**ST.MARRY'S UNIVERSITY**

# Factors Affecting Effectiveness of Credit Risk Management System in Ethiopian Commercial Banks

**A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY, SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ACCOUNTING AND FINANCE**

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February, 2021

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# DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Mr Mohammed Seid (Assistant Professor). All sources of materials used for this thesis have been dually acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institutions for the purpose of any degree.

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# ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

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# Acronyms

**NBE:** National Bank of Ethiopia

**SPSS:** Statistical Package for Social Science

**NPL:** Non Performing Loan

**CBE:** Commercial Bank of Ethiopia

**S.C:** Share Company

**VIF:** Variance Inflation Factor

## Abstract

*The main objective of this study is to examine the factors affecting effectiveness of credit risk management in commercial banks. To identify the major factors and the degree of the impact, this study used both descriptive and multiple regressions. According to the descriptive statistics analysis result, most of the respondents are not satisfied that the credit information, credit disbursement and credit approval process in a banking business, while they are agreed that monitoring and follow up was appropriately implemented. Pearson correlation coefficient reveals significant correlation coefficient of the factors with the effectiveness of credit risk management system. Moreover, the result of the multiple regression show that the factors has an effect on the effectiveness of credit risk management system that is credit information, credit approval, credit disbursement and monitoring and follow up has a positive and significant effect. Based on the study findings, the researcher forwarded recommendation that commercial banks should give high emphasis on the credit information, credit approval, credit disbursement and monitoring and follow up process in order to attain the effectiveness of credit risk management system.*

**Key Words:** ***Credit Risk Management, Multiple Regressions, Correlation,***

# CHAPTER ONE

# 1. INTRODUCTION

## 1.1 Back ground of the study

Credit creation is a major source of income for banks. The loan portfolio is usually the largest asset and the main source of income for banks (Achou and Tenguh 2008). Among the risks that banks face, credit risk is one of the major concerns of many banking authorities and bank regulators. This is because credit risk is the risk that can arise and lead to bank failure (Conford, 2000).

Credit lending poses significant risks for both the borrower and the borrower. Risk of a business partner who does not fulfill his or her obligation by agreement on a specified date or at any time thereafter may jeopardize the smooth running of the banking business. On the other hand, a bank with a high credit risk is at risk of collapsing, putting investors at risk. Thus, the effective management of credit risk banks not only supports the performance and profitability of their business but also contributes to the systematic stability and efficient allocation of key economic resources (Tsolas and Margaritis, 2010).

In the context of the banking industry, credit management is concerned with functions such as grant acceptance, loan testing, loan approval, monitoring, and obtaining non-performing loans (Shekhar, 1985). In this regard, Banks consider multiple considerations as a feature of debt management, which helps to reduce the risk of non-payment leading to financial hardship and liquidity. This is due to the fact that while lending banks are at risk of interest and principal repayments, they need to be properly managed to achieve the required level of credit growth and performance.

Bank credit risk management measures can be affected internally and externally. Government policy, infrastructure services, inflation, global economic crises, social culture and international economic standards are some of the external factors that can affect the practice of commercial banking disaster risk management, on the other hand, poor credit rating, bad credit approval process, lack of debt management tools, lack of resources, lack of effective credit guidance and insufficient work are some of the factors that determine the risk management of credit risk management in commercial banks (Yuqi Li, 2006).

Since exposure to credit risk continues to be the leading source of problems in banks Worldwide, Ethiopian commercial banks were also experiencing such kind of risks. Thus, Banks should now have a keen awareness of the need to identify measure, monitor and control major credit risk factors before the bank incurred to risks. Therefore, this research aims to assess factors that affect the effectiveness of credit risk management in Ethiopian banking industry.

## 1.2 Statement of the Problem

The purpose of credit management is to maximize the performance of the asset and the reduction of non-performing assets and to ensure the correct point of the loan and its continuity and good governance. Total success in debt management depends on banking credit policy, credit portfolio, monitoring, supervision and tracking of loans and transfers. Continuous monitoring, monitoring and tracking are essential for ensuring timely payment and automatic reduction (Rana, 2013).

Adequate financial management of financial institutions is essential to the survival and growth of financial institutions. In the case of banks, the problem of debt management is of particular concern due to the high levels of perceived risks arising from some of the customer characteristics, business conditions, and economic environment in which they find themselves (Shaik, 2003).

Many scholars such as Caprio and Klingebiel (2002), Fofack (2005), Pasha and Khemraj (2009) and Azeem et al. (2012) agreed that, the existence of banking and financial problems has been linked to the massive accumulation of NPLs which has led to poor credit management. As noted in Caprio and Klingebiel (2002), during the banking and economic crises of 1997, many banks were tripled their NPL capacity in the period leading up to the crisis. In addition, Fofack (2005) stated that many banks in sub-Saharan Africa also preceded the rapid collection of NPLs during the 1990s crisis. There is ample evidence that the current global financial crisis, which began in the US, was also caused by the rapid failure of loans / mortgages (Pasha and Khemraj 2009).

