loans	20
2.4.1	Diversion of funds.....	21
2.4.2	Credit culture	21
2.5	Empirical literature review.....	21
2.5.1	Cross countries.....	21
2.5.2	Empirical Studies in Africa.....	26
2.5.3	Empirical studies in Ethiopia	28
2.6	Conceptual framework	31
CHAPTER THREE		32
METHODOLOGY OF THE STUDY		32
3.1	Research Approach	32
3.2	Research Design.....	32

3.2	Target Population and sample size selection.....	32
3.2.1	Sampling Techniques.....	32
3.2.2	Sample size & sampling procedure.....	33
3.2.3	Types of Data and Instruments of Data Collection.....	33
3.2.4	Questionnaire	33
3.2.5	Interview	34
3.3	Procedures of Data Collection.....	34
3.4	Methods of Data Analysis	34
3.4.1	Descriptive statistics	34
3.4.2	Inferential statistical Analysis.....	35
3.4.3	Correlation	35
3.4.4	Multiple Regression Analysis	35
3.5	Measurement Instruments	36
3.6	Validity and Reliability	36
3.7	Ethical Issues.....	37
CHAPTER FOUR.....		38
RESULT AND DISCUSSION		38
4.1	Introduction	38
4.2	Demographic information	38
4.3	Descriptive statistics for Factors of NPL	40
4.3.1	Bank specific factors.....	40
4.3.2	Borrower specific factors	43
4.4	Descriptive statistics for Non-performing Loan.....	44
4.5	Summary of descriptive statistics for the variables.....	45
4.6	Correlation analysis.....	46
4.7	Regression Analysis	49
4.7.1	Diagnostic Tests.....	49

4.7.2	Regression result and discussion	54
4.8	Discussion of the Regression Result	57
4.9	Result of Interview questions.....	60
CHAPTER FIVE		62
SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS.....		62
5.1	Summary of Findings	62
5.2	Conclusions	63
5.3	Policy recommendations	64
5.4	Recommendation for Further study.....	65
Reference		66
Appendix.....		72

LIST OF TABLES

Table 3.1: Model Specification of Variables.	36
Table 4.1: General Background Information of Respondents.....	39
Table 4.3: Bank Specific factors	41
Table 4.4: Borrower specific factors	44
Table 4.5: NPL	45
Table 4.6: Descriptive statistics	46
Table 4.7: Correlation matrix of NPL and independent variables	47
Table 4.8: Autocorrelation Test	51
Table 4.9: Multicollinearity Test	52
Table 4. 10: Model Summary.....	56
Table 4.11: ANOVA table	56
Table 4.12: Regression output.....	56

LIST OF FIGURES

Figure 1.1: NPL Status of DBE.....	3
Figure 2.1: Conceptual framework.....	31
Figure 4.1: Homoscedasticity Test.....	50
Figure 4.2: Normality Test.....	53
Figure 4.3: Linearity test	54

LIST OF ACRONYMS

DBE	Development bank of Ethiopia
NPL	Nonperforming loan
NBE	National Bank of Ethiopia
SPSS	Statistical package for Social Science

ABSTRACT

The growth of non-performing loan portfolios in banks has significantly contributed to triggering financial crises within the banking industry. Non-performing loans represent a significant liquidity risk, potentially hampering banks' ability to maintain adequate capital levels for their daily operations. This study aims to delve into the fundamental variables that play a role in influencing nonperforming loans (NPLs) specifically within the Development Bank of Ethiopia. The research sample for this study comprised 120 staff members, and a census sampling method was employed to gather the necessary data. Through the utilization of questionnaires and interviews, data collection took place, followed by comprehensive analysis using SPSS. The findings from the study underscored that factors such as poor credit assessment, weak collateral strength, high-interest rates, credit size, and insufficient credit monitoring all exert a positive and statistically significant impact on NPL rates. It is imperative for the higher management team at DBE to closely monitor bank-specific and borrower-specific factors contributing to NPLs within priority sector business loans. By establishing good credit policies and procedures, the bank can effectively mitigate the adverse effects associated with non-performing loans. Loans granted to customers should be evaluated to ascertain the adequacy of the collateral provided, emphasizing the importance of robust legal documentation.

Key word and phrases: Non-performing loan, bank specific factors, borrower specific factors

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Banks play a vital role in the development of a country by serving as the cornerstone of its financial system. A healthy banking sector is crucial for driving the national economy forward. To facilitate this, banks engage in various financial activities, such as accepting deposits from the public through savings, current accounts, and time deposits. These accumulated funds are then channeled back to the public in the form of credit that fuels economic growth. In Indonesia, banks predominantly generate their main income from loan interest, which sustains their operational functions. However, it's important to note that not all loans come without risks; some carry significant risks that could potentially jeopardize the overall health and stability of a bank (Harimurti et al., 2022).

The bad loan portfolio of a bank and the overall health of the financial system are fundamentally interconnected, serving as key indicators of fragility that can have far-reaching implications for the nation's economic activity. Specifically, if a bank carries a high proportion of non-performing loans, it becomes vulnerable to substantial risk, potentially leading to insolvency and detrimental outcomes for the institution. Beyond just the risk of specific bank failure, the presence of non-performing loans can drag down the overall performance of financial institutions, impacting stability across the sector. When a significant portion of banks struggle with non-performing loans, the financial stability of the entire sector comes into question, posing challenges for the allocation of funds and investment decisions. The uncertain environment created by non-performing loans makes it difficult for banks to efficiently channel resources from surplus to deficit economic units with promising investment opportunities, ultimately jeopardizing financial stability and economic growth (Marijana, 2013).

The most important problem facing banking institutions is non-performing loans, often known as non-performing finance. There are instances when a borrower may not be able to return the money they borrowed within the time frame that was agreed upon with the bank; these loans are classified as non-performing loans (NPL). According to the International Monetary Fund (IMF), a non-performing loan (NPL) arises when a borrower has not made a payment in over 90 days, or when interest has been renegotiated, postponed, or promoted for

over 90 days. Alternatively, if payments are under 90 days past due but are never anticipated to be made again, an NPL may exist (Chavan and Gambacorta, 2016).

Non-performing loans were also classified by the Basel Committee (2001) as loans that have not been repaid after 90 days. Non-performing loans are defined as loans whose credit quality has declined to the point where full repayment of the principal and/or interest is not completed in compliance with the loan's contractual repayment terms under the Ethiopian Banking business directive of the National Bank of Ethiopia (NBE, 2008).

As a measure of the quality of bank loans, nonperforming loans (NPL) are among the most closely watched key indicators. Sharp growth in non-performing loans (NPL) have the power to negatively impact banks' liquidity and profitability, which may potentially result in bank collapses and advanced financial crises. As a result, banks may restrict their lending policies and/or loan programs, which might have a detrimental impact on the economy by creating a credit crisis (Stijepović, 2014). Therefore, one of the top concerns for regulators and legislators is NPL reduction. In order to monitor NPL and assess the effects of various policies on NPL, stakeholders involved in NPL reduction must have a thorough understanding of the factors that contribute to NPL.

Ethiopia's banking industry has grown quickly in recent years due to increasing loan activity and economic growth. But this expansion has also been followed by an increase in non-performing loans (NPLs), which presents serious obstacles to the long-term viability and stability of financial institutions. A significant participant in Ethiopia's banking industry, the DBE has likewise seen a noticeable rise in non-performing loans. In order to create effective risk management strategies and advance financial stability, it is crucial to comprehend the causes driving non-performing loans (NPLs) in the DBE (Asrat, 2013).

For the objective of providing development finance to creditworthy borrowers and workable investment projects based on government priority area projects, DBE raises funds locally and furthermore obtains development loans from overseas organizations. Every year since its establishment, the number of projects involving non-performing loans has increased as well as their amount. DBE's primary activity is lending, and the majority of its operating profit is made up of interest income. A bank's primary activity is lending, and the majority of its earnings comes from interest revenue. The primary source of revenue and operating for DBE

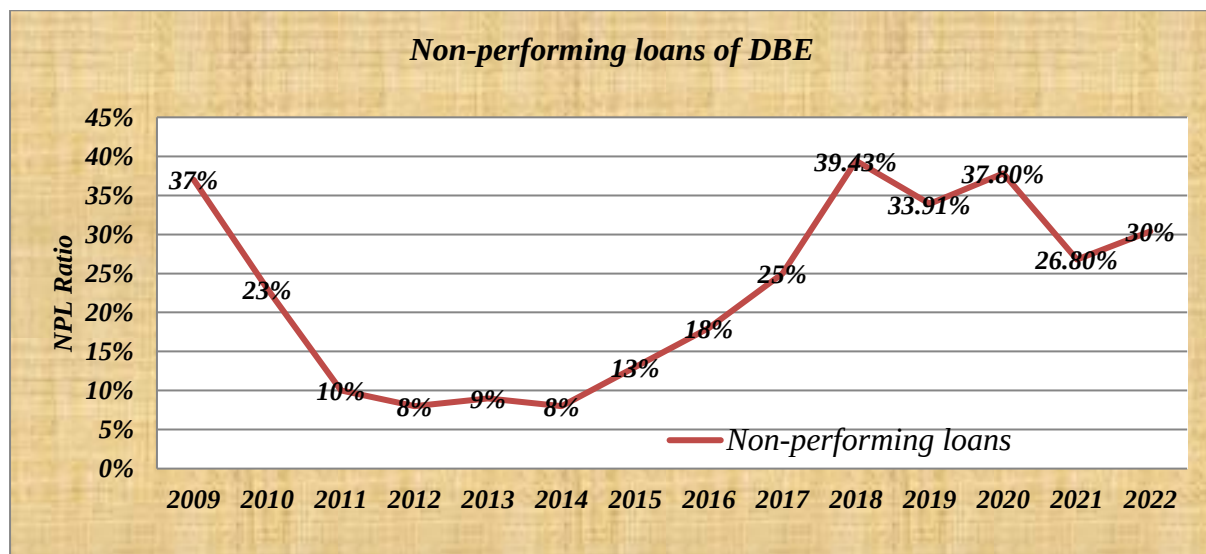
is lending to projects related to manufacturing, agro processing, and commercial agriculture (DBE, 2014).

Even while project finance is a significant source of revenue for the bank and one of its main assets, it is a dangerous area for banks. Prior to making loans or advances, it is crucial to keep an eye on both particular and macroeconomic difficulties. Economic growth and development are impeded by non-performing loans (NPLs), which provide substantial obstacles to the stability and profitability of financial institutions. Comprehending the elements that lead to non-performing loans (NPLs) is imperative for proficient risk mitigation and the development of suitable guidelines (Asrat, 2013).

In nations with a long history, the concept of financing development has evolved into promoting industrial expansion. Playing a critical role as a long-term financing institution, it significantly contributes to capital formation by channeling investments into the productive sector, which is essential for fostering widespread economic growth (Chandra and Abdul, 2005). These institutions align themselves with the broader national agenda for development by providing extended loans lasting between 10 to 25 years. Following governmental directives, development banks concentrate their funding efforts on projects located in regions that have been designated as high priority by the government (Asrat, 2013).

Development Bank of Ethiopia (DBE) plays a crucial role by providing both financial and technical assistance to government priority projects in key sectors such as Agriculture, Agro-processing, Industry, and Mining. However, the current challenge faced by the bank revolves around a significant amount of non-performing loans (NPL) that have accumulated over time, particularly stemming from the riskiest sectors like Agriculture. As these NPLs pose a threat to the bank's financial stability, urgent measures need to be taken by the Development Bank of Ethiopia to address this issue effectively and safeguard its operations for sustainable growth (Ahmed, 2018).

Figure 1.1: NPL Status of DBE



Source: Own computation using DBE annual report

As per the figure above, the NPL report trend for the last fourteen years, this indicates that yearly collection performance of the bank are not performed well since 2014 due to different factors. According to DBE Bank's BSC 2018/19 fiscal year performance report in the areas of NPL initially intended to have a ratio of 15.76%, but the actual NPL ratio stood at 33.91%, signifying underperformance by the bank. This high ratio surpasses a bank's accepted NPL limits and exceeds the usual yearly growth rate for total NPLs.

According to the DBE's annual report, the Non-Performing Loan (NPL) ratio peaked at 39.43% in 2018 and remains high at 30% in 2022, exceeding the required level. The consistently elevated NPL ratios observed across all periods in DBE indicate a pressing need for further examination within this study's scope in the DBE.

1.2 Statement of Problem

Non-performing loans can significantly impact a bank's liquidity and profitability, which play crucial roles in determining the bank's overall efficiency. The increase in loan defaults within the banking industry can hinder income generation efforts, ultimately limiting the bank's ability to maximize profitability. Moreover, the mismatch of maturities between assets and liabilities introduces liquidity risks that can degrade the bank's credit rating and overall image or goodwill, as highlighted by Badar and Yasmin (2013). Therefore, it is crucial to carefully consider the determinants of non-performing loans (NPLs) due to their significant impact on the survival of banks. The adverse effects of NPLs often stem from the bank managers' selective nature when choosing borrowers (Brown, 1998). As the level of non-performing

loans rises, the consequences can be severe. For instance, a high level of NPLs can dissuade financial institutions from refinancing defaulting clients, pushing them back into a cycle of low productivity. Hence, a thorough examination of various aspects relating to loan defaults, such as the source of credit, loan purpose, type of loan, and loan conditions, is crucial for policymakers and lending institutions. Whether defaults occur randomly or are influenced by specific factors in certain situations, empirical investigations are necessary. Such detailed scrutiny will enable financial institutions to optimize their credit programs effectively.

Lending, a crucial practice in the banking sector, carries inherent risks of non-repayment by borrowers and fixed interest rates on term deposits. These risks can result in diminishing lending rates, potentially reducing the bank's investment returns compared to deposit earnings. In navigating the complexities of credit risk management, banks play a pivotal role in providing financial support to individuals, businesses, and governments for fostering economic growth. Unfortunately, challenges such as bad asset quality, high levels of non-performing loans (NPLs), and decreased bank profitability can lead to loan defaults and impact the overall stability of financial institutions (Abimbola, 2020).

The degradation of banks' portfolio loan quality has been identified as a key contributing factor to numerous financial challenges plaguing the banking sector globally, leading to previous financial crises. The escalation in the volume of nonperforming loans may result in severe repercussions. The financial distress experienced by banks was significantly heightened due to the enlargement of non-performing loan portfolios within the banking sector. The primary source of liquidity risk is which exposes banks to potential insufficiency in operational funds, stems from nonperforming loans. Given that loans and advances constitute a significant portion of a bank's assets, the lack of their performance can significantly impact the bank's profitability and liquidity position (Hou, 2007).

The five-year strategic plans of the Development Bank of Ethiopia have revealed a remarkable increase in its balance sheet and the volume of loans allocated to development projects over the last thirty years, as highlighted by Ahmed (2018). However, a concerning trend emerges as the bank's asset quality, gauged by the non-performing loan ratio, continues to rapidly deteriorate, presenting formidable obstacles to its sustainability and operational efficacy.

In June 2018, Non-Performing Loans (NPLs) rose to Birr 15.4 billion, representing 39.43% of the total outstanding loans, even though the overall loan portfolio continued growing. This

increase stemmed from the bank funding more problematic projects. As a development financial institution, the bank generally has a higher risk tolerance compared to commercial banks, leading to an expected higher ratio of non-performing loans (NPLs). However, the current level of non-performing loans (NPLs) at the bank surpasses what is typically deemed normal for development banks, which is a maximum of 15% (DBE Five Years Bank Strategy Plan, 2019). According to the association of DBE, the established criterion for acceptable asset quality is set at 15% of the total outstanding loan amount.

The National Bank of Ethiopia, in response to these challenges, established specific criteria to address the issues at hand. Commercial banks are expected to maintain a NPLs ratio not exceeding 5%, while the Development Bank of Ethiopia faces a stricter maximum of 15%. However, the DBE has consistently struggled with NPLs, with their ratio spiking to over 40%. The NBE's November 2021 report highlighted the alarming discrepancy between the current NPLs ratio of the DBE compared to the typical threshold of 15% for development banks.

The global interest in exploring the factors impacting non-performing loans in the banking industry is pronounced, with a multitude of empirical studies shedding light on the causes and variables influencing this phenomenon in nations worldwide. Despite the common theme of investigating non-performing loans, these studies vary significantly in sample size, data type, and research objectives. For example, Rajha (2017) discovered that factors like loan size and the global financial crisis significantly contribute to loan defaults in Jordan. In a similar vein, Rachman et al. (2018) revealed the impact of profitability and credit growth on non-performing loans within Indonesian banks. Furthermore, Wood et al. (2018) identified critical bank-specific factors, such as return on equity, return on assets, capital adequacy ratio, and loan to deposit ratio, as key determinants of non-performing loans in Barbados. Singh et al. (2021) demonstrated the significant effects of Return on Asset, Capital Adequacy Ratio, Bank Size, GDP growth, and Inflation on Nepalese conventional banks. Notably, Mahyoub and Mohd (2021) highlighted that the economic situation does not influence non-performing commercial banks in Malaysia. Additionally, Kumar (2022) unveiled that the annual growth rate of GDP and inflation rate exhibit a statistically insignificant negative effect on non-performing loans in selected commercial banks of Nepal. Finally, Bangagnan (2021) underscored that ratios like loans to total bank assets, return on assets, and loans to deposits can amplify non-performing loans in CEMAC banks.

Previous studies on bank-specific factors affecting non-performing loans (NPLs) in countries like Ethiopia may not be applicable due to the unique characteristics of DBE, such as Rural Development and Sectorial Focus. This highlights the need for further research to identify prevalent bank-specific factors affecting NPLs in Ethiopia.

Several academic studies have been conducted in the Ethiopian banking industry in this area. Consider the research conducted by Million et al. (2019), Arega et al. (2016), Negalign (2019), Tehulu and Olana (2014), Umer (2015), Anisa (2015), Mamuye (2015), and Dereje (2020). Using secondary data, Million et al. (2019) determined the effects of macroeconomic and micro variables on credit risk in the Ethiopian commercial banking sector; however, he did not demonstrate the effects of customer- and bank-specific factors on non-performing loans (NPLs) in DBE. Negera (2012) identified poor credit assessment, failed loan monitoring, underdeveloped credit culture, aggressive lending, compromised integrity, weak institutional capacity, unfair competition, willful default by borrowers, and fund diversion for unintended purposes as causes of loan default in Ethiopian commercial banks, but did not include bank-specific variables or customer-specific variables. Tehulu and Olana (2014) found out ownership, operating inefficiency, bank size, and credit growth all have statistically significant effects on credit risk but on their study customer specific variables were not included. Umer (2015) on the other hand, found out that macroeconomic variables and bank specific variables were significant effect on NPL but customer specific variables were not included in the study. Mamuye (2015) found out less collateralized loans, inadequate project oversight, and inadequate risk assessment all contribute to loan default but he was not included the variable like credit monitoring , interest rate, loan diversion and credit culture. Arega et al. (2016) found out bank specific and customer specific variables were a major cause for occurrence of NPL in Development Bank of Ethiopia but their study conducted only using descriptive method and particularly in Central region. Negalign (2019) found out that performance, credit size, poor credit evaluation, poor loan terms, absence of an active credit recovery mechanism, and insufficient collateral significantly affect NPL in CBE and Dashen banks but borrower credit culture variable was not included.

While the research conducted by Arega et al. (2016) provided valuable insights into the subject matter, it primarily focused on providing explanations rather than exploring the statistical relationships and significance of bank-specific variables and NPL adequately. Additionally, a more comprehensive analysis is required to determine how the factors under study are interconnected and influence the NPLs of banks.

The above mentioned facts along with the empirical gap in the literature call for a research in order to deeply find out the most important bank specific factors and customer specific that affect NPLs of Development bank of Ethiopia.

1.3 Research Questions

This study is guided by the following basic research questions:

1. What are the bank specific and borrower specific factors of NPL in in development bank of Ethiopia?
2. How bank-specific factors affecting Non-performing loans in development bank of Ethiopia?
3. Which factors have more effect on Non-performing loans in development bank of Ethiopia?

1.4 Objectives of the Study

1.4.1 General Objective

The main objective of the study is to examine the basic factors that affecting NPLs in case of Development Bank of Ethiopia at head office level.

1.4.2 Specific Objective

- To analyze the effect of credit assessment on NPL in development bank of Ethiopia.
- To analyze the effect of credit monitoring on NPL in development bank of Ethiopia.
- To analyze the effect of Credit size on NPL in development bank of Ethiopia.
- To analyze the effect of interest rate on NPL in development bank of Ethiopia.
- To analyze the effect of collateral on NPL in development bank of Ethiopia.
- To analyze the effect of loan diversion on NPL in development bank of Ethiopia.
- To analyze the effect of credit culture on NPL in development bank of Ethiopia.

1.5 Research Hypothesis

H1: Credit assessment has positive effect on NPL in development bank of Ethiopia.

H2: Credit monitoring has positive effect on NPL in development bank of Ethiopia.

H3: Credit size has positive effect on NPL in development bank of Ethiopia.

H4: Interest rate has has positive effect on NPL in development bank of Ethiopia.

H5: Collateral has positive effect on NPL in in development bank of Ethiopia.

H6: loan diversion has positively affects NPL in development bank of Ethiopia.

1.6 Significance of the Study

This research will contribute to the existing literature on non-performing loans by providing insights into the factors affecting NPLs in the Development Bank of Ethiopia. The findings will assist policymakers, bank management, and other stakeholders in formulating strategies to reduce non-performing loans and enhance credit risk management practices, thereby promoting financial stability and sustainable economic growth. The study's findings describe the factors that affect a bank's NPLs in DBE. The findings of this study are useful to a variety of stakeholders. DBE can monitor and manage their non-performing loans with the help of this study. Additionally useful is a financial performance analysis provided by loan provisions. The data will also assist bank management in pinpointing the precise factors that worsen nonperforming loans so that they can be effectively managed to improve loan performance. Furthermore, the study would help the student researchers to be aware and knowledgeable of NPL. It means the study would help them to be a better analyst and it can be a help as future reference for more studies in the future. For the staffs in credit department: this study would enable them to place their effort on the gap identified.

1.7 Scope of the Study

This study was concentrate on the variables influencing non-performing loans at the Development Bank of Ethiopia. In actuality, the bank operates 110 branches and 25 districts across the country.

Methodologically, the investigations were exclusively pay attention to bank- and customer-specific causes of NPLs. Explanatory and descriptive research designs was used in the investigation. The rationale for employing these designs is based on how the equations are constructed and how the research issues are addressed.

Geographically and time scope, DBE head office is the sole focus of the study. This is justified by the fact that, while it is technically feasible, it is challenging to cover all regions and branches nationwide. The amount of time, resources, and restrictions given for this research are insufficient. As a result, the researcher will conduct the study in a purposefully chosen location and were choose respondents using a straightforward random sample technique.

1.8 Limitation of the Study

The findings of the case study may have limited generalizability to other banks or financial institutions in Ethiopia or different countries. The DBE has unique characteristics and operates within a specific context, so caution should be exercised when extrapolating the findings to other settings. The study's sample size may be limited due to practical constraints and the availability of participants for interviews and focus group discussions. A smaller sample size may affect the representativeness of the findings and limit the overall generalizability of the results. A study of NPLs in Ethiopia needs wider coverage of all factors deemed necessary.

1.9 Organization of the study

The study organized in to five chapters in this study. The first one includes the study's context, problem statement, hypothesis, goal, and relevance. The related theoretical and empirical literature is reviewed in Chapter two. The study area, data source, study technique, and model formulation are all described in Chapter three. In chapter four, the results of an empirical analysis are discussed. The study is concluded in chapter five, which also presents some policy implications based on the primary findings.

CHAPTER TWO

LITERATURE REVIEW

2.1 Concepts and Definitions

2.1.1 Banking

Banks serve as vital financial institutions that play a crucial role in the economic system by accepting deposits from the general public and sourcing funds from various channels, such as individuals with surplus money ('the haves'), to provide loans to those in need of financial assistance ('the have-nots'). This process, also known as financial intermediation as described by Goosen et al. (1999), facilitates the efficient allocation of funds in the economy. By lending out money at higher interest rates than those offered to depositors, banks generate income primarily through the interest they earn. This income is derived from the interest rate differential between deposits and loans, which forms the bank's net income. Ultimately, the core objective of banks and other financial institutions is to operate profitably while maximizing shareholder value.

2.1.2 Role of Banks

The banking sector is a vital driver of economic growth in all countries. Their significance lies in their ability to gather deposits and effectively allocate resources for productive investments in the real sector, thereby facilitating credit availability to stimulate economies. Additionally, banks serve as crucial facilitators of large-scale projects by consolidating resources beyond individual capacities. Furthermore, they play a pivotal role in financial transactions and are the primary source of credit in any nation's economy. Commercial banks, as the main source of debt funding, extend credit to a diverse array of borrowers for personal, business, or corporate purposes, making them instrumental in fostering economic development (Bagehot, 1873; Rose, 2002; Saunders & Cornett, 2003).

2.1.3 Bank Lending

Investment in a productive sector is not just beneficial in terms of economic growth; it is, in fact, a fundamental prerequisite when considering the overall development of a country. The process of capital formation plays a crucial role in facilitating this investment function. Once a sufficient level of capital has been accumulated, the opportunity for sound investment decisions arises, paving the way for a continuous flow of capital in the future. Financial institutions, with banks being the primary players in this arena, effectively carry out these

functions through various mechanisms, such as providing loans (Islam, 2009). Lending, which involves the provision of resources from one party to another, operates on the premise that the recipient party will repay or return those resources at a later date, essentially creating a debt relationship.

In their role as financial intermediaries, banks gather funds from savers through deposits and subsequently distribute them to borrowers in the form of loans. This process highlights the crucial role customers' deposits play in the overall lending mechanism, thereby emphasizing the positive impact of increasing or securing deposits on loan availability. Commercial banks, as major providers of credit, cater to a diverse range of borrowers for myriad purposes, whether personal, business, or corporate (Saunders & Cornett, 2003). It is important to note that bank finance remains a primary source of debt funding, with the intermediation functions proving mutually beneficial for both the banks and the borrowers involved (McCarthy et al., 2010).

2.1.4 Basic concept of loan

Different corporate organizations across the economy rely on bank loans for financing various aspects of their operations. This financial support from banks is crucial for a wide range of businesses, including producers, distributors, service providers, builders, homebuyers, commercial real estate developers, and merchants, among others (Wondimu, 2012). The utilization of capital by banks plays a pivotal role in shaping the growth of both local and national economies. While extending credit, banks naturally face risks, and there are inevitable loan losses associated with some borrowers' inability to repay debts. However, effective organization and administration of lending services by highly professional entities can help mitigate such losses. A prudent bank's loan policy should be tailored to address the diversity and quality of its loan portfolio. This policy not only sets out guidelines and monitoring mechanisms for lending activities but also encapsulates the underlying lending principles and philosophy of the bank (Holger, 2008).

2.1.3 Definition of Non-Performing Loans

According to the Bank for International Settlements (2004), Non-Performing Loans are loans that customers fail to meet the bank's ability to repay debts for more than 90 days. Furthermore, the International Monetary Fund - IMF (2009) defines bad debts as any loan with both interest and principal payments overdue for more than 90 days, or if the interest rate has been refinanced, restructured, or delayed after the agreed 90 days. However, Agić

and Jeremić (2018) have stressed that a universally accepted definition of bad debts is lacking and that these loans can be interpreted in broad or narrow terms. In a narrower understanding, bad debts are those loans that have surpassed the 90-day mark without repayment. It is important to consider the nuances and implications attached to categorizing debts as non-performing or bad, as they often represent financial risk and challenges for both the lenders and borrowers involved in the transactions.

Non-performing loans (NPLs) are a critical concern within the banking sector, as they refer to loans that have not been repaid and hold an outstanding balance more than 90 days beyond the loan's maturity date, as per the Basel Committee's 2001 definition. The National Bank of Ethiopia further specifies NPLs as loans or advances whose credit quality has degraded to the extent that full collection of principal and interest is jeopardized according to the respective terms. These non-performing loans can result from payments being overdue by 90 days or more in both interest and principal, or from being categorized as substandard, doubtful, or loss assets within the realm of unpaid loans. Such delinquent credit facilities, when left unresolved, are known to contribute to banking crises, with various internal and external factors playing a role in their escalation, a notion demonstrated in the study by Negalign (2019). Given that a bank's risk of financial insolvency is significantly tied to the quality of its assets, the ratio of NPLs to total loans emerges as a pivotal indicator for assessing asset quality within the banking industry, as recognized by the Basel Committee on Banking Supervision (2016). This metric is commonly utilized in the existing literature to gauge the creditworthiness of financial institutions or entire financial systems with a focus on asset quality evaluation.

2.2 Theoretical Literature Review

2.2.1 The Principal -Agent Problem

According to Viswanadham & Nahid (2015), the agency theory posits that managers wield decision-making authority within organizations, acting as both principals and agents for shareholders - the primary owners of the business. This theory has gained traction as an explanatory framework for business financial performance, its diverse applications often seen as complementary under various assumptions. Exploring the intricate relationship between management and shareholders, who are stockholders of the organization, the theory unveils potential conflicts in agency roles. Essentially, company management, perceived as agents hired by shareholders, are entrusted with the task of enhancing stockholder value through

robust financial outcomes. Subsequently, it becomes imperative for management to prioritize shareholders' interests and enhance the corporation's financial health, as highlighted by Swamy (2012).

2.2.2 Adverse Selection Theory

In line with the concept that sharing credit information among credit applicants can lead to improved outcomes, as noted by Pagano and Jappelli (1993), the exchange of information helps to mitigate adverse selection issues. Upholding this view, Richard (2011) and Auronen (2003) emphasize the challenge in differentiating between reliable borrowers and risky ones due to the presence of asymmetric information, which is a breeding ground for adverse selection and moral hazard challenges. This theory underscores that asymmetry in knowledge during transactions can place one party, typically the borrower, in a more advantageous position compared to the other party, in this case, the lender. As a consequence, the party with a limited understanding of the impending transactions is likely to struggle in making optimal decisions, highlighting the significance of information parity for fostering better decision-making in financial dealings on both sides of the equation.

2.2.3 Moral Hazard Theory

In accordance with this view, a debtor has the option to declare default if he anticipates having no trouble applying for credit in the near future. This decision arises from the inherent challenge that lenders face in accurately gauging the debtor's accumulated wealth over time, rather than solely relying on current financial information provided during the loan application process. Ultimately, the increased uncertainty surrounding a debtor's financial status can escalate the likelihood of default, especially when creditors are unable to thoroughly assess the debtor's ability to repay the loan. Consequently, lenders may impose higher interest rates to offset the risk, inadvertently contributing to market instability and potential crashes (Alary & Goller, 2001).

2.2.4 Financial intermediation theory

Financial intermediation, a vital process in the economic system, involves the transfer of funds from entities with excess funds to those in need through intermediary institutions. According to Matthew and Thompson (2008), financial intermediaries can be identified based on several key characteristics. Firstly, they predominantly accept fixed-term deposits that are independent of the status of their investment portfolios. Secondly, their liabilities, in the form

of deposits, tend to have shorter maturities compared to the assets they hold. Additionally, these institutions typically have a high demand for liabilities. Lastly, their assets and liabilities are typically non-transferrable. These distinctions underscore the pivotal role that financial intermediaries play in facilitating the flow of funds from surplus units to deficit units, enhancing economic growth and stability.

2.2.5 Information asymmetry theory

The theory of information asymmetry, which forms the basis of many economic models, rests on the premise that the borrower often possesses more knowledge regarding the inherent risks of the project that is being funded compared to the lender. This asymmetry can lead to challenges in accurately identifying reliable borrowers, thereby giving rise to issues related to moral hazard and adverse selection, as highlighted by Richard (2011). Such challenges can impede the smooth flow of funds from surplus units to deficit units, hampering overall financial effectiveness and efficiency. To address these challenges effectively, fostering long-term customer relationships, facilitating open information sharing, and implementing robust borrower monitoring mechanisms emerge as crucial strategies. It is worth noting that these obstacles significantly contribute to the accumulation of nonperforming loans within the banking sector, as underscored by Bofondi & Gobbi (2003).

2.2.6 Loan Processes

According to the loan procedure and manual provided by the Development Bank of Ethiopia (2016), the Bank's Loan Process is meticulously structured to prioritize the customer's needs by delivering swift service, low costs, and exceptional quality. This method initiates by engaging and encouraging potential clients to apply for investment loans and concludes upon successful loan repayment. The Loan Process consists of four distinct loan-processing teams operating at both corporate and District levels to manage and oversee loan-processing tasks across different stages and levels of responsibility.

Credit process

The Bank welcomes applications from both recruited and walk-in customers if they meet the Bank's loan requirements, which are diligently processed by the branches. The recruiting process involves attracting and persuading potential applicants through various communication channels. Additionally, the Bank performs due diligence and Know Your Customer (KYC) assessments to evaluate the borrower's integrity and creditworthiness, safeguarding against unsuitable borrowers and reassessing their credit standing.

Project Appraisal

The project appraisal document meticulously examines and evaluates various crucial aspects including the technical, market, financial, and managerial viabilities. It delves into the detailed socio-economic benefits of proposed projects. Specifically, the document covers a comprehensive analysis of the market segment, which includes scrutinizing demand and supply dynamics, identifying market prospects, pinpointing major marketing areas related to the proposed product or service, outlining a robust marketing strategy, detailing product pricing analysis, and concluding with a detailed SWOT Analysis examining the project's strengths, weaknesses, opportunities, and threats.

Loan Approval

Once the loan applications for financing the development projects are received and screened for appraisal by the Credit Process/branches, the Projects Appraisal District appraisal teams proceed to evaluate the project. Following the project appraisal, the decision regarding loan approval or rejection is then made by the District Loan approval team, which involves deliberation and careful consideration. Once a decision is reached by the Loan Approval Team, the finalized loan approval document is either accepted or rejected. Subsequently, the case is then forwarded back to the Credit Process/branch for further necessary actions.

2.2.7 Classifications of Loans and Advances

Loans can be classified as either performing or nonperforming. Performing loans are those on which principal and interest payments are made on time in accordance with the terms of the loan agreement between the creditor and the debtor, whereas nonperforming loans are advances or loans whose credit quality has deteriorated to the point where full collection of principal and interest is required. Loans fall into five distinct categories.

Pass: Loans classified in the pass category rely heavily on the borrower's current financial standing and repayment capability. The process of managing such loans is a critical aspect. In line with the Bank's principles and as stipulated in the NBE guidelines, loans falling into the pass loan category include short-term loans lasting less than 30 days, as well as medium- and long-term loans with a maturity period fewer than 128 days (NBE, SBB/52/2012).

Special Mention: Loans to enterprises, which may represent a variety of challenges, for instance, considering continuing with business loss.

Substandard: Loans whose interest or principal payment are longer than a quarter of a year overdue debts of loaning conditions are facilitated

Doubtful: The full liquidation of outstanding debts appears to be problematic as indicated in the record, which suggests that there will be a loss. The precise amount of this loss remains uncertain at this time. In anticipation of such risks, banks typically make a 50% provision for loans that may not be fully recovered due to doubt.

Loss: Loss (unrecoverable) and virtual loss. Outstanding debts considered non-collectible are often loans to businesses who requested assurance and justification under liquidation legislation. Banks fully account for loan losses..

2.3 Bank specific determinants of NPLs

There is a significant amount of literature discussing the impact of macro-economic factors on non-performing loans (NPLs), with a scarcity of studies focusing on the influence of bank-specific determinants. It has been observed that banks tend to increase their lending during periods of financial stability to maximize their profits. However, this practice can create an illusion of relaxed lending standards, subsequently leading to an increase in loan defaults (Weinberg, 1995).

It is crucial to consider not only external factors like macroeconomic conditions as causes of non-performing loans (NPLs) in the banking industry. The distinct features of each bank and its strategic decisions on efficiency and risk management also play a crucial role in shaping the trajectory of NPL development. Exploring the link between NPLs and bank-specific characteristics reveals that the credit policy adopted by a bank significantly impacts the eventual NPL levels. For instance, some managers might opt for insufficient credit assessments to rapidly boost credit activity for short-term profitability. In the pursuit of maximizing returns, banks often expand their loan portfolios swiftly by focusing on interest income, sometimes foregoing rigorous borrower evaluations in favor of market share expansion, especially evident during economic upswings according to Keeton (1999) and Fernandez De Lis et al. (2000).

2.3.1 Interest rate

Interest rates play a crucial role in the financial sector. When individuals or institutions borrow money, they incur expenses known as interest charges, reflecting the cost of utilizing borrowed funds. The fluctuation of interest rates impacts borrowing habits — during periods of low interest rates, loan demand rises as individuals seek affordable financial services, and conversely, when rates are high, people tend to prioritize saving over borrowing, reducing loan demand. This inverse relationship emphasizes the significance of interest rates in

shaping economic activities, especially in the banking industry. Studies by Farhan et al. (2012) and Louzis et al. (2012) have highlighted the correlation between interest rates and non-performing loans (NPLs), emphasizing how variations in interest rates affect the ability of borrowers to repay loans. High interest rates can strain borrowers financially, potentially leading to increased default rates and a surge in NPLs, as observed in research by Waweru and Kalini in 2009. Therefore, the intricate connection between interest rates and NPLs underscores the importance of monitoring and adjusting interest rates to maintain financial stability and minimize loan defaults.