In Ethiopia, the banking environment has undergone many regulatory and financial reforms with the aim of improving profitability, efficiency and productivity. Despite the existence of some improvement in the general risk management practice, Ethiopia Commercial banks’ are still weak on their credit risk management. In connection to this, the 2014/15 survey of national bank of Ethiopia (NBE) revealed that, significant proportion of commercial banks in Ethiopia lack: appropriate risk management strategies and programs, timeframe to review risk management documents and adequate risk management budget. The survey results conclude that, among risks that ECBs face, credit risk has been dominant risks over the last two years, and will continue to be key risk over the next five years (NBE 2014/15).

Accordingly, there are some researchers who are conducted in Ethiopia in the area of credit risk managements such as Alebachew (2015) the Case of NIB bank, Gedefa(2019) on the case of Berhan International Bank S.C, Bunna International Bank S.C, Debub Global Bank S.C and Enat Bank S.C., Daniel (2019) the case of NIB bank, Sahilemichael (2009) the case of Commercial Bank of Ethiopia, Construction & Business Bank, Dashen Bank S.C., Awash International Bank S.C., United Bank S.C. and NIB International Bank S.C , Yohannis (2016) the case of Bank of Abyssinia. .

Though there are several studies conducted related with credit risk management in Ethiopian commercial banks, the researchers had not observe identify credit risk management system factors at all commercial banks level and they were not inclusive. Therefore, to fill the gap the study attempts to identify factors that affect the effectiveness of credit risk management systems of Ethiopian commercial banks.

## 1.5 Research Questions

The following research questions will be raised to form the research hypothesis:

1. What is the effect of credit information on the effectiveness credit risk management system in commercial banks?

2. What is the effect of credit assessment on the effectiveness credit risk management system in commercial banks?

3. What is the effect of credit approval on the effectiveness credit risk management system in commercial banks?

4. What is the effect of credit disbursement on the effectiveness credit risk management system in commercial banks?

5. What is the effect of monitoring and follow up on the effectiveness credit risk management system in commercial banks?

## 1.4. Objectives of the study

### *1.4.1. General objective*

The general objective of this study is to assess factors that affect the effectiveness of credit risk management practice in Ethiopian banking industry.

### *1.4.2 Specific objectives*

The specific objectives of the study are to:

- ✓ To identify the effect of credit information on the effectiveness of credit risk management system in commercial banks.
- ✓ To determine the effect of credit assessment on the effectiveness credit risk management system in commercial banks.
- ✓ To examine the effect of credit approval on the effectiveness credit risk management system in commercial banks.
- ✓ To explore the effect of credit disbursement on the effectiveness credit risk management system in commercial banks.
- ✓ To identify the effect of monitoring and follow up on the effectiveness credit risk management system in commercial banks.

## 1.6. Significance of the Study

After the research has been completed, its output will contribute a lot to those parties who have similar objectives and seek information on issues related to the study under investigation.

The research would be significant to help commercial banks to give insight on various factors of credit risk management practice. It will be used as an input or documentation for credit risk management and procedure formulation. It will be used as a source of information for secondary data for those who wishes to undertake future study on similar issues. Finally it helps enhancing of the practical knowledge of the researcher through creating a link between the theoretical knowledge of credit risk administration and actual implementation in this area in the banking industry.

## 1.7. Scope of the Study

The paper focuses only on assessing factors affecting the effectiveness of credit risk management policies and practices in commercial banks in Ethiopia. Even though, credit risk management is a concern of all Banks branches operating in the country, the paper is limited to cover only head office level. On top of this, due to time and cost constraints, the study focused only on respondents residing at Head Office and Addis Ababa Branches staffs.

## 1.8. Organization of the Paper

The paper is organized into five chapters. The first chapter deals with introductory part consisting of introduction/background of the study and the organization, statement of the problem, objectives of the study, scope of the study and its significance. The second chapter reviews literatures related to the study. In the third chapter research design and methodology employed is presented. Analysis of the collected data and interpretation of the analyzed data is presented in the fourth chapter. And finally, the fifth chapter presents summaries of major findings, the conclusions and the possible recommendations.

# CHAPTER TWO

## 2. REVIEW OF RELATED LITERATURE

In the preceding chapter, background information of the study with respect to the research problem and objective of the study were discussed. The purpose of this chapter is to discuss both theoretical and empirical issues pertaining to credit management. The review has two sections. The first section 2.1 presented theoretical review of credit management. Section 2.2 presents a review of empirical studies that have been conducted so far on credit management.