2.3.2 Credit Assessment

The implementation of regular assessments to monitor the health of advances and loans by analyzing key performance indicators like profitability, activity level, and unit management, and ensuring the proper maintenance and productive use of assets created is fundamental. Credit evaluation, a vital part of credit risk management, is crucial for the fundamental quality of the credit issued. The evaluation, encompassing the five C's – character, capital, capacity, collateral, and cyclical economic component – provides a comprehensive analysis by credit officials. Establishing sound credit risk management is essential in preventing loan default. To determine solvency, individuals and organizations undergo credit assessments, commonly known as credit checks, when applying for loans or making partial payments. Analyzing the repayment capacity of debtors or contracting parties before finalizing transactions is a standard procedure. Credit checks are conducted to protect businesses and creditors from potential defaults, with credit agencies utilizing credit scores to assess the likelihood of default accurately. The accuracy and reliability of credit risk assessments are enhanced with more detailed client information available to credit bureaus. A study by Arega et al. (2016) highlights the negative association between credit evaluation and non-performing loans at the development bank of Ethiopia.

2.3.4 Credit Monitoring

In analyzing follow-up or credit monitoring, which involves bank employees scrutinizing a borrower's turnover patterns, profitability, liquidity, cash flow situation, security levels, insurance coverage, and sales trends to uphold essential ratios for timely obligation fulfilment, an essential factor highlighted by Salas and Saurina (2002) is the pivotal role of effective bank management in averting non-performing loans (NPLs). Constant vigilance by banks over borrowers substantially fortifies the security of loans, underscoring the critical

importance of banks staying attentive to their clientele to forestall any complacency in loan repayments. Furthermore, the quality of loans is believed to considerably improve through stringent monitoring and control of project performance. Credit monitoring services play a pivotal role in alerting individuals to potential fraud or changes in their creditworthiness by tracking alterations in borrower behavior. For example, these services can curtail identity theft instances, where personal data is illicitly acquired and used for nefarious activities without consent. A prime function of credit monitoring services is the prompt identification of atypical purchasing patterns that may indicate fraudulent activity, such as unauthorized credit card usage after theft, followed by immediate notification to the cardholder. It is evident that poor risk assessment practices and overlooked evaluations of asset market values and borrower creditworthiness are significant culprits in the surge of NPLs, as emphasized by Petersson (2004). A pertinent finding from Ning's (2007) study underscores the reliance of banks on individual experiences more than advanced credit portfolio management tools and comprehensive information systems when assessing loan risks. In a related vein, Arega, et al. (2016), through their research, uncovered an inverse relationship between credit monitoring activities and the incidence of non-performing loans within the Ethiopian Development Bank, underscoring the tangible benefits of vigilant credit oversight in mitigating loan defaults and safeguarding financial stability.

2.3.5 Credit Size

Large NPL ratios are a result of aggressive lending. Large amount of NPLs is a result of aggressive lending, banks' high risk appetite, and reduced integrity in credit approval. Credit expansion and NPLs are related, according to Salas and Saurina's 2002 study of Spanish banks. Keeton's (1999) study demonstrates the link between loans and rapid credit development. For the years 1982 to 1996, the author examined commercial banks in the United States using a vector auto regression model. According to empirical research, one of the factors contributing to the rise in NPLs is lax credit terms. The authors of Boudriga, Boulila, and Jellouli (2010) list a few elements that can lower NPLs.

An increase in non-performing loans (NPLs) can be attributed to the aggressive lending practices adopted by banks, stemming from their high risk appetite and a decline in the integrity of credit approval processes. This correlation between credit expansion and the rise in NPLs was highlighted in Salas and Saurina's 2002 study on Spanish banks. The size of a bank's loan portfolio, comprising loans and advances to clients, serves as a key determinant.

Research indicates that lenient credit terms contribute to the escalation of NPLs, necessitating banks to recalibrate lending requirements, enhance borrower monitoring, and potentially reduce interest rates to boost credit circulation (Keeton, 1999). Sarlija and Hare's (2012) research emphasized the swifter pace of lending operations in industrialized nations. Furthermore, a study by Arega et al. (2016) uncovered a robust association between the magnitude of credit extended and the prevalence of NPLs at the Ethiopian development bank.

A U-shaped association between problematic loans and loan growth is discovered by Kwan and Eisenbeis (1997). Low growth rates for loans have a negative impact on the quantity of defaulted loans. As loans growth rate exceeds a certain point, further loans growth adds increase impaired loans.

2.3.6 Collateral

Assets held by a bank as collateral to mitigate default risks serve as a guarantee of repayment for loans provided by borrowers. The ability of a loan to be secured by appropriate collateral is contingent upon the specific policies of the bank in question. In credit agreements, stipulations regarding collateral must detail the types deemed acceptable, procedures for assessing risk, and necessary controls. These criteria typically encompass acceptable categories of collateral, prescribed loan-to-value ratios, and methods for effectively evaluating collateral. It is essential to recognize that any decrease in the value of collateral associated with consumer loans can potentially impact their overall quality adversely (ECB, 2013).

2.4 Customers Specific Factors Affecting Non-Performing Loans

Customers-related factors, which play a significant role in how borrowers manage their loan repayments, have been extensively studied by various scholars. For instance, Brown (1998) highlighted that non-performing loans are often linked to customers' failure to disclose crucial information during the application process. Kanimbla (2010) delved into the non-performing loan factors within Standard Chartered Bank, outlining issues such as extended loan terms, borrower reluctance to repay debts, and a lack of business expertise as key causes of loan defaults. Similarly, Gaitho Edna (2010) identified specific customer-related factors contributing to non-performing loans in Kenyan banks, including clients venturing into unfamiliar business domains, managing multiple businesses concurrently, misusing loan funds, providing inaccurate collateral valuations, and encountering repayment challenges. Moreover, Kwayu (2011) dissected the reasons behind bank loan defaults in the Tanzanian

region of NBC Dodoma, pointing to borrower perceptions as a primary driver. Carlo Msigwa (2013) scrutinized non-performing loan factors within the Morogoro and Msimbazi branches of KCB Bank (Tanzania) Limited, shedding light on the industry dynamics. Further, Stephen Laurent Isaac Mwakajumilo's (2014) research into the impact of non-performing assets on Tanzania's banking sector, focusing on NMB Bank, emphasized how such assets, exacerbated by poor loan recovery practices, severely impacted the economic landscape, consumer purchasing power, and raised legal concerns.

2.4.1 Diversion of funds

Diversion of funds refers to the unauthorized or improper use of funds by individuals or entities for purposes other than the intended or designated ones. It involves the misappropriation or embezzlement of funds, where money that should be allocated for specific activities or investments is redirected for personal gain or other unauthorized uses. (Ashiq 2003, referenced in Martha, 2017).

2.4.2 Credit culture

Public education and financial sector development go hand in hand. According to a panel regression analysis of commercial banks in India that Rajan and Dhal did in 2003, credit orientation has a considerable impact on the loan default rate. According to a study by Rajan and Dhal in 2003, credit orientation has a big impact on loan default. In his study, (Wondmagegnehu, 2012) discovered that because of a lack of credit orientation and culture, borrowers engaged in businesses about which they knew little or nothing, redirected loans granted for unexpected purposes, and occasionally committed deliberate defaults.

2.5 Empirical literature review

The section presents a detailed analysis of the key causes of nonperforming loans, crucial in understanding bank failures. Scholars have conducted thorough research on these factors, emphasizing their significance. The subsection delves into global factors impacting non-performing loans, while the subsequent paragraph focuses on existing studies on the causes of non-performing loans in Africa, integrating the latest empirical data from Ethiopia.

2.5.1 Cross countries

From 1996 to 2015, Beaton et al. (2016) conducted a thorough analysis focusing on the correlation between non-performing loans (NPLs) and various factors within the Eastern Caribbean Currency Union. Their research outcomes emphasized the pivotal role of both macroeconomic aspects and bank-specific factors in influencing asset quality deterioration.

Notably, they highlighted that banks exhibiting enhanced profitability levels and lower exposure to sectors like the housing market and construction loans tend to exhibit lower levels of NPLs.

In 2017, Malimi conducted a study focusing on non-performing loans in the Tanzanian banking industry, revealing that bank-specific characteristics like capital adequacy and profitability did not influence the issue. On the other hand, the research by Ekanayake and Azeez (2015) highlighted that NPLs among Sri Lankan banks were indeed influenced by such characteristics. In a study conducted by Hassana, Ilyas, and Rehman (2015), it was found that Pakistan's non-performing loans were a direct result of bank-specific features. Furthermore, Vasiliki et al. (2014) discovered significant associations between NPL and independent variables like ROE, ROA, and CAR. Similarly, Klein's research in Central, Eastern and South-Eastern Europe (CESEE) in 2013 unveiled vital correlations between NPL and factors such as bank management, equity, and Loan to Total Asset Ratio (LAR).

In developing countries with substantial banking sectors that significantly impact the overall economy, Rachman et al. (2018) conducted a study focusing on bank-specific factors affecting loan default issues. They took into account panel data sets from 36 commercial banks listed on the Indonesian Stock Exchange between 2008 and 2015. Their analysis revealed that the amount of NPLs was negatively influenced by the profitability and credit growth of Indonesian banks, as indicated by a fixed effects panel regression model. It was also demonstrated that banks with higher profitability experience lower NPLs due to their ability to implement effective credit management procedures. Bank profitability and credit growth are key indicators for reduced NPLs, reflecting stronger credit management systems and more strategic lending practices. These findings underline the importance of maintaining profitability levels and increasing, rather than decreasing, credit supply to debtors as effective strategies to reduce loan defaults that could otherwise compromise asset quality in banks.

The research conducted by Wood et al. (2018) delved into the factors influencing Non-Performing Loans in commercial banks in Barbados. Specifically focusing on the span of 1991 to 2015, the study highlighted the pivotal role of various bank-specific factors like return on equity, return on assets, capital adequacy ratio, and loan to deposit ratio in determining non-performing loans. The findings emphasized the importance of macroeconomic elements such as GDP growth, unemployment rates, and interest rates, shedding light on their substantial impact on the observed trends.

In a study conducted in 2019 by Kumar, the relative positions of all four banking categories in Bangladesh were examined with respect to non-performing loans. The research also delved into the various reasons behind non-performing loans within the country's banking sector. Secondary data sourced from the annual reports of the Bangladesh Bank spanning from 2006 to 2017, totaling a 12-year duration, formed the basis of the study. Key study variables included Total NPL, NPL to Total Loans Ratio, and Trends of Net NPL to Total Loans Ratio. Descriptive statistics, the ANOVA test, and the Test of Homogeneity of Variances were employed in analyzing the data. The findings indicated a significant disparity in the performances of the four bank categories regarding non-performing loans, as well as the absence of homogeneity in variances of total NPL, NPL to Total Loans ratio, and Trends of Net NPL to Total Loans ratio among the banking categories.

Murthy et al., (2017) conducted a study on the factors impacting Non-Performing Loans within commercial banks, specifically focusing on Banks in Selangor. Their research utilized a quantitative approach and involved sampling 200 respondents through a stratified random sampling technique. The analysis, performed using multiple regression analysis (MRA) with SPSS software, revealed that three out of the four hypothesized relationships were supported. Notably, the findings indicated that consumers' income, the country's economy, and bank interest rates all exerted a statistically significant influence on non-performing loans in commercial banks within the state of Selangor, Malaysia. However, the evidence did not substantiate the notion that the standard of living could statistically impact non-performing loans in these banks.

Wood and Skinner (2019) conducted a study focusing on the factors that influence non-performing loans within commercial banks in Barbados. The persistence of non-performing loans in the banking sector has led to an abundance of research in this domain. This current research delves into the specific determinants affecting non-performing loans in the context of Barbadian commercial banks spanning from 1991 to 2015. The findings from the analysis shed light on the critical relationship between certain bank-specific metrics, such as return on equity, return on assets, capital adequacy ratio, and loan-to-deposit ratio, and the occurrence of non-performing loans. Moreover, the study also highlights the significant impact of various macroeconomic elements, including GDP growth, unemployment levels, and prevailing interest rates, on non-performing loans.

Long et al. (2020) looked into a research on the variables influencing Vietnam's commercial banks' non-performing loans (NPLs). The study challenge was addressed by gathering data from Vietnamese commercial banks spanning the years 2008 to 2017. Using a panel data set with 200 observations, the study compared the performance of a fixed-effects model with a random-effects model. The strongly fixed-effects model's results showed that the interest rate, capital structure, and lag of the prior year all had a favorable impact on NPLs. In addition, it was shown that NPLs were negatively impacted by loan growth, inflation, and asset returns. The effects of GDP and firm size, however, were not observed in any of the models. Based on the results, this research suggested several policy recommendations for the management of NPLs in the commercial banks.

Using a panel data set spanning nine countries in the Middle East, Southeast Asia (SEA), and South Asia between 2000 and 2014, Nor et al. (2021) looked into a study on the determinants of non-performing loans (NPLs) in Asia and tested whether those determinants affect Southeast Asia differently. The two-step System GMM findings show that, notwithstanding Southeast Asia's good management of non-performing loans during the 2008 crisis, the area is not any different from the others in terms of how GDP growth and the proportion of liquid assets to total assets impact NPLs negatively. It implies that other areas may take up the effective tactics used by the SEA nations. Apart from the above, the regulatory variables show mixed results with supervisory power significantly and positively affect the NPLs while the capital stringency requirement is insignificant, contrary to the theoretical expectations. The results are robust to model specification.

Mahyoub and Mohd (2021) conducted a study that delved into various factors impacting non-performing loans in commercial banks in Malaysia. The analysis encompassed both bank-specific factors and macroeconomic factors, utilizing panel data from fifteen commercial banks in Malaysia. The study's findings highlighted the significance of the capital adequacy ratio in influencing the level of non-performing loans in the sample banks, while the other bank-specific factors examined were deemed insignificant. Furthermore, the research concluded that despite the results related to real gross domestic products and inflation, the economic situation did not significantly affect the non-performing loans of the sample commercial banks. This underscores the questionable loan quality within the sample bank, emphasizing the crucial need for banks to concentrate deeply on maintaining high loan quality standards, aiming to generate income and mitigate adverse outcomes effectively. The study's implications extend to supervisory authorities, governments, and the banking industry,

providing valuable insights for forecasting non-performing loans and understanding the determinants that mold their levels.

Singh et al. (2021) conducted a study focusing on the impact of non-performing loans (NPL) in Nepalese conventional banks. The study targeted major commercial banks in Nepal, using data from 2015 to 2019. The author identified NPL as the dependent variable and considered Return on Asset (ROA), Capital Adequacy Ratio (CAR), Bank Size, GDP growth, and Inflation as independent/explanatory variables. Interestingly, the results highlighted a minimal impact of CAR on bank NPL, while ROA, bank size, GDP, and inflation were found to have significant effects. Importantly, contrary to most research findings indicating a negative correlation, this study demonstrated a positive and substantial influence of GDP on NPL.

Gjeç et al. (2023) use bank-level data from 42 countries, covering the years 2000 to 2017, to experimentally evaluate whether the amount of non-performing loans (NPLs) influences bank lending behavior. The analysis discovered a statistically significant negative correlation between the growth of bank loans and non-performing loans. This effect is verified for the advanced, emerging, non-EU, and EU subsamples and is not limited by geography. We also look at the ways that non-performing loans (NPLs) impact loan growth. Our findings indicate that for banks with adequate capital, the relationship between NPL and loan growth is more significant. The investigation yielded no proof that asset management firms had any impact on the inverse relationship between non-performing loans (NPLs) and loan growth.

In addition, our results are robust with respect to alternative measure of credit risk and different specifications.

A research on the variables influencing non-performing loans in state-owned banks for the years 2017–2021 was examined by Harimurti et al. (2022). Since the purpose of this research was to ascertain the impact of Return on Assets, Equity to Asset Ratio, Inflation, and Bank Size on Non-performing State-owned Banking Loans over the period of 2017–2021, it may be classified as a causal associative study. With EViews version 10, data panel analysis is used as a data processing tool in this study data analysis approach. Non-performing loans are significantly impacted negatively by return on assets. Non-performing loans are positively impacted by the equity to asset ratio, bank size, and inflation.

2.5.2 Empirical Studies in Africa

Viswanadham's (2015) investigated a study into the determinants of non-performing loans within commercial banks, particularly focusing on NBC bank in Dodoma, Tanzania. Through a combination of interview, questionnaire, and documentary evidence gathering methods, the study explored various factors such as interest rates, GDP fluctuations, lending concentration, loan supervision capacity, and overall economic conditions. The findings indicated that variables like interest rates, GDP, loan supervision capacity, and economic climate significantly impact NPL levels, while the concentration of lending activities did not show a direct correlation with increased NPLs. Highlighting the importance of implementing a robust credit process that emphasizes customer selection, risk assessment, thorough credit analysis, active monitoring, and effective recovery strategies for bad loans, the study emphasized the need for banks to establish clearer policies that promote ethical standards and enhance organizational capacity. Furthermore, the researcher recommended further exploration in the realm of non-performing loans by incorporating models related to psychological phenomena like the Golem effect, social loafing, Inverted pyramid effect, Pollyanna effect, and High default culture effect. Proposing future research directions, it was suggested to investigate the relationship between NPLs and variables such as loan size, collateral, credit culture, and credit management information systems to broaden the current understanding of NPL dynamics.

Wairimu and Gitundu (2017) conducted a research focusing on the macroeconomic factors influencing non-performing loans in Kenya. Through the utilization of a linear regression model to examine time series data spanning from 1998 to 2015, they identified the key variables impacting non-performing loan ratios. Notably, the study revealed that the unemployment rate and remittances exhibited significant statistical relevance at a confidence level of 5 percent, highlighting their crucial roles in shaping non-performing loans dynamics in the Kenyan context. Conversely, factors such as inflation rate, interest rate, GDP growth rate, public debt, and exchange rate did not show the same level of statistical significance according to the empirical findings. Therefore, the analysis ultimately concludes that remittances and the unemployment rate stand out as the primary driving forces behind the trends observed in non-performing loans within Kenya over the examined period.

Onyango and Olando (2020) conducted a study focusing on bank-specific factors influencing non-performing loans in Kenyan commercial banks. Utilizing a descriptive research approach

with the 43 licensed commercial banks as the study population, the researchers employed a census method to collect secondary data from financial statements and records spanning from 2012 to 2016. In order to evaluate the relationship between non-performing loans and various bank-related characteristics, inferential analysis was utilized to develop a study model, while quantitative analysis was used to derive descriptive statistics. The study's findings revealed that Kenyan commercial banks exhibited an average NPL level exceeding the critical 5% threshold, signaling a significant NPL challenge within the nation's banking sector. Notably, the analysis conducted at a 5% level of significance highlighted several significant relationships: interest rate spread was found to have a positive influence on NPLs, operating efficiency showed a direct correlation with NPL levels, liquidity ratio displayed a negative and weak relationship with NPLs, and return on assets was discovered to have a negative impact on NPLs among Kenyan commercial banks, which can be considered detrimental.

Abimbola (2020) conducted a study focusing on the influence of non-performing loans on bank performance in Nigeria, specifically analyzing a selection of deposit money banks. The study employed the validated ECM model by assessing residuals and least squares. Results indicated that non-performing loans significantly affected the performance of Deposit Money Banks throughout the study duration, with varying impacts observed on net interest margin and the ratio of deposits to loans. The report recommends that deposit money institutions establish a robust credit strategy encompassing elements such as flexible tenure, credit term reorganization, and conversion, to optimize performance.

Nathan et al.,(2020) conducted a study on the Determinants of Non-Performing Loans in Uganda's Commercial Banking Sector. The research involved the analysis of quarterly data spanning from 2002q1 to 2017q2. Advanced methodologies like ARDL and bounds test techniques were applied, taking into account both bank-specific and macroeconomic factors. The results of the study revealed intriguing insights; notably, non-performing loans were found to escalate with a rise in lending rates, the real effective exchange rate, and unemployment rate. Conversely, an increase in returns on assets and GDP growth rate were associated with a decrease in non-performing loans. To mitigate credit risk exposure, it is recommended that commercial banks diversify their asset portfolio by incorporating income-generating assets like government bonds and equities. Moreover, focusing on globally competitive sectors could prove advantageous for commercial banks. Implementing measures

to lower lending rates, foster GDP growth, and curb unemployment rates is imperative to effectively combat non-performing loans.

Ferreira (2022) conducted a study on determinants of non-performing loans: a panel data approach. The results obtained clearly demonstrate that bank performance, bank market conditions, and bank capital regulation are relevant to explain the evolution of non-performance loans, but the promotion of economic growth is always much more important to assure the decrease the levels of non-performing loans, preventing the losses of the banking system as well as potential financial crisis.

2.5.3 Empirical studies in Ethiopia

In the study conducted by Negera (2012) on nonperforming loans in commercial banks in Ethiopia, it was found that multiple factors contribute to loan default incidents. These factors include deficiencies in credit assessment processes, challenges in loan monitoring, a lack of a well-established credit culture, overly relaxed credit terms, aggressive lending practices, compromised integrity within the banking sector, limited institutional capacity, unfair competition among banks, deliberate defaulting by borrowers due to their limited understanding, misuse of funds for unintended purposes, and instances of over or under financing by the banks.

Tehulu and Olana's (2014) conducted a study various bank-specific factors affecting credit risk within commercial banks in Ethiopia. Their insightful analysis revealed the significance of ownership structure, operational inefficiencies, bank size, and credit growth in influencing credit risk levels. Similarly, Lelissa (2014) emphasized the importance of risk quantity and the effectiveness of risk management-related variables in explaining the prevalence of non-performing loans in Ethiopian commercial banks. By categorizing the factors influencing credit risk into quantity and quality risk variables, this study shed light on the crucial role bank size plays in impacting the credit risk within the Ethiopian banking sector. Notably, among the quality risk variables considered, bank size emerged as a particularly significant factor affecting credit risk. Furthermore, when examining quantity risk variables, strong associations were found between metrics such as loans to total assets and credit concentration with the overall credit risk profile of commercial banks in Ethiopia.

Umer (2015) investigated the factors shaping nonperforming loans in Ethiopian commercial banks over the period of 2004 to 2013. The research meticulously selected and scrutinized

seven factors impacting nonperforming loans, consisting of four macroeconomic aspects and three bank-specific variables. Through analysis of balanced fixed effect panel data, the study uncovered significant and positive correlations between deposit rate, loan to deposit ratio, and lending interest rate with nonperforming loans in banks. The findings identified lending interest rate as a pivotal predictor of non-performing loans within Ethiopia's banking landscape. Furthermore, the examination highlighted the adverse impact of cost effectiveness on nonperforming loans in banks. It also elucidated that bank solvency ratio, GDP growth rate, and inflation rate exhibited negative and statistically insignificant effects on nonperforming loans in commercial banks.

Anisa (2015) conducted investigation aimed at identifying the key factors driving nonperforming loans in commercial banks within Ethiopia. The primary goal of the study was to assess the effectiveness of common determinants of nonperforming loans in commercial banks, specifically two publicly owned and six privately owned banks. Mamuye's (2015) study titled "Determinants of Non-Performing Loans on Development Bank of Ethiopia" employed a probit model and regression analysis, revealing that factors such as under-collateralized loans, lack of proper project supervision, and insufficient risk evaluation significantly contribute to loan defaults in the banking sector.

A research conducted by Arega et al. (2016) focusing on the non-performing loans in the Central Region of the Development Bank of Ethiopia, it was highlighted that inadequate credit evaluation and monitoring are primary factors contributing to the emergence of NPLs in DBE. Factors specific to banks, such as credit size encompassing aggressive lending practices and compromised approval integrity, along with rapid credit growth and a high risk appetite, played a significant role in the escalation of nonperforming loans. Additionally, high interest rates, poorly negotiated credit terms, and lenient credit conditions further exacerbated the situation. The prolonged loan approval process also added to the challenges faced by the bank. On the customer front, NPL causes were attributed to various factors like a prevalent bad credit culture among customers, lack of expertise among borrowers for the companies they were associated with, deliberate defaulting, loan diversion, and challenges in project management.

Negalign (2019) examined a research to ascertain the factors influencing non-performing loans in the commercial banking sector, namely in the public and private banks within the study region. The main source of data for this study, which also employed a quantitative and

descriptive research strategy, was the 52 credit staff members from CBE and Dashen banks District in the Southern Region. The research indicates that banks have a particular impact on non-performing loans (NPLs) because of many factors such as their size, performance, credit size, unfavorable credit assessment, unfavorable lending conditions, lack of an operational credit recovery system, and inadequate collateral. Conversely, customer-specific variables that contributed to non-performing loans (NPLs) included the borrower's refusal to repay the loan and the customer's cash being diverted for unanticipated uses.

Million et al.(2019) conducted a comprehensive study focusing on identifying the various factors that impact credit risk within Ethiopian commercial banks. Over a 14-year period, data was collected from the audited financial records of eight prominent commercial banks; utilizing a fixed-effect ordinary least squares model for analysis. The study's significant finding established that both macroeconomic and microeconomic variables play a crucial role in influencing the extent of credit risk within the Ethiopian commercial banking industry.

Oynaka (2019) undertook a study into the various factors influencing non-performing loans within the commercial banking sector. The study employed a descriptive research design along with a quantitative research approach, utilizing data primarily gathered from 52 credit staff members from CBE and Dashen banks District in Southern Region through purposive sampling method. The findings highlighted numerous bank-specific factors such as Bank size and performance, credit size, poor credit assessment, poor credit terms, lack of aggressive credit collection system, and inadequate nature of collateral as contributors to NPLs. In addition, customer-specific factors like unwillingness of borrower to repay loans and diversion of customer funds for unexpected purposes were also identified. The study recommended that stakeholders, including banks and government, should work together to implement policies aimed at mitigating both internal and external factors leading to NPLs, thereby reducing instances of loan defaults.

Lalisho (2022) conducted a study focusing on the determinant of non-performing loans in the development bank of Ethiopia; various objectives were explored, including the identification of both bank-specific and macroeconomic factors affecting default loan performance. The study employed an explanatory design combined with a mixed research approach, utilizing secondary data sourced from the bank's annual financial performance report and the National Bank's annual report over thirty consecutive fiscal periods, spanning from 1990 to 2019. An autoregressive distributed lag (ARDL) model, or Bound Testing approach to co-integration,

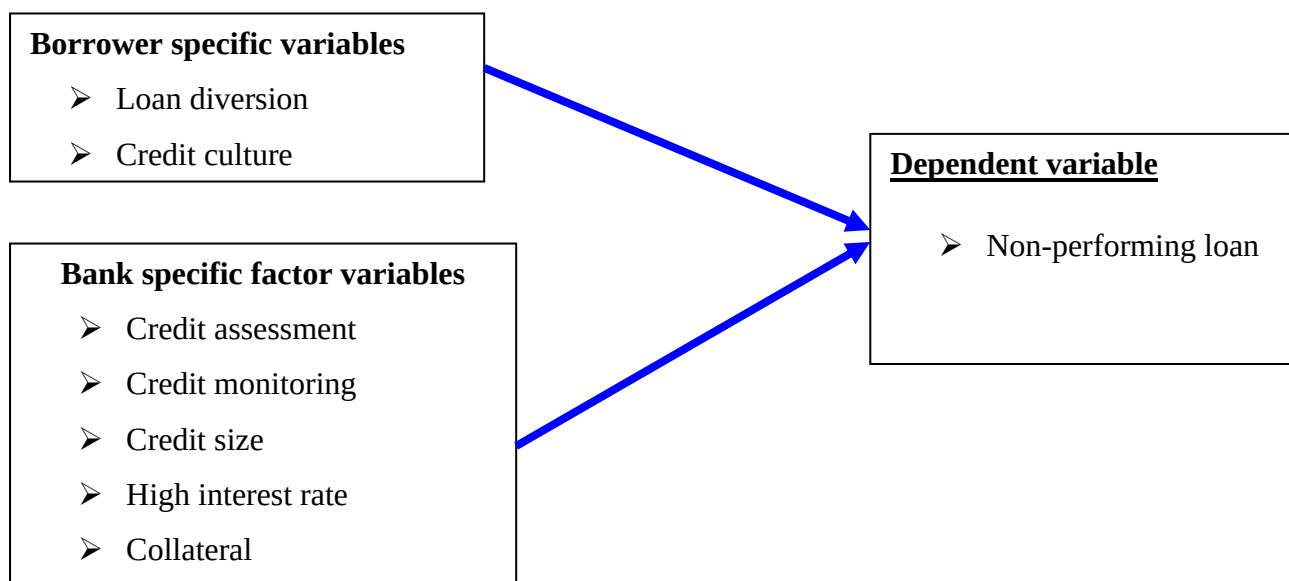
was utilized for the analysis. Results indicated a significant negative correlation between earning ability (ROA), interest rates, gross domestic products, inflation rates, and nonperforming loans within Ethiopia's development banks. Recommendations from the study emphasized the need for the Development Bank of Ethiopia to adjust its business model, refine bank credit policies in terms of appropriateness, risk management, and alignment with prevailing macroeconomic conditions. Moreover, there was a call for the regulation of government bodies' involvement in loan approval processes and execution, as well as an emphasis on minimizing project delays to enhance loan performance.

2.6 Conceptual framework

A number of factors influence if a loan is non-performing, as was stated in the section above. The paradigm is predicated on the notion that macroeconomic variables and bank-specific factors impact non-performing loans. Macroeconomic factors and bank-specific determinants of non-performing loans are found based on investment theory and related empirical investigations.

Figure 2.1: Conceptual framework

Independent variables



Source: Adopted from Arega et al. (2016), Negalign (2019) and own modification

CHAPTER THREE

METHODOLOGY OF THE STUDY

3.1 Research Approach

The proposed research were used a mixed-methods approach, incorporating both qualitative and quantitative methods. This approach is provide a comprehensive understanding of the factors affecting non-performing loans (NPLs) in the Development Bank of Ethiopia (DBE), allowing for a more robust analysis and interpretation of the research findings. Qualitative research methods was employed to gain an in-depth understanding of the factors contributing to NPLs. Quantitative research methods was utilized to analyses and measures the relationships between various factors and NPLs in the DBE.

3.2 Research Design

Research design can be considered as the structure of research it is the “Glue” that holds all of the elements in a research project together, in short it is a plan of the proposed research work. It refers to the overall strategy that you choose to integrate the different components of the study in a coherent and logical way. It is a framework or blueprint for conducting the research. In simple words it is the general plan of how you will go about your research. According to Smith (1976) – “A design is a carefully arranged scheme regarding how to conduct an experiment. The design of an experiment refers to the selection and arrangement of conditions”. According to Kothari (2004), explanatory research method is highly significant to explain the cause and effect links phenomena, which is why explanatory research is used. To determine the factors of non-Performing loans in DBE, the study was used both descriptive and explanatory research designs.

3.2 Target Population and sample size selection

3.2.1 Sampling Techniques

The study was conducted at the head office of the Development Bank of Ethiopia, where a census sampling method was employed to select loan office workers as the study participants. This meticulous approach was chosen to ensure that the study objective is met effectively. The researcher determined that utilizing census sampling was the most appropriate method for this research endeavour due to the limited size of the sample frame. By opting for census sampling, it was anticipated that gathering data directly from all loan office workers would

provide comprehensive and precise insights, as opposed to relying on a smaller subset that may not adequately represent the entire target population for generalization purposes.

3.2.2 Sample size & sampling procedure

The head office loan workers were the study's target population. As a result, the study employed a census study and all 120 of the DBE's employees in the head office as its sample.

3.2.3 Types of Data and Instruments of Data Collection

Data from both primary and secondary sources were gathered, assembled, and examined for this project. The questioner was acquired primary data in order to determine the causes of NPL and obtain information for the study's specific objectives. As a result, primary information was acquired from DBE workers. The primary source of the study is pertinent in this situation when it comes to identifying the causes of NPL in the bank. The collection of data primarily relied on two key methods: the questionnaire and the interview. In addition to these primary sources, complementary data was gathered from various secondary sources, encompassing both published and unpublished materials. These secondary sources included a wide array of documentation, such as the bank's annual, quarterly, and monthly reports, as well as comprehensive insights from credit policy and loan procedure manuals. Furthermore, valuable information was derived from NBE directives, scholarly articles, journals, and other relevant papers. This comprehensive approach to data acquisition ensured a well-rounded and in-depth analysis, leveraging both primary and supplementary sources to provide a thorough understanding of the subject matter at hand..

3.2.4 Questionnaire

The questionnaire is more than simply a list of questions or forms to be completed. When properly constructed, a questionnaire can be used as a scientific instrument to obtain data from large numbers of individuals. Construction of a useful questionnaire that minimizes interfering problems requires experience, skill, thoughtfulness, and time. A major advantage of the questionnaire is that data can be obtained on large numbers of participants quickly and relatively inexpensively. The Questionnaire is one of the most widely used techniques for gathering data in academic research, according to Walonick (1993). It offers an easy way to collect data from the entire target group. In order to collect information using both quantitative and qualitative data, a questionnaire was used. A questionnaire is a defined series of questions used to ask respondents for information. It transforms the researcher's information demands into a list of particular questions that participants are able and willing to

respond to. The variables of the study were measured using a five-point Likert scale. The researcher was chosen employee engagement as an independent variable to take into account when creating closed-ended surveys.

3.2.5 Interview

To acquire information about the study's topic, interviews are used as a tool for data collecting. Creswell (2009) proposed using an interview to gather detailed ideas and opinions from the participants. To acquire information about the study's topic, interviews are used as a tool for data collecting. Creswell (2009) proposed using an interview to gather detailed ideas and opinions from the participants. 5 authorities will afterwards be purposefully chosen for an interview.

3.3 Procedures of Data Collection

The bank employee chosen for the study was methodically surveyed and extensively interviewed in order to collect the necessary data for this research project. With meticulous care, the researcher handpicked respondents based on their relevance to the credit task area, ensuring each district was represented through a carefully devised distribution system. In a strategic move, questionnaires were methodically disseminated to the various bank districts by appointing a dedicated individual for each unit, thereby ensuring consistency and accuracy in the data collection process.

3.4 Methods of Data Analysis

The study used primary sources for data collection and internal editing to correct errors. The revised data was manually coded and entered into a computer. Quantitative analysis techniques like frequency mean, standard deviation, correlation, and multiple regressions were used. Demographic details like gender, age, marital status, educational attainment, and employment length were also considered in a descriptive analysis.

The study used statistical inference techniques to analyse hypotheses, correlated NPL variables, and performed multiple regression analyses to determine the percentage of the independent variable, specifically the chosen NPL determinant factor variable, accounting for the dependent variable, NPL, presented in tables.

3.4.1 Descriptive statistics

Through the utilization of various central tendency measurements such as frequency and frequency distribution, as well as valid & cumulative percentage calculations, and mean

comparisons, a comprehensive final report was meticulously compiled that delved into the pertinent demographic variables. Furthermore, the results were eloquently presented using tabular explanations in SPSS software, further enhancing the clarity and comprehensiveness of the findings for easy interpretation and analysis.

3.4.2 Inferential statistical Analysis

Correlation and multiple linear regression techniques were effectively used in the inferential statistical analysis by leveraging the robust capabilities of the statistics package for social sciences (SPSS) program. This involved employing these statistical tools to uncover meaningful relationships between variables and make informed conclusions. The subsequent discussion will provide a clear and detailed guide on utilizing these essential statistical methodologies and presentation techniques to enhance data analysis and decision-making processes.

3.4.3 Correlation

The term "correlation" (r) describes the extent and direction of the relationship between two variables, indicating how they move together. In statistical analysis, all variables are assessed using the Pearson product-moment correlation method when they are measured on an interval scale. The correlation coefficient " r " output always falls within a range of -1.0 to +1.0. A positive " r " value signifies a positive correlation between the variables, while a negative value indicates a lack of relationship between them. When determining the significance of correlations, a 95% confidence level must be set with an alpha value of 0.05, signifying a 5% chance of observing an erroneous correlation outcome in every 100 observations made.

3.4.4 Multiple Regression Analysis

A vital statistical method used to determine the value of an unknown variable based on known factors is multiple regression analysis. This approach encompasses constructing a detailed model and examining the interplay between various variables. In the context of this study, a model was developed employing six key parameters or predictors that play a significant role in Non-Performing Loans (NPLs). By taking into account these specific factors, the analysis aimed to provide an in-depth understanding of how these variables influence and contribute to the overall patterns observed in NPLs across DBEs.

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \beta_7 X_{7i} + \epsilon_i$$

Where Y is the dependent variable and the independent variables are those which explain the response ranges from X1 to X7.

Table 3.1: Model Specification of Variables.

No	Independent variable	Beta Coefficients (β)	Independent variable assigned by X
1	Poor credit assessment	β_1	X ₁
2	Credit monitoring	β_2	X ₂
3	Credit size	β_3	X ₃
4	Collateral	β_4	X ₄
5	High interest rate	β_5	X ₅
6	Loan diversion	β_6	X ₆
7	Credit culture	β_7	X ₇
8	Constant	β_0	1
Dependent variable			Variable assigned by Y
1	Non-performing loan		Y

3.5 Measurement Instruments

The questionnaire used in the study contains multiple components to capture a comprehensive range of data. Specifically, it incorporates Likert scale measurements for variables related to both the research objectives and the characteristics of the respondents. The respondents' demographic information, such as age, gender, educational background, organizational role, and length of professional experience, is also included in the questionnaire. The Likert scale utilized for assessing the independent and dependent variables gauges the extent of agreement on a five-point scale, spanning from strongly disagree to strongly agree. These rating scales were adapted from various scholarly sources to ensure validity and reliability in data collection.

3.6 Validity and Reliability

In examining the content and construct validity of the study, the research adviser aimed to ensure a high standard for the research design. Specifically, the content validity was assessed after a thorough examination of the appropriateness of the measuring scales and research questions. The questionnaire itself was designed to include inquiries addressing the factors relevant to quantifying NPL based on the selected independent variable. Employing a five-point scoring system, the survey also integrated one of the most widely acknowledged measures of dependability: Cronbach's alpha. This coefficient typically ranges between 0 and 1, with higher values indicating stronger internal consistency. Authors may interpret the

results differently to achieve internal reliability, with George and Mallery (2003) offering guidelines on how to evaluate reliability coefficients, emphasizing values of .9 for excellent, .8 for good, .7 for acceptable, .6 for doubtful, and .5 for poor or unacceptable reliability.

Table 3.2: Reliability Test

Variables	Reliability Statistics		
	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Credit Size	0.739	0.740	5
Credit Assessment	0.747	0.742	5
Credit Monitoring	0.762	0.785	5
High interest	0.806	0.805	4
Loan diversion	0.758	0.756	5
Collateral	.0.784	0.783	4
credit culture	0.670	0.673	4
NPL	0.752	0.751	6
Overall	0.892	0.888	38

Source: Own computation using SPSS of the survey, 2024

3.7 Ethical Issues

In order to fulfill their ethical research obligations, the researchers diligently ensured compliance with proper citation practices, rigorously followed a methodical approach to both data collection and analysis, upheld the utmost confidentiality of gathered data, and prioritized obtaining explicit agreement from the organizations as well as the staff involved in the study.

CHAPTER FOUR

RESULT AND DISCUSSION

4.1 Introduction

This section elaborates on the data obtained through analysis methods, wherein the findings have been meticulously scrutinized in alignment with the study's specific goals. Comprising three detailed sub-sections, it expounds on the general information and discoveries related to the study objectives. The survey focused on examining the influencing factors of non-performing loans, specifically through a case study conducted at the head office level of the development bank of Ethiopia. Subsequently, the analysis and interpretation of the survey data are thoroughly discussed in the subsequent section.

A total of 120 questionnaires were distributed to the respondents and from that 116 (96.6 %) questionnaires' were collected through a self-administered survey and 114 (95 %) questionnaires' were properly filled and ready for analysis, then the data were entered into SPSS.. The dataset was rechecked to ensure the accuracy of the data entry. The minimum and maximum data values on each variable related to each case were checked to detect any irregular or unusual data values.

4.2 Demographic information

The general background information of respondents like gender, age, and Education background, current position and work experience of respondents were discussed as follows. Table 4.1 shows that majority of respondents 87 (76.3%) are male and the remaining 27 (23.7%) are female which mean most of employees of DBE at head office level. This implies that both genders were involved in the study and thus the finding of the study did not suffered from gender bias. As per the table below shows age of respondents, from 114 valid responses, (59.6%) of the respondents have credit experience range of 6-10 years which is followed by 23 (20.2%) that ranges of 1-5 years and 10 (8.8 %) between 11-15 years.

Table 4.1 below shows most of employees have second degree and above which is 76 (66.7%), and 36 (31.6%) have first Degree so almost majority of the employees are highly qualified. This indicates that credit staffs of DBE at head office are highly qualified in terms of educational level.

Table 4.1: General Background Information of Respondents

No.		Item	Frequency	Percent	Cumulative Percent
1	Gender	Male	87	76.3	76.3
		Female	27	23.7	100.0
		Total	114	100.0	
2	Current Position	Loan officer	53	46.5	46.5
		Senior loan officer	54	47.4	93.9
		Team leader	7	6.1	100.0
		Total	114	100.0	
4	Credit Experience	Less than one year	9	7.9	7.9
		1 -5 years	23	20.2	28.1
		6 - 10 years	68	59.6	87.7
		11- 15 years	10	8.8	96.5
		Above 15 years	4	3.5	100.0
		Total	114	100.0	
5	Experience	1-4 years	2	1.8	1.8
		5-10 years	74	64.9	66.7
		11-15 years	21	18.4	85.1
		Above 15 years	17	14.9	100.0
		Total	114	100.0	
6	Education Level	College Diploma and Below	2	1.8	1.8
		First Degree	36	31.6	33.3
		Master Degree and above	76	66.7	100.0
		Total	114	100.0	

Source: Own computation and survey, 2024

Experience is one of the competences to understand controlling activities in organization. Experience also referred to as professional competence which comes through practice. In the literature it is indicated that commitment to this competence by employees is one part of effective control system. The results in table 4.1 indicated that 74 (64.9%) of the respondents had 5-10 years of banking experience and has got the highest number of respondents. The second larger number of respondents belonged to the category between 11-15 years of experience as their percentage was 21(18.4%). Similarly, 17(14.9%) of the respondents belonged to the category above 15 years of experience which was the third larger percent of respondents. The last category with lowest percentage 2 (1.8) % belonged to 1-4 years'

experience. This shows that respondents had vast experience in the banking service which increased the quality of the survey.

From the data presented in table 4.1, it is evident that a substantial portion of the respondents, comprising 53 individuals (46.5%), serve as loan officers, while 54 respondents (47.4%) hold senior loan officer positions. In addition, a smaller group of 7 individuals (6.1%) are identified as team leaders. The survey findings highlight that the respondents possess a high level of familiarity with credit and various credit-related activities, including an understanding of the factors contributing to Non-Performing Loans (NPLs).

4.3 Descriptive statistics for Factors of NPL

In this particular section, a comprehensive analysis has been conducted on the various factors that have an impact on non-performing loans. The main focus of the study was to identify and understand the key drivers behind non-performing loans, as demonstrated through a case study conducted on the Development Bank of Ethiopia. These factors were meticulously examined in relation to credit size, deficient credit assessment processes, ineffective credit monitoring, exorbitant interest rates, and cases of loan diversions, weak collateral strength, and the credit culture of borrowers. The study specifically addressed these factors as independent variables influencing non-performing loans while considering NPL as the dependent variable in the analysis.

4.3.1 Bank specific factors

In this study, a Likert scale, which is a commonly used psychometric tool, was employed to gauge the impact of the variable under investigation. Respondents rated the effects on a 5-point scale, ranging from 1 for strongly disagree to 5 for strongly agree. The data were analyzed by calculating the mean score. A higher mean score closer to 5 signified a greater level of agreement with the statement being assessed. Conversely, a score around 2.5 denoted uncertainty, while scores considerably below 2.5 indicated a marked disagreement with the stated propositions.

Table 4.3: Bank Specific factors

<i>Credit Size</i>	Mean	Std. Dev.
The bank have large number of borrowers	3.05	1.003
There is Aggressive lending in the bank	3.16	.974
The bank experienced high default rate	2.86	1.072

In the bank there is rapid credit growth	2.46	1.138
The Bank have great risk appetite	2.96	.872
Poor Credit Assessment		
The bank has poor credit analysis	3.20	.961
In the bank Know Your Customer (KYC) policy is strongly applicable	3.34	.988
The bank loan underwriting clear and strong	2.73	1.091
The bank assess the overall ability of borrowers for repayment	2.53	1.074
The bank considers the five 5cs during credit risk assessment	2.54	1.023
Poor Credit Monitoring		
The bank has strict monitoring procedures	3.30	1.350
The bank sets higher budget for loan monitoring and follow ups	3.60	.725
The bank follows aggressive credit monitoring to notify change to credit activity of customers	3.86	.608
The bank has good loan supervision capacity	3.82	.673
The bank primarily use loan follow up to guard against identity corruption	3.92	.518
Interest rate		
There is high lending interest rate	2.69	1.040
The bank there is high lending interest rate as compared to other banks	3.24	1.007
The bank lending interest rate increases over time	2.74	1.056
The bank charges different interest rate based on credit amount.	2.85	1.033
Poor Collateral		
The bank provides loan to customer with strong collateral	3.24	.989
The bank makes continuous follow up on the collateral	3.20	.952
The bank has good collateral estimation method	3.22	.910
The bank use similar collateral method for all business types.	3.25	.839

Source: Own computation using SPSS of the survey, 2024

The study's findings highlight several key factors that contribute to non-performing loans (NPL) under credit size within the organization. One significant factor is the large number of borrowers associated with achieving credit size at the bank (Mean = 3.05, SD = 1.003). Moreover, the presence of aggressive lending practices (Mean = 3.16, SD = 0.974) and a high default rate (Mean = 2.86, SD = 1.072) further accentuate the NPL risk. Additionally, the rapid credit growth observed within the bank (Mean = 2.46, SD = 1.138) plays a crucial role

in this scenario. Notably, the findings also suggest that the bank's substantial risk appetite (Mean = 2.96, SD = 0.872) is another pivotal factor contributing to NPL concerns under the credit size framework in the organization.

As illustrated in the table above regarding the attainment of credit assessment within the organization, it is noteworthy that the bank exhibits poor credit analysis capabilities, as evidenced by a mean score of 3.20 with a standard deviation of 0.961. Furthermore, the bank strongly emphasizes the implementation of Know Your Customer (KYC) policies, as reflected by a mean score of 3.34 with a standard deviation of 0.988. Additionally, the bank's approach to loan underwriting is characterized by clarity and robustness, albeit with a mean score of 2.73 and a standard deviation of 1.091. The bank's evaluation of borrowers' repayment potential, indicated by a mean score of 2.53 and a standard deviation of 1.074, is a crucial aspect of their credit assessment process. Moreover, the bank diligently considers the Five Cs - character, capacity, capital, collateral, and conditions - as part of their credit risk assessment practices, with a mean score of 2.54 and a standard deviation of 1.023. These factors collectively underscore the significance of addressing non-performing loans (NPL) stemming from subpar credit assessments within the organization.

One of the crucial aspects impacting credit monitoring within the organization is the bank's failure to implement strict monitoring procedures, as evidenced by a mean score of 3.30 with a standard deviation of 1.350. Additionally, the bank tends to allocate a lower budget for loan monitoring and follow-up activities, scoring an average of 3.6 with a standard deviation of 0.725. Moreover, the lack of aggressive credit monitoring practices to alert customers about changes in their credit activities, which scored an average of 3.86 with a standard deviation of 0.608, further exacerbates the issue. The bank's limited capacity for loan supervision, reflected in a mean score of 3.82 and a standard deviation of 0.673, contributes significantly to the challenges. Furthermore, inadequate utilization of loan follow-up processes to safeguard against identity theft, scoring an average of 3.92 with a standard deviation of 0.518, emerges as another key factor driving non-performing loans (NPL) due to subpar credit monitoring practices in the organization.

As per the table 4.3 the study finding shows that related to interest, There is high lending interest rate (Mean = 2.69, SD = 1.040), The bank there is high lending interest rate as compared to other banks (Mean = 3.24, SD = 1.007), The bank lending interest rate increases over time (Mean = 2.74, SD = 1.056) and The bank charges different interest rate based on

credit amount (Mean = 2.85, SD = 1.033) are important factors of NPL under interest rate in the organization.

In the context of poor collateral factors, it is crucial to consider various aspects that contribute to non-performing loans (NPL) within the organization. When the bank provides loans to customers with inadequate collateral, instances where the bank is unable to seize the collateral to recover its losses, fails to maintain consistent follow-up procedures regarding the collateral, and utilizes a flawed collateral estimation method all play significant roles. These factors, characterized by means ranging from 3.20 to 3.25 and standard deviations between 0.839 and 0.989, underscore the importance of addressing shortcomings in collateral management to mitigate the risk of NPL associated with poor collateral in the banking operations.

4.3.2 Borrower specific factors

In the study, researchers utilized a Likert scale that had five points to assess the variable's impacts. Respondents were asked to rate their agreement levels, with 1 indicating strong disagreement and 5 representing strong agreement. The mean score of the responses was calculated to analyze the data. Generally, scores closer to 5 signified a high level of agreement with the statement, while scores closer to 2.5 suggested uncertainties. On the other hand, scores significantly below 2.5 indicated strong disagreement with the statements presented. This method provided valuable insights into the participants' perceptions and attitudes towards the variables under consideration.

Table 4.4: Borrower specific factors

Loan diversion	Mean	Std. Deviation
The bank borrowers divert their credit to other business	3.12	.822
In the bank there is ignorance of lending terms and conditions	3.16	.888
The bank borrower because of over financing divert their credit to other business	3.52	.914
The bank borrower because of under financing divert their credit to other business	3.68	.865
The bank borrowers divert their credit because of anticipate of windfall profits in other business areas	3.92	.518

Borrower's credit culture		
In the bank there is good borrower's orientation/culture	2.83	1.080
The culture of the borrowers in the bank increased over time	2.98	1.064
The bank borrowers has good Society's cultural development	2.96	1.124
Borrowers don't understand credit terms well	3.08	.988

Source: Own computation using SPSS of the survey, 2024

In the context of loan diversion as a phenomenon linked to borrower-specific factors, various dynamics come into play. Firstly, borrowers within the bank may divert their credit to alternative business ventures, driven possibly by a lack of awareness regarding the specific terms and conditions of their lending agreements. This ignorance, indicated by a mean of 3.16 and a standard deviation of 0.888, showcases a prevalent issue. Moreover, over-financing situations among bank borrowers, represented by a mean of 3.52 and a standard deviation of 0.914, can lead to credit diversion. Similarly, under-financing scenarios, scored at a mean of 3.86 with a standard deviation of 0.865, also contribute to this trend. Interestingly, the anticipation of windfall profits in other business domains serves as another driving factor, reflected in a mean of 3.92 and a standard deviation of 0.518. These factors collectively underpin the phenomenon of Non-Performing Loans (NPL) within the realm of loan diversion.

In terms of the Borrower's credit culture within borrower specific factors, there is a noticeable positive trend in the bank's orientation towards borrowers (Mean = 2.83, SD = 1.08). Furthermore, the cultural development of borrowers within the bank has shown a consistent improvement over time (Mean = 2.98, SD = 1.064). Additionally, the bank's borrowers exhibit a strong societal cultural influence (Mean = 2.96, SD = 1.124). However, one area of concern lies in the borrowers' comprehension of credit terms, which tends to be lacking (Mean = 3.08, SD = 0.988), contributing significantly to non-performing loans (NPL) through loan diversion.

4.4 Descriptive statistics for Non-performing Loan

In the research study, NPL was defined as the dependent variable by presenting various statements to participants regarding the NPL within their organization. To gauge the impact of this variable, a Likert scale measuring effects on a scale of 5 points was utilized, with 1 indicating strong disagreement and 5 representing strong agreement. The mean score was then calculated for analysis. The proximity of the mean score to 5 indicated a higher level of

agreement with the statements, while a score around 2.5 signaled uncertainty and scores significantly below 2.5 suggested strong disagreements with the statements provided.

Table 4.5: NPL

Statements	Mean	Std. Dev.
The collection of loan performance is very low in the organization	2.88	1.057
The current non- performing loan amount and NPLs ratio of organization is critical.	2.82	1.001
The collection of loan is low as compared to the previous year.	3.13	.982
The collection of loan in the organization is low as compared to the total loan collection.	3.17	1.030
NPL in the organization will expect to reduce in the future.	3.18	.965
The rise of NPL affects profitability or financial position and going concern of the organization.	3.50	.895

Source: Own computation using SPSS of the survey, 2024

The study's findings pertaining to Non-Performing Loans (NPL) show that the organization has significantly low loan performance collection rates (Mean = 2.88, SD = 1.057). It is critical to note that the current amount of non-performing loans and the NPL ratio within the organization is concerning (Mean = 2.82, SD = 1.001). Furthermore, the collection of loans has decreased compared to the previous year (Mean = 3.13, SD = 0.982), highlighting a worrisome trend. Additionally, the loan collection in the organization remains low in relation to the total loan collection (Mean = 3.17, SD = 1.033). These aspects are considered the most crucial components contributing to NPL in the organization. Looking ahead, the study predicts a potential reduction in NPL within the organization (Mean = 3.18, SD = 0.965), which is promising for future financial health. However, it is essential to recognize that the increase in NPL negatively impacts profitability and the organization's overall financial stability and continuity (Mean = 3.50, SD = 0.895). These factors must be carefully monitored and managed to ensure sustained operational success.

4.5 Summary of descriptive statistics for the variables

As illustrated in the table provided below, the statistical analysis encompasses various independent variables such as credit size, credit assessment, credit monitoring, high interest, loan diversion, collateral strength, and borrower's credit culture, with NPL acting as the dependent variable, representing non-performing loans. The data presented reveals that poor

monitoring exhibited the highest mean score of 3.69, closely trailed by loan diversion at an average of 3.11, while poor assessment showed a comparatively lower mean score of 2.86. Focusing on the dependent variable, NPL emerged with the highest mean score of 3.15 among all factors considered. It is essential to comprehend these results thoroughly to understand the relationship between the independent variables and NPL, as they shed light on crucial aspects of credit management and risk assessment.

Table 4.6: Descriptive statistics

Descriptive Statistics			
	N	Mean	Std. Deviation
Assessment	114	2.8690	.72544
Credit size	114	2.8982	.71060
Monitoring	114	3.6982	.46715
Interest rate	114	2.8794	.82228
Diversion	114	3.1158	.62790
Collateral	114	3.2281	.71994
Credit culture	114	2.9627	.75495
NPL	114	3.1564	.82228

Source: Own computation and survey, 2024

4.6 Correlation analysis

To establish the correlation between the independent variables, such as the size of credit, poor credit evaluation, inadequate credit monitoring, high interest rates, diversion of loans, weak collateral strength, and borrower's credit culture, and the occurrence of non-performing loans, a Pearson correlation was calculated as part of the study's methodology. The primary objective was to illustrate the extent of correlation between each independent variable and the dependent variable using specific criteria. Correlation, which is a statistical technique used to evaluate the strength of the relationship between two variables, is quantified through a correlation coefficient that ranges from +1 to -1. A correlation coefficient near ± 1 signifies a perfect level of association between the variables, whereas a value closer to 0 indicates a weakening relationship (Cohen & West, 2003). Through the application of Pearson's correlation coefficient analysis, the researcher gained deeper insights into whether there existed a positive correlation, negative correlation, or no correlation between the dependent variable and the independent variables. This analytical approach allowed an in-depth assessment of the strength and direction of the relationship among the variables through the utilization of Pearson's correlation coefficient. Furthermore, it played a crucial role in

identifying any substantial relationships between the independent variables and the dependent variable within the scope of the study.

Table 4.7: Correlation matrix of NPL and independent variables

Correlations									
	NPL		Asses sment	Creditsi ze	Monit oring	Intere strate	Diversi on	Collater al	Creditcultu re
NPL	R	1							
	Sig.								
Assess ment	R	.649**	1						
	Sig.	.000							
Credits ize	R	.514**	.664**	1					
	Sig.	.000	.000						
Monito ring	R	.225*	.108	.033	1				
	Sig.	.016	.253	.731					
Interes trate	R	.555**	.567**	.550**	-.013	1			
	Sig.	.000	.000	.000	.894				
Diversi on	R	.463**	.475**	.519**	-.042	.596**	1		
	Sig.	.000	.000	.000	.661	.000			
Collate ral	R	.582**	.568**	.648**	.072	.536**	.603**	1	
	Sig.	.000	.000	.000	.445	.000	.000		
Creditc ulture	R	.199*	.196*	.162	.098	.154	.216*	.256**	1
	Sig.	.034	.037	.085	.298	.102	.021	.006	
**. Correlation is significant at the 0.01 level (2-tailed).									
*. Correlation is significant at the 0.05 level (2-tailed).									

Source: Own computation and survey, 2024

Upon careful observation of the Pearson correlation table, it is clear that Non-performing loan exhibits the most significant correlation with various factors. These factors include poor credit assessment, weak collateral strength, high interest rates, credit size, loan diversion, deficient credit monitoring practices, and the borrower's credit culture, each showing a distinctive relationship with Non-performing loan.

Correlation analysis between poor credit assessment and non-performing loans

The research study employed a Pearson correlation analysis to examine the connection between poor credit assessment and non-performing loans. The resulting data, displayed in Table 4.7, illustrates a significant and significant positive correlation between the two factors.

This correlation, quantified by a coefficient of 0.649 and a p-value of 0.00, indicates a direct relationship between poor credit assessment and non-performing loans.

Correlation analysis between poor collateral strength and non-performing loans

In order to assess the relationship between poor collateral and Non-performing loans, a thorough Pearson correlation analysis was conducted. The results of this analysis can be observed in the provided table 4.7. Notably, the data in the table illustrates a strong and statistically significant positive correlation between these two variables ($r=0.514$, $p=0.00$), indicating a clear relationship between poor collateral and non-performing loans.

Correlation analysis between high interest rate and non-performing loans

The Pearson correlation analysis, a statistical method used to assess the relationship between variables, was applied in this study to examine the association between high interest rates and non-performing loans. The results obtained from the analysis are presented in table 4.7, revealing a robust and statistically significant positive correlation ($r=0.555$, $p = 0.00$) between high interest rates and non-performing loans, indicating a strong positive relationship between the two financial factors.

Correlation analysis between credit size and non-performing loans

In conducting the analysis, a Pearson correlation test was carried out to assess the link between credit size and Non-performing loans. The results of this examination, documented in table 4.7, reveal a notable positive correlation between the two variables. Specifically, the data indicates a strong relationship between credit size and non-performing loans, showing a positive association ($r=0.514$ with $p = 0.00$).

Correlation analysis between loan diversion and non-performing loans

A Pearson correlation examination was conducted, analyzing the relationship between loan diversion and Non-performing loans. The outcomes of the correlation analysis between these factors are clearly presented in Table 4.7. It is evident from the data provided in the aforementioned table that there is a significant and positive correlation of 0.463 between loan diversion and non-performing loans. This indicates a strong positive relationship between the two variables, with statistical significance at $p = 0.00$.

Correlation analysis between poor credit monitoring and non-performing loans

An examination using Pearson correlation was conducted to evaluate the relationship between poor credit monitoring practices and the incidence of non-performing loans. The outcomes of the correlation between these factors, as presented in the aforementioned table 4.7, reveal a significant association. Specifically, the table demonstrates a notable positive relationship ($r=0.226$ with $p = 0.00$) between poor credit monitoring oversight and non-performing loans. This suggests that inadequate credit monitoring practices are linked to higher instances of non-performing loans.

Correlation analysis between borrower's credit culture and non-performing loans

The Pearson correlation examination was carried out to ascertain the extent of association between the borrower's credit culture and the occurrence of non-performing loans. The correlation analysis findings presented in table 4.7 indicate a weak and statistically insignificant negative correlation between the borrower's credit culture and non-performing loans. This suggests a minimal adverse relationship between the two factors, with a correlation coefficient (r) of 0.013 and a p -value of 0.119.

4.7 Regression Analysis

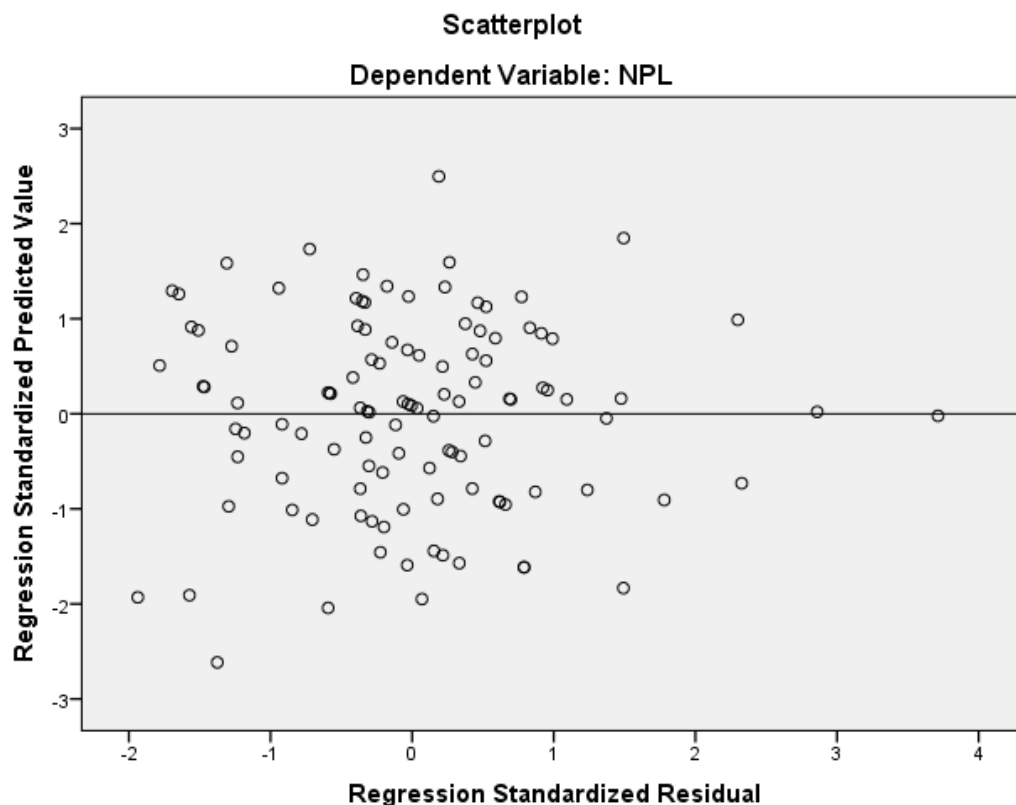
Regression analysis is a fundamental statistical method that plays a crucial role in estimating the relationships between dependent and independent variables. By assessing the strength of these relationships, it enables researchers to evaluate the extent to which changes in the independent variables impact the dependent variable, holding other factors constant. In essence, regression analysis provides a means to identify and understand the variables that significantly influence outcomes. Despite the various types of regression analysis available, they all share the common goal of examining how one or more independent variables affect a dependent variable.

4.7.1 Diagnostic Tests

In analyzing the Classical linear regression model, various assumptions and requirements were tested to ensure the validity of the results. These included checking for homoscedasticity, autocorrelation, Multicollinearity, and normality. The findings and implications of these assessments are detailed in the following discussions, shedding light on the robustness and reliability of the regression analysis conducted.

4.7.1.1 Homoscedasticity Test

Heteroscedasticity arises when there is non-constant error variance present in the data set. This means that the variance of the dependent variable's observed values around the regression line is not uniform. In simpler terms, each data point of the dependent variable originates from a distinct conditional probability distribution, each with its unique conditional variance (Bedru and Seid, 2005). To ascertain whether the assumption of variance homogeneity holds, researchers typically examine scatter plots of residuals against predicted values. An absence of any discernible pattern in these plots would imply that the assumption is upheld. Conversely, the presence of, for instance, a staircase-like pattern in such a plot would signal the presence of Heteroscedasticity, indicates a departure from the assumption of variance homogeneity.



Source: Own computation, survey 2024

Figure 4.1: Homoscedasticity Test

4.7.1.2 Autocorrelation Test

According to Gujarati (2004), the Durbin Watson test is widely recognized as the most reliable method for detecting serial correlation in a dataset. The Durbin Watson statistic ranges from 0 to 4, inclusive, with a value close to 2 indicating the absence of

autocorrelation. In our study, the computed “d” value was 2.064, which aligns closely with this threshold and suggests that no autocorrelation issues are present. Therefore, this finding implies that the error terms are not correlated across different observations in our analysis, further reinforcing the reliability of our results. The Durbin-Watson statistic, a measure of autocorrelation, is around 2 with an accepted range between 1.50 and 2.50. From the table below, it shows that the computed Durbin-Watson value is 2.064, indicating minimal autocorrelation concern in the model analysis.

Table 4.8: Autocorrelation Test

Model Summary^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.822 ^a	.676	.655	.42062	2.064
a. Predictors: (Constant), Creditculture, Monitoring, Interestrate, Creditsize, Diversion, Assessment, Collateral					
b. Dependent Variable: NPL					

Source: Own computation, survey 2024

4.7.1.3 Multicollinearity Test

Multi-collinearity, a common issue faced in regression analysis, arises when one independent variable exhibits a high correlation with a combination of other independent variables. To identify this problem, researchers commonly use the Variance Inflation Factor (VIF) values for predictors. VIF quantifies how much the variance of the estimated regression coefficient is affected by correlated predictor variables in the model. Scholars like Musiega et al. (2013) suggest a rule of thumb where VIF exceeding 10 indicates significant correlation. However, in the current analysis, all VIF values are under 10, indicating no multi-collinearity issues. Understanding and addressing multi-collinearity is crucial, as it can cause regression coefficients to fluctuate between samples, thereby complicating the interpretation of variable. According to Gujarati (2004), perfect Collinearity occurs when one explanatory variable exhibits an exact linear relationship with another, rendering the model unable to be estimated and failing to satisfy OLS properties. To address this issue, the usage of the Variance Inflation Factor (VIF) and tolerance level (TOL) aids in measuring the presence of Collinearity or Multicollinearity within the model. The multiple regression analysis revealed in table 4.9 shows that all tolerance values exceed the critical threshold of 0.1, while the Variance Inflation Factor (VIF) remains below 10. These findings indicate a lack of multicollinearity issues among the variables under study.

Table 4.9: Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Assessment	.479	2.086
	Creditsize	.435	2.300
	Monitoring	.961	1.041
	Interestrates	.515	1.942
	Diversion	.520	1.924
	Collateral	.455	2.200
	Creditculture	.917	1.090

Source: Own computation and survey, 2024

4.7.1.4 Normality Test

Based on the classical linear regression model (CLRM), one key assumption is that the residual part of the model follows a normal distribution. Despite this, OLS estimators, as highlighted by Gujarati (2004), remain Best Linear Unbiased Estimators (BLUE) regardless of the distribution of disturbances. These disturbances are assumed to be independently and identically distributed with a mean of zero and constant variance, while the explanatory variables are consistent across samples. In the case of normally distributed residuals, the OLS coefficient estimators tend toward asymptotic normality with means equivalent to their respective coefficients (β 's). By examining the histogram of residuals, we can assess the degree of normality in the data. The histogram presented in the figure depicts a relatively normal distribution, although the variables appear to exhibit a positive skewness trend that approximates a normal distribution. This assessment leads to the confirmation that the assumption of normality in residuals is met, allowing researchers to conclude that the analysis of the explanatory variable presents a normal distribution, as initially anticipated. Normality can be evaluated through normal probability plots, where data points form a linear pattern, indicating consistency with a normal distribution.

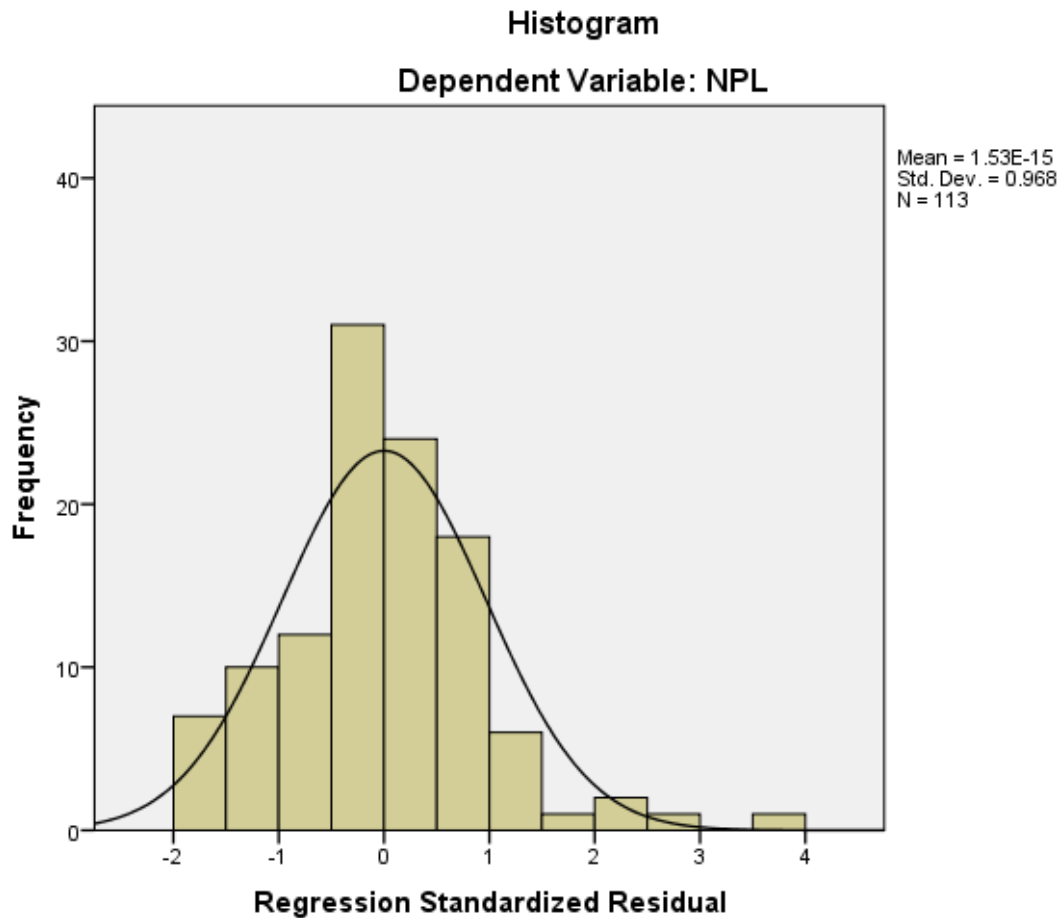


Figure 4.2: Normality Test

4.7.1.5 Test of linearity

According to Civelek (2018), when conducting multiple regression analysis, it is important to assume that there are linear relationships between latent variables as well as between observed and latent variables. The assumption is that the relationship between the independent variables and the dependent variable can be represented by a straight line, indicating linearity. This can be confirmed by generating scatter plots to visualize the connections between each independent and dependent variable. In Figure 4.3 below, it is evident that the relationship between the dependent and independent variables follows a linear pattern, thus indicating there are no issues with linearity in the data set utilized for this study.

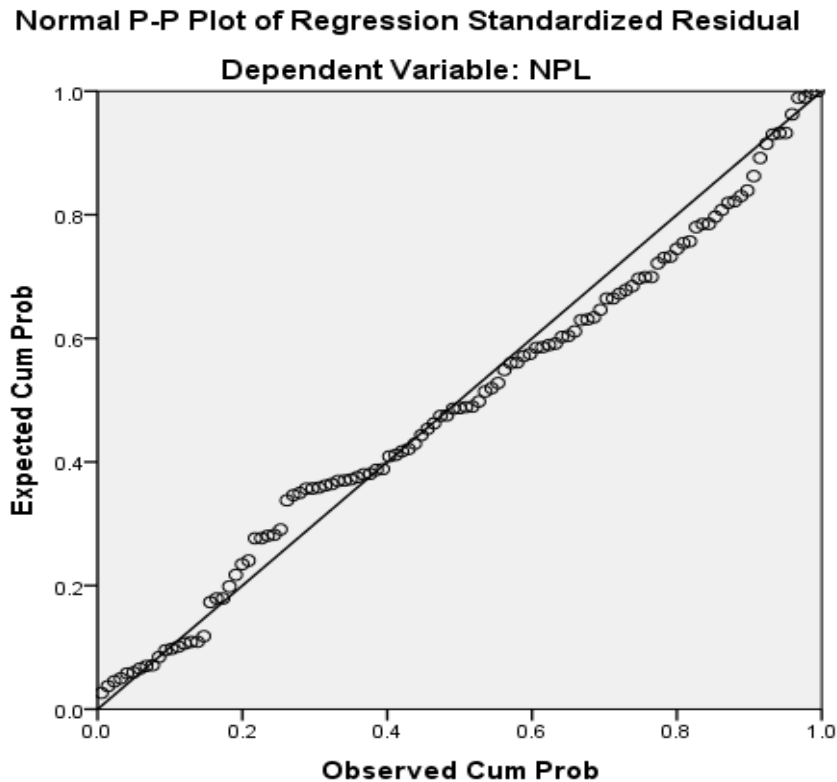


Figure 4.3: Linearity test

4.7.2 Regression result and discussion

The next section, the results of regression analysis will be thoroughly presented. The primary focus will be on assessing the significance level of how bank-specific factors and borrower/customer factors impact NPL. Through the application of multiple linear regression analysis, various components such as model summaries, ANOVA, and beta coefficients have been carefully examined in order to develop a robust regression model.

Model Summary

According to Brooks (2008), goodness of fit statistics is designed to indicate how effectively the model, incorporating the explanatory variables, can account for the variations observed in the dependent variable. As reflected in Table 4.10, the adjusted R-Squared (coefficient of determination) value of 0.676 highlights that the model explains 67.6% of the variance in NPLs of DBE. This suggests that credit size, poor credit assessment, poor credit monitoring, high interest, loan diversion, poor collateral strength, and borrower's credit culture collectively contribute to explaining the majority of the variance. However, the remaining 32.4% change in NPLs of DBE is attributed to factors not considered in this study.

Additionally, the adjusted R-Squared value serves as an indicator of the overall model fit, revealing that the model utilized in this study demonstrates good statistical adequacy according to the R-Squared value analysis.

Table 4. 10: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.822 ^a	.676	.655	.42062
a. Predictors: (Constant), Credit culture, Monitoring, Interest rate, Credit size, Diversion, Assessment, Collateral				

ANOVA test

The results from the F-statistic, which examines the combined influence of all explanatory variables on the dependent variable, also assess the model's adequacy, typically recommended to be above 5. Illustrating this point, in Table 4.11, the F-Statistics value of 31.32 validates the model's suitability for estimation. Similarly, the attached p-value of zero to the test statistic indicates the rejection of the null hypothesis that all slope parameters are jointly zero even at a 1 percent level of significance. Furthermore, according to the regression results in Table 4.5, the p-value for the F statistic is less than .05, signifying that at least one independent variable significantly predicts NPL. Consequently, it can be inferred that all independent variables utilized in this study collectively serve as effective predictors of NPL in DBE.

Table 4.11: ANOVA table

ANOVA^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38.794	7	5.542	31.325	.000 ^b
	Residual	18.577	105	.177		
	Total	57.371	112			
a. Dependent Variable: NPL						
b. Predictors: (Constant), Credit culture, Monitoring, Interest rate, Credit size, Diversion, Assessment, Collateral						

Source: Own computation, survey 2024

Table 4.12: Regression output

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.735	.390		-1.884	.062
	Assessment	.162	.079	.164	2.050	.043
	Credit size	.181	.085	.179	2.122	.036
	Monitoring	.235	.087	.153	2.701	.008
	Interest rate	.186	.067	.215	2.779	.006
	Diversion	.106	.088	.093	1.207	.230
	Collateral	.300	.082	.302	3.669	.000
	Credit culture	.054	.055	.057	.991	.324
a. Dependent Variable: NPL						

Source: Own computation, survey 2024

The standardized coefficients in regression analysis play a crucial role in revealing the importance of explanatory variables. These coefficients, derived after normalizing all factors, provide insights into the impact each variable has on the outcome. For example, in Table 4.12, poor collateral emerges with the highest standardized coefficient, indicating its significant influence on NPL. Following closely are credit size, poor credit assessment, poor credit monitoring, high interest rates, loan diversion, poor collateral strength, and borrower's credit culture. The ascending order of these coefficients highlights how each factor contributes to the non-performing loans, with higher coefficients signaling more substantial impacts on the outcome.

To evaluate how the independent variable influences non-performing loans (NPL), the study employs multiple regressions as the statistical model. This method enables a comparison of the predictive abilities of different independent variables and facilitates the identification of the optimal combination of variables for forecasting a dependent variable. Specifically, by analyzing the Unstandardized Coefficients provided in Table 4.12, the research formulates a regression equation to capture the relationship.

The study thoroughly examined the relationship between Non-Performing Loans (NPL) and various independent variables such as a borrower's poor credit rating, inadequate collateral strength, high interest rates, credit size, and diversion of funds, deficient credit supervision, and the overall credit culture amongst borrowers.

Unstandardized Beta Coefficient (β): As detailed in chapter three, the unstandardized coefficients, represented by β_1 through β_7 , play a crucial role as they are the coefficients of the estimated regression model. Consequently, when incorporating the error term (ϵ), the formulation of the model addressing NPL can be expressed comprehensively in line with statistical analysis methodologies;

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \beta_7 X_{7i} + \epsilon_i$$

$$\hat{Y}_i = -0.735 + 0.162X_{1i} + 0.181X_{2i} + 0.235X_{3i} + 0.186X_{4i} + 0.106X_{5i} + 0.300X_{6i} + 0.054X_{7i}$$

The intercept (β_0) represents the regression line's intersection with the Y axis. This value, set at -0.735, indicates that the predicted NPL is expected to reach -0.735 units if all seven explanatory variables are at zero.

Five variables were identified as having a statistically significant impact on non-performing loans (NPL). These variables include poor credit assessment, poor collateral strength, high interest rates, credit size, and inadequate credit monitoring. Conversely, loan diversion and borrower's credit culture were found to have an insignificant effect.

4.8 Discussion of the Regression Result

The effect of credit assessment on NPL

The beta (B) coefficient value for Poor credit assessment is 0.162 with a significance level of $p < 0.01$, indicating that for every one-unit increase in Poor credit assessment, NPL at DBE is expected to increase by 0.162 units. Additionally, the $p < 0.05$ significance level shows that Poor credit assessment is statistically significant at the 1% level, leading to the conclusion that there is a positive significant relationship between Poor credit assessment and NPL. Credit evaluation is considered the most important measure to ensure the overall quality of the credit being provided. It is a fundamental aspect of credit risk management, as noted by Cade (1999). Inadequate credit assessment can lead to an increase in non-performing loans (NPLs) due to a lack of proper evaluation of borrowers' repayment capacity and asset market values when granting loans. This study's results further support the findings of previous

researchers such as Petersson (2004), Ning (2007), Arega (2016), Wondimagegnehu (2012), and Negalign (2019).

The effect of credit size on NPL

As illustrated in Table 4.14, the beta (B) value for credit size stands at 0.181, while the corresponding p value is less than 0.01. This indicates that a unit increase in credit size can lead to a rise of 0.181 units in NBL at DBE. Furthermore, the significance level of $p < 0.05$ affirms that credit size bears importance at the 1% level. In conclusion, there exists a substantial relationship between credit size and NPL. Excessive lending practices along with high risk-taking behaviors by banks, coupled with compromised integrity in credit approval processes, result in a substantial increase in NPL as stated by Salas and Saurina (2002). This study's findings diverge from the perspectives of Keeton (1999), Boudriga, Boulila, & Jellouli (2009), and Negalign (2019) regarding borrower culture and credit monitoring.

The effect of credit monitoring on NPL

In Table 4.14, the beta (B) value for credit size is 0.235, along with a statistically significant p value of less than 0.01. This means that a 1 unit increase in Poor credit monitoring correspondingly increases NPL at DBE by 0.235 units. Moreover, the p value being less than 0.05 indicates that Poor credit monitoring is indeed significant at the 1% level of significance, supporting the conclusion that there is a substantial relationship between Poor credit monitoring and NPL. The relationship is not as positive as expected. Credit monitoring, which entails bank officers scrutinizing the borrower's financial activities such as revenue, profit, liquidity, cash position, provided security, and micro credit scope, is essential for borrowers to fulfill their obligations in a timely manner. This research aligns with the conclusions reached by Agresti et al. (2008), Wondimagegnehu (2012), Arega (2016), and Negalign (2019).

The effect of high Interest rate on NPL

Based on the regression results presented in Model Table 4.12, where the interest rate coefficient is statistically significant at 1% level with a positive value of 0.186, it is evident that as interest rates increase, NPL levels also rise. Consequently, the research findings challenge the commonly held belief that high interest rates have a negative impact on NPL. This study aligns with the conclusions drawn by Stiglitz and Weiss (1981) and contributes to

the ongoing discourse on the positive correlation between NPL and high interest rates. Various researchers have explored this relationship, with some, including Stiglitz and Weiss (1981), supporting the idea that high interest rates are associated with an increase in bad loans. The positive link between NPL and high interest rates is robust, reflecting the expected pattern where low interest rates correspond to lower NPL levels and vice versa with high interest rates leading to a rise in NPL.

The effect of collateral on NPL

The beta (B) value for weak collateral in Table 4.14 is 0.3, and the corresponding p value is less than 0.01. This means that, on average, a 1 unit increase in weak collateral will lead to a 0.3 unit increase in NPL at DBE. Moreover, the significance level of weak collateral, indicated by $p < 0.05$, underscores its importance at the 1% level of significance. Consequently, we can confidently state that weak collateral exhibits a significant relationship with NPL. The beta (B) value for weak collateral in Table 4.14 is 0.3 with a p-value of less than 0.01, indicating that a one-unit increase in weak collateral will, on average, lead to a 0.3 unit increase in NPL at DBE. This significance at the 1% level implies the importance of weak collateral in loan default risk. The presence of collateral in loans acts as a safeguard against default, as loans provided without sufficient collateral protection pose higher deflation risks. This aligns with the findings of previous studies by Wondimagegnehu (2012), Arega (2016), and Mamuye (2015), supporting the notion that collateral plays a crucial role in loan default scenarios.

The effect of loan diversion on NPL

According to the regression output in model table 4.12, the coefficient for loan diversion is 0.106, a positive value that lacks statistical significance on NPL. This implies that with other variables held constant, a one-unit increase in loan diversion results in a 0.106-unit rise in NPL. Consequently, the research does not accept the null hypothesis suggesting that loan diversion has no substantial negative impact on NPL. In fact, the findings provide compelling evidence supporting a positive link between NPL and loan diversion, aligning with the anticipated positive relationship. Fund diversion, defined as the unauthorized use of borrowed funds contrary to their designated purpose as evidenced by Ashiq (2003), is a critical concept to consider in this context.

The effect of borrower credit culture on NPL

In the regression output of model table 4.12 provided above, it shows that the coefficient of borrower credit culture is calculated at 0.054. This coefficient is negative and does not demonstrate a statistically significant impact on NPL. More specifically, the interpretation reveals that with all other explanatory variables being constant, an increase of one unit in borrower credit culture leads to a reduction of 0.054 units in the level of NPL. Accordingly, the study was unable to reject the null hypothesis, indicating that borrower credit culture's influence on NPL is not negative and significant. This conclusion is supported by sufficient evidence showing the inverse association between NPL and borrower credit culture, as anticipated. Moreover, it is important to note that a correlation between NPL and borrower credit culture is observed, a relationship that aligns with expectations. Additionally, it is worth mentioning that the issue of fund diversion arises when borrowed funds are utilized for purposes other than intended, a point highlighted by Ashiq (2003).

4.9 Result of Interview questions

In addition to utilizing questionnaires for data collection, interviews were conducted with two senior team leaders from the organization to gather further insights. Through these interviews, the main factors affecting loans were uncovered. The team leaders highlighted issues such as project revenue diversion, seasonal market fluctuations, complete default risks, raw material scarcity, foreign currency challenges, unstable country markets, inflation rates, inadequate supervision, customer knowledge gaps, unsecured loans, and negligence from related parties. Furthermore, specific to the bank, respondents identified factors contributing to bad loans in the DBE. These factors included the lack of expert empowerment, incompetence, insufficiently conducted KYC reviews, short project timelines, inadequate follow-up processes, customers' reluctance to provide accurate product information, reselling of purchased raw materials, and insufficient working capital investments.

In addition to bank-specific factors, respondents were keen to explore borrower-specific reasons for the prevalence of bad loans in DBE. The responses indicated a range of issues, such as lack of commitment towards the projects, misappropriation of project revenue, inadequate project management, disinterest in loan repayment, limited market knowledge among borrowers about their specific programs, and a lack of proper tracking mechanisms to monitor progress effectively.

In the realm of measuring NPL, survey participants were asked with detailing the strategies implemented within their respective organizations to enhance the efficacy of debt recovery. The survey findings shed light on various methods utilized for this purpose, including reminders, vigilant monitoring, frequent communication, periodic loan renewals, as well as timely follow-ups on outstanding obligations in alignment with due dates or loan maturity. Failure to adhere to payment terms could result in the transfer of delinquent accounts to relevant authorities for foreclosure actions, thus establishing a foundation for the Letter of Credit framework.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

In this chapter, the summary of the study findings and results is presented. It outlines the key findings and results, from which conclusions are derived and recommendations are proposed. The recommendations encompass various interventions aimed at enhancing credit quality within the Development Bank of Ethiopia, while also providing implications for future research studies.

5.1 Summary of Findings

The primary objective of the study conducted on the Development Bank of Ethiopia was to investigate the various underlying factors influencing Non-Performing Loans (NPL). To achieve this objective, the research employed explanatory research designs, integrating both quantitative and qualitative data collection methods. The study heavily relied on primary data sources, specifically gathered through the distribution of questionnaires and conducting interviews with the bank's employees. Notably, the study encompassed the involvement of the entire employee population of 120 in a census-type research approach, where 114 responses were received. The gathered data was meticulously analyzed through the utilization of descriptive and inferential statistics via the Statistical Package for the Social Sciences (SPSS), supported by qualitative analysis techniques.

In the context of the analysis, it's noteworthy that 76.3% of the total respondents are male, and a significant 66.7% hold Master's degrees, indicating a prevalence of male participants and a high level of educational attainment among the respondent group.

Before proceeding with the primary analysis of the study, a crucial step was taken to ensure the questionnaire's reliability. The reliability test results, as detailed in Table 3.2, confirmed the high level of reliability, with all quartets demonstrating acceptability and yielding a reliable total Cronbach's alpha score of 0.892.

Non-Performing Loans (NPL) are loans that have not been paid, with delinquency exceeding the 90-day mark after the maturity date. They signify loans or advances where the credit quality has declined to the extent that the principal and interest payments cannot be retrieved as per the loan terms. These NPLs are troubling for DBE since its asset quality, indicated by the rising bad debt ratio, is deteriorating rapidly, presenting significant hurdles to its survival.

The results derived from the Pearson coefficient highlight the positive relationships between all seven factors and NPL, ranging from 0.649 to 0.199. The findings of the multiple regression analysis are notable, revealing that 67.6% of NPL volatility can be attributed to the explanatory variables employed in the analysis, with an R-squared of 0.676 and an adjusted R-squared of 0.655. The significance of the F-statistic is evident, being 31.32 and below the threshold of $p < 0.05$, indicating the model's significance. The standardized coefficient of poor collateral stands out as the highest, closely followed by credit size, poor credit monitoring, poor credit assessment, loan diversion, and credit culture two to seven, in respective order. The emphasis lies on understanding that the larger the standardized coefficient, the greater the impact of the factors on NPL.

5.2 Conclusions

When a bank disburses a loan, the possibility of non-collection can arise due to various factors, leading to the categorization of such loans as NPLs. It is crucial to recognize that credit provision is a primary service offered by all commercial banks, with bank lending serving as their fundamental function. The success of a banker is often equated with their effectiveness as a lender, underscoring the importance of sound lending practices that prioritize safety, liquidity, efficient fund utilization, profitability, and diversified investment strategies for the benefit of both the bank and its customers.

Non-performing loans (NPLs) are a significant challenge that demands thorough consideration. The classification of a loan as non-performing occurs when there is a delay or cessation in repayments for a specified period. This study aimed to analyze the various factors influencing NPLs specifically within the Development Bank of Ethiopia. To address this overarching goal, three specific research questions were formulated and addressed.

In the model, various regression assumptions have been considered, including tests for multicollinearity, autocorrelation, normality, and heteroscedasticity. Notably, the ANOVA test results indicate that both the R and R² values are statistically significant, underscoring the global significance of the model. Through a comprehensive analysis of seven independent variables, it was revealed that five variables, specifically poor credit rating, strong low collateral, high interest rates, credit size, and poor credit, exert a positive and statistically significant influence on bad debt. Monitor while the other variable has negligible impact on NPL, i.e. loan diversion and credit culture.

Bank specific factors of NPL in development bank of Ethiopia were analyzed and all bank specific factors of NPL have significantly and positively affect NPL in development bank of Ethiopia. On the basis of this the study concluded that bank specific factors are the most important factors for NPL. In addition, borrower specific factors of NPL in development bank of Ethiopia were analyzed in this study and both factors that mean loan diversion and credit culture were insignificant effect on NPL.

This research study has examined the factors that contribute to NPL within the Development Bank of Ethiopia (DBE). Through an in-depth analysis of the data and regression analysis, several key findings have emerged regarding the underlying causes of NPL. The following conclusions can be drawn:

- The research findings indicate that a poor credit assessment significantly increases the likelihood of NPL in the DBE. Borrowers with a history of default or a weak credit profile pose a higher risk of non-payment.
- The study reveals that inadequate collateral or weak collateral valuation practices contribute to the occurrence of NPL. When borrowers are unable to provide sufficient collateral to secure their loans, the risk of default increases.
- The research findings indicate that high interest rates imposed by the DBE can strain borrowers' repayment capacity and increase the likelihood of NPL.
- The study investigates that the size of the credit provided by the DBE can influence the occurrence of NPL. Large credit sizes may pose higher risks, especially when borrowers lack the capacity to manage and repay substantial amounts.
- Implementing prudent credit size limits and conducting thorough assessments of borrowers' repayment capabilities are essential to mitigate the impact of credit size on NPL.

5.3 Policy recommendations

- Strengthening the credit evaluation process and implementing stringent criteria for loan approval are crucial to mitigate the impact of poor credit assessment on NPL.
- Enhancing collateral assessment mechanisms and ensuring effective management of collateral assets can help minimize the impact of poor collateral strength on bad debt.
- To ensure effective monitoring, it is recommended that management should ensure that credit offices of the branch should be adequately resourced in terms of staff, vehicles and other logistics, to support monitoring activities. It enables the lender assesses borrowers'

current financial conditions, ensure the adequacy of collaterals, ensure that loans are in compliance with the terms and conditions of the facility, and identify potential problem loans for action to be taken.

- Loans granted to customers should be evaluated to ascertain the adequacy of the collateral provided, emphasizing the importance of robust legal documentation. By fortifying these measures, financial institutions can proactively mitigate potential problem loans, thereby curbing any adverse impact on their financial standings stemming from bad debt provisions.
- It is imperative for DBE to establish a good credit process that includes customer screening, thorough credit assessments, stringent approval procedures, vigilant monitoring, proactive follow-up, and structured recovery plans for delinquent loans.
- The DBE higher management team needs to devote sufficient focus to analyzing the influences of both bank-specific and borrower-specific factors on the non-performing loans (NPLs) in the priority sector of business loans. It is crucial for them to establish sound prudential credit policies and procedures to mitigate the detrimental effects of these NPLs effectively.
- The bank should conduct a comprehensive KYC assessment to thoroughly understand their customers. This entails verifying the borrowers' integrity and assessing their credit worthiness to ensure responsible lending practices.
- The Bank should implement strong collateral evaluation and fully secured for the amount of loan financed to the borrower
- The Bank should switch from aggressive and unhealthy lending that leads to occurrence of large NPL ratio.

5.4 Recommendation for Further study

This study focused on examining the bank and borrower-specific factors contributing to nonperforming loans at DBE. However, numerous variables were excluded from the analysis. Therefore, future researchers might consider validating the results' consistency and supplementing the study with additional factors, such as macroeconomic and external variables, to provide a more comprehensive analysis of nonperforming loans.

Reference

- Abimbola, E., 2020. Impact of Non-Performing Loan on Bank Performance in Nigeria A Case Study of Selected Deposit Money Banks. *Journal of Business & Economic Policy*, 4(7).
- Agić Z., & Jeremić Z. (2018). Macroeconomic and specific banking determinants of nonperforming loans in Bosnia and Herzegovina. *Industrija*, 46(1), 45-60. doi:10.5937/industrija46-14956
- Ahmed, A. (2018). Analyzing the Cause of Failure of Projects Financed by Development Bank of Ethiopia (Doctoral dissertation, st. Mary's University).
- Ansia, U. (2015). *Determinant of non-performing loan in case of commercial bank of Ethiopia*.
- Arega Seyoum, Hanna Nigusse, Tadele Tesfaye (2016). Factors Affecting Non-Performing Loans: Case Study on Development Bank of Ethiopia Central Region. *International Journal of Scientific and Research Publications*, Volume 6, Issue 5, May 2016 656 ISSN 2250-3153
- Auronen, L. (2003). Asymmetric information: theory and applications. In *Seminar in Strategy and International Business*.
- Bagehot, Walter, (1962). *Lombard Street, Homewood*; IL: Richard D. Irwin. Reprint of the
- Bangagnan, E. D. Y. (2021). Specific Factors Affecting Nonperforming Loans from Banks in Member Countries of the Economic and Monetary Community of Central Africa (CEMAC). *Modern Economy*, 12, 1782-1794. <https://doi.org/10.4236/me.2021.1212091>
- Bank for International Settlements. (2004). *International convergence of capital measurement and capital standards. The basel committee on banking supervision*. Retrieved March 10, 2020, from <https://www.bis.org/publ/bcbs107.pdf>
- Basel Committee on Banking Supervision, (2016). Prudential treatment of problem assets - definitions of non-performing exposures and forbearance. Bank for International Settlements.
- Beaton, M. K., Myrvoda, M. A., & Thompson, S. (2016). *Non-performing loans in the ECCU: Determinants and macroeconomic impact*. International Monetary Fund.

- Boudriga, A., Taktak, N. B., & Jellouli, S. (2010, September). Bank specific, business and institutional environment determinants of banks nonperforming loans: evidence from mena countries. In *Economic research forum, working paper* (Vol. 547, pp. 1-28).
- Brown Bridge, M. (1998) .Financial Distress in Local Banks in Kenya, Uganda and Zambia: Causes and Implications for Regulatory Policy. *Development Policy Review Journal*, Vol. 16 No.2, pp.173-89.
- Chinweoke, N., Onyidikachi, M., and Elizabeth, N. (2014). Financial intermediation and economic growth in Nigeria (1992 – 2011). *The Macrotheme Review* 3(6), Summer 2014.
- Cooper, D. & Schindler, P., 2003, '*Business Research Methods*' (8th Ed.). Boston: MA: McGraw Hill
- Creswell, J. W., & Zhang, W. (2009). The application of mixed methods designs to trauma research. *Journal of Traumatic Stress: Official publication of the international society for traumatic stress studies*, 22(6), 612-621.
- Curak, M., Pepur, S., & Poposki, K. (2013). Determinants of non-performing loans—evidence from Southeastern European banking systems. *Banks & bank systems*, (8, Iss. 1), 45-53.
- Dawood, S., Austin, L., & Cristofanilli, M. (2014). Cancer stem cells: implications for cancer therapy. *Oncology (Williston Park)*, 28(12), 1101-7.v
- Ekanayake, E. M. N. N. & Azeez, A. A. (2015). [18] Analysis on Influence of Bank Specific Factors on Non-Performing Loans among Commercial Banks in Kenya.
- Eniafe, A. (2020). Impact of Non-Performing Loan on Bank Performance in Nigeria. A Case Study of Selected Deposit Money Banks. *Journal of Business & Economic Policy* Vol, 7.
- Ferreira, C. (2022). Determinants of non-performing loans: A panel data approach. *International Advances in Economic Research*, 28(3), 133-153.
- Financial institutions frequently engage in market share-conquest efforts during times of economic expansion while neglecting to do the appropriate credit quality assessments of borrowers (Fernandez De Lis et al., 2000).
- Gaitho, E. W. (2010). *A survey of the causes of non-performing loans of Commercial banks in Kenya* (Doctoral dissertation).
- George and Mallery (2003) offer the following general guidelines for evaluating reliability coefficients

- Ghasemi, A. & Rostami, M. (2016). Determinants of interest rate spread in banking industry. *Ecoforum*, 5(1), 320-331.
- Ghosh, A. (2015). Banking-industry specific and regional economic determinants of non-performing loans: Evidence from US states. *Journal of financial stability*, 20, 93–104.
- Gjeçi, A., Marinč, M., & Rant, V. (2023). Non-performing loans and bank lending behaviour. *Risk Management*, 25(1), 7.
- Gnawali, A. (2018). Non-performing asset and its effects on profitability of Nepalese commercial banks. *National Journal of Arts, Commerce & Scientific Research Review*, 5(9), 39–47. <http://www.ijrbasm.org/papers/v5-i9/5.pdf>
- Gujarati, D. (2004), *Basic Econometric*. 4th edition. USA: McGrawHill Incorporation.
- Harimurti, C., Pandoyo, P., & Sofyan, M. (2022). FACTORS AFFECTING NON-PERFORMING LOANS IN STATE-OWNED BANKING. *International Journal of Economics, Business and Accounting Research (IJEBAR)*, 6(2), 1292-1299.
- Harimurti, C., Pandoyo, P., & Sofyan, M. (2022). Factors Affecting Non-Performing Loans In State-Owned Banking. *International Journal of Economics, Business and Accounting Research (IJEBAR)*, 6(2), 1292-1299.
- Hassan, H. I. lyas, M. & Rehman, C. A. (2015). Quantitative [26]study on bank specific and social factors on non-performing loans in Pakistan Banking Sector. *International Letters of Social and Humaities*, 43, 192 - 203.
- Holger M. Mueller (2008), Bank capital structure and credit decisions, University of Frankfurt (IMFS), p. 295–314. *J. Financial Intermediation*.
- Keeton, W. R. (1999). Does faster loan growth lead to higher loan losses?. *Economic review- Federal reserve bank of Kansas City*, 84(2), 57.
- Klein, N. (2013). *Non-Performing Loans in CESEE: Determinants and Impact on Macroeconomic Performance/ IMF Working Paper*, WP/13/72.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.
- Kwan, S., & Eisenbeis, R. A. (1997). Bank risk, capitalization, and operating efficiency. *Journal of financial services research*, 12(2), 117-131.
- Lemma-Lalisho, D. (2022). Determinant of non-performing loan in Development Bank of Ethiopia. *Revista De Investigaciones Universidad Del Quindío*, 34(1), 52-69.

- Long, V. M., Yen, N. T., & Long, P. D. (2020). Factors affecting Non-Performing Loans (NPLs) of banks: The case of Vietnam. *Ho Chi Minh City Open University Journal of Science-Economics and Business Administration*, 10(2), 83-93.
- Louzis, D. P., & Vouldis, A. T. (2012). A methodology for constructing a financial systemic stress index: An application to Greece. *Economic Modelling*, 29(4), 1228-1241.
- Mahyoub, M., Mohd Said, R. (2021). Factors influencing non-performing loans: empirical evidence from commercial banks in Malaysia. *Research Journal of Business and Management (RJBM)*, Vol.8(3), 160-166.
- Malimi, K. (2017). The influence of capital adequacy, [39]profitability, and loan growth on non-performing loans a case of Tanzanian Banking Sector. *International Journal of Economics, Business and Management Studies*, 4(1), 38-49.
- Mamuye, A. (2015). *Determinants of Non performing loans: case study on Development Bank of Ethiopia*. McGraw-Hill/Irwin.
- Mishkin, F. S., & Eakins, S. G. (2012). *Financial Markets and Institutions* (7th ed.). USA: Pearson Education Limited.
- Mohamed, S., Hamid, M. A. A., Hosin, H., & Isa, M. A. M. (2021). Non-performing Loans Issues in Malaysian Banking Industry. *International Journal of Academic Research in Business and Social Sciences*, 11(3), 877-891.
- Nathan, S., Ibrahim, M., & Tom, M. (2020). Determinants of non-performing loans in Uganda's commercial banking sector. *African Journal of Economic Review*, 8(1), 26-47.
- Negalign nigatu (2019) factor affecting non-performing loan in commercial bank sector, research jornal of finance and accounting, vol.10, no 3,2019.
- Negera, W. (2012). Determinants of non performing loans the case of Ethiopian banks. *Unpublished Research Report, Graduate School of Business Leadership University of South Africa*.
- Nor, A. M., Ismail, S., & Abd Rahman, N. H. (2021). Determinants of non-performing loans in Asia: is Southeast Asia different?. *International Journal of Business and Society*, 22(1), 431-442.
- Onyango, W. A., & Olando, C. O. (2020). Analysis on Influence of Bank Specific Factors on Non-Performing Loans among Commercial Banks in Kenya.

- Oynaka, N. N. (2019). Factors Affecting Non-Performing Loans in Commercial Banking Sector: A Comparative Study of Public and Private Banks A Case Study of Commercial Bank of Ethiopia and Dashen Bank District in Southern Region of Ethiopia. *Research Journal of Finance and Accounting*, 10(3), 50-61.
- Pagaon, M., & Jappelli, T. (1993). Information sharing in credit markets. *The Journal of Finance*, 48(5), 1693-1718.
- Petersson, J., & Wadman, I. (2004). Non Performing Loans-the markets of Italy and Sweden.
- Petkovski, M., K Josevski, J. (2014). Does Banking Sector Development Promote Economic Growth? An Empirical Analysis for Selected Countries in Central and South Eastern Europe. *Economic Research*, 27(1), 55-66. doi:10.1 080/1331677X.2014.947107.
- Prawira, R., & Wiryono, S. K. (2020). Determinants of non-performing loans in state-owned banks. *Jurnal Akuntansi dan Auditing Indonesia*, 159-166.
- Rachman, R. A., Kadarusman, Y. B., Anggriono, K., & Setiadi, R. (2018). Bank-specific factors affecting non-performing loans in developing countries: Case study of Indonesia. *The Journal of Asian Finance, Economics and Business*, 5(2), 35-42.
- Rajan, R., & Dhal, S. C. (2003). Non-performing loans and terms of credit of public sector banks in India: An empirical assessment. *Reserve Bank of India Occasional Papers*, 24(3), 81-121.
- Rajaraman, I and Vasishtha, G (2002).Non performing loans of PSU Banks: Some panel results. *Economic and Political Weekly*, 429 – 435.
- Rajha, K.S. (2016). Determinants of non-performing loans: Evidence from the Jordanian banking sector. *Journal of Finance and Bank Management*, 4(1), 125-136.
- Richard, E. (2010). Factors that cause non-performing loans in commercial banks in
- Rose PS. 2002: *Commercial Bank Management*, 5 th edition. New York: McGraw-Hill/Irwin.
- Salas, V., & Saurina, J. (2002). Credit risk in two institutional regimes: Spanish commercial and savings banks. *Journal of financial services research*, 22(3), 203-224.
- Šarlija, N., & Harc, M. (2012). The impact of liquidity on the capital structure: a case study of Croatian firms. *Business Systems Research*, 3(1), 30-36.
- Saunders A & Cornett MM. 2003: *Financial Institution Management*, 4 th edition. New York:
- SINGH, S. K., BASUKI, B., & SETIAWAN, R. (2021). The Effect of Non-Performing Loan on Profitability: Empirical Evidence from Nepalese Commercial Banks. *The Journal of Asian Finance, Economics and Business*, 8(4), 709-716.

- Stijepović, R. (2014). Recovery and Reduction of Non-Performing Loans Podgorica Approach. *Journal of Central Banking Theory and Practice*, 3(3): 101-108. doi: 10.2478/jcbtp-2014-0017.
- Strischek, D. 2000. 'The quotable five C's', *Journal of Lending and Credit Risk Management*, 82 (7): 47-49.
- Tanzania and strategies to resolve them. *Moving Africa Toward Sustainable*
- Tehulu, T. A., & Olana, D. R. (2014). Bank-specific determinants of credit risk: Empirical evidence from Ethiopian banks. *Research journal of finance and accounting*, 5(7), 80-85.
- Tole, M. G., Jabir, M. S., & Wolde, H. A. (2019). Determinates of credit risk in Ethiopian commercial banks.
- Vasiliki, M. Athanasios, T. & Athanasios, B. (2014): Determinants of nonperforming loans: The Case of Eurozone. *Panoeconomicus*, 2, 193-206.
- Viswanadham, N. & Nahid, B. (2015). Determinants of Non-Performing Loans in Commercial Banks: A Study of NBC Bank Dodoma Tanzania, *International Journal of Finance & Banking Studies* Vol 4, No 1, 2015 ISSN: 2147-4486.
- Wairimu, M. M. & Gitundu, E. W. (2017). Macroeconomic Determinants of Non-Performing Loans in Kenya. *Research Journal of Finance and Accounting*, 8(4), 97–105.
- Walonick D (1993). *StatPac Gold IV: Survey and Marketing Research Edition*. Minneapolis. MN: StatPac Inc.
- Waweru, N.M. & Kalani, V. M. 2009, Commercial banking crises in Kenya: causes and remedies, *African Journal of Accounting, Economic Economics, Finance and banking research*, 4(4): 12-32.
- Wood, A., & Skinner, N. (2018). Determinants of non-performing loans: evidence from commercial banks in Barbados. *The Business & Management Review*, 9(3), 44-64.
- Zikmund, W. G., D'Alessandro, S., Winzar, H., Lowe, B., & Babin, B. (2014). *Marketing research*. Sydney: Cengage Learning.

Appendix



Addis Ababa University College of Business and Economics (COBE) MBA in financial Services program

Structured questionnaire

Dear Respondent,

My name is **Mingizem Belete**, I am attending Masters of Business Administration (MBA) at Addis Ababa University. I am conducting a research on the title “Factors Affecting Non-Performing Loans: Case study on Development Bank of Ethiopia” as a partial fulfilment of the requirements for the Masters in Masters of Business Administration (MBA), at Addis Ababa University, College of Business and Economics.

This questionnaire is designed to collect data on Factors Affecting Non-Performing Loans: Case study on Development Bank of Ethiopia. The data to be collected through the questionnaire is highly valuable to meet the objectives of this study. Therefore, you are kindly requested to fill in and return the questionnaire. The information you supply would be used for academic purpose only and will be kept confidential.

Thank you in advance for your cooperation!

For further information

Name: Mingizem Belete

Phone No: +251911342388

Gmail: minebelete34@gmail.com

Questionnaires

Part I: Background Information

1. Please indicate your gender

A. Male ☐

B. Female ☐

2. Your current position in DBE

A. Loan Officer/senior officer ☐

D. Credit process manager ☐

B. Appraisal officer ☐

C. Rehabilitation officer ☐

Other, please specify _____

3. Indicate your work experience in DBE

A. 1-4 years ☐

C. 11-15 years ☐

B. 5-10 years ☐

E. Above 15 years ☐

4. Indicate your Education background

A. College Diploma and below ☐

C. Master Degree and above ☐

B. First Degree ☐

5. Indicate your work experience in bank credit processes

A. Less than 1 year ☐

C. 6-10 years ☐

B. 1-5 years ☐

D. 11-15 years ☐

E. above 15 years ☐

Part Two: Questions on the Determinants of Non-Performing Loan

Please indicate the extent to which you agree or disagree with the Question in Table given below regarding about issues related to the main factors that intend you to resign or switch to new job. Where 5 = Strongly Agree; 4 = Agree; 3= Neutral; 2 = Disagree; 1= Strongly Disagree.

No	A. Factors Indicating Credit Size and Related Factors	1	2	3	4	5
1	The bank have large number of borrowers					
2	There is Aggressive lending in the bank					
3	The bank experienced high default rate					
4	In the bank there is rapid credit growth					
5	The Bank have great risk appetite					
	B. Factors Indicating Credit Assessment and Related Factors	1	2	3	4	5
1	The bank has poor credit analysis					

2	In the bank Know Your Customer (KYC) policy is not strongly applicable					
3	The bank loan underwriting not clear and strong					
4	The bank not assess the overall ability of borrowers for repayment					
5	The bank always not considers the five 5cs during credit risk assessment					
	C. Credit Monitoring and Related Factors	1	2	3	4	5
1	The bank has no strict monitoring procedures					
2	The bank sets low budget for loan monitoring and follow ups					
3	The bank not follows aggressive credit monitoring to notify change to credit activity of customers					
4	The bank has not good loan supervision capacity					
5	The bank not primarily use loan follow up to guard against identity corruption					
	D. High interest rate and Related Factors	1	2	3	4	5
1	There is high lending interest rate					
2	The bank there is high lending interest rate as compared to other banks					
3	The bank lending interest rate increases over time					
4	The bank charges different interest rate based on credit amount.					
	E. Loan diversion and Related Factors	1	2	3	4	5
1	The bank borrowers divert their credit to other business					
2	In the bank there is ignorance of lending terms and conditions					
3	The bank borrower because of over financing divert their credit to other business					
4	The bank borrower because of under financing divert their credit to other business					
5	The bank borrowers divert their credit because of anticipate of windfall profits in other business areas					
	F. Poor Collateral and Related Factors	1	2	3	4	5
1	The bank provides loan to customer with poor collateral					
2	The bank cannot seize the collateral to recoup its losses					
3	The bank not makes continuous follow up on the collateral					

4	The bank has poor collateral estimation method					
5	In the bank there is residential(housing) collateral					
6	The bank use similar collateral method for all business types.					
	<i>G. Borrower's credit culture and Related Factors</i>	1	2	3	4	5
1	In the bank there is good borrower's orientation/culture					
2	The culture of the borrowers in the bank increased over time					
3	The bank borrowers has good Society's cultural development					
4	Borrowers don't understand credit terms well					

H. Questions related to NPL collection

Please state your level of opinion for the NPL in the organization by using the following rating scales: Please tick and fill in the blanks if you select others. Each scale represents the following rating:

1 = strongly disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = strongly agree

	<i>Items</i>	1	2	3	4	5
1	The collection of loan performance is very low in the organization					
2	The current non- performing loan amount and NPLs ratio of organization is critical.					
3	The collection of loan is low as compared to the previous year.					
4	The collection of loan in the organization is low as compared to the total loan collection.					
5	NPL in the organization will expect to reduce in the future.					
6	The rise of NPL affects profitability or financial position and going concern of the organization.					

Structured Interview questions only for the Manager and Team manager of DBE

Part II: Interview

1. In your organization what are the major factors that affect loan collection performance?

2. What Bank specific factors do you think are causing the occurrence of non-performing loan in DBE?

3. What Borrowers specific factors do you think are causing the occurrence of non-performing loan in DBE?

4. What kinds of measure were applied in your organization to improve loan collection performance?

5. Any other comments or suggestions or ideas you may have with regard to the Bank's NPLs