### 2.1 Theoretical review of Credit Management

#### 2.1.1 Definition of Credit Management

Credit management is a dynamic area where a certain level of long-term planning is required to allocate funds to various sectors and to reduce risk and increase investment returns (Rana-Al-Mosharrafa, 2013)

The purpose of credit management is to maximize the performance of the asset and the reduction of non-performing assets and to ensure the correct point of the loan and its continuity and good governance. Total success in debt management depends on banking credit policy, credit portfolio, monitoring, supervision, and credit tracking and development. Continuous monitoring, monitoring and tracking are essential for ensuring timely payment and automatic reduction. In fact, a credit portfolio is not only a building block of banking assets but also an important factor in a bank's success. Only proper credit analysis will identify potential credit losses from real business assets and consider potential reductions in relation to this adverse situation to include a check (Rana-Al-Mosharrafa, 2013).

According to Jabatan (2001), a number of factors are used as part of the credit management process to assess and qualify a customer for a particular type of commercial credit. These include; The collection of data on the financial status of potential customers, including the current credit rating, current balance between income and unpaid financial obligations will also be considered and competent credit management aims not only to protect the seller from potential losses, but also to protect the customer from creating many unpaid debt obligations.

The financial performance of any credit bureau depends largely on the selection of applicants with the highest payment opportunities and the rejection of the highest potential Sewagudde (2000). By doing so credit managers in such a financial institution are at risk and the organization as a whole. As a way to reduce debt, the default problem Gontaezjega (1996) added a premium to the loan price to cover the loss of the loan. This risk premium is due to the fact that at the time of applying for a loan, the lender cannot clearly identify which borrower will repay and which borrower will not repay, as the actual automatic loss may not be known until the fixed amount is paid.

### 2.1.2. Credit Management Process

Problem loans are at the end of the credit channel. Before a loan can be bad, it needs to be repaid. In addition, as mentioned so far, bad credit rates are sometimes caused by factors such as bankruptcy such as poor choices and behavioral risks Stiglitz and Weiss (1981) or any other external shock that could alter the borrower's ability to repay the loan. However, there are cases where the way banks offer and monitor loans may be liable for bad loans. In other words, weak credit control systems can be sources of problem loans (Nishimura no al, 2001).

For these final reasons, it was important to look at the whole bank risk management process in order to adopt a bad credit management framework. Important details regarding credit management procedures are set out here. The Bank's credit management procedures can be summarized in three main categories. These categories are: Debt Implementation, Documentation and Debt Management and Management.

### 2.1.3. Credit Methodology

The credit system covers all the activities involved in lending including sales, customer selection and testing, the application and authorization process, payment monitoring, crime and portfolio management. It is also linked to the institutional structure involved in the credit process. Credit quality is one of the most important determinants of efficiency, impact and profitability of institutions.

Finding a way to buy credit and product mixing is therefore one of the most necessary and rewarding challenges for all financial institutions (banks). The following sections discuss major problems with credit systems that include credit information, credit analysis process, credit approval and debt monitoring procedures. Getting this right will greatly affect the performance of the loan.

#### 2.1.3.1 Credit Information

Financial engagement begins with customer employment. The customer identification problem, traditionally known as KYC (Know Your Customer) is very important before proceeding with the details. Banks use a variety of methods to obtain information about an existing or existing customer. Use of financial statements, credit report from credit bureaux, customer history if not new sources of information (Ross et al., 1998)

According to The Federal Reserve (2004) a credit report provides systematic information about a person and / or company's credit record that a credit bureau discloses to individuals requesting information on a person's credit history and / or a company's credit plan, lease agreements, non-credit unions, acts of collection agency, financial records related to the public, and inquiries about that person's credit history.

Further according to Ferreti (2007), credit information is often combined with information from other sources such as court decisions, election lists and other personal information provided to other parties, including additional information about the consumer. This is naturally a good source for inclusion in debt analysis.

The purpose of information sharing is to transfer relationship information from existing lending relationships to external lenders (Gehrig and Stenbacka, 2007). Credit providers use credit information to perform risk assessments for potential borrowers to reduce credit risk. Kallberg and Udell (2003) emphasize that information sharing is useful both at the inception and after the expansion of debt. Especially in the first stage, the distribution of information reduces the problems of wrong choices.

In fact, the exchange of information on credit enhances non-performing loan rates, leads to fewer written losses and reduces interest rates on good credit risk (Jentzsch, 2008). Jentzsch (2008) also argues that the distribution of credit information among lenders strengthens competition and increases financial access. Jappelli and Paggano (2005) point out that the distribution of credit information leads to improved banking information about the applicant's behavior, reduces poor selection and reduces the rental information that banks can provide to their customers otherwise. Credit information also serves as a tool to guide the borrower, by cutting off debtors who are unable to repay the debt and eliminating or reducing the borrower's incentive for excessive debt by simultaneously withdrawing credit from many banks without one of them noticing it.

In addition, Gehigig and Stenbacka, (2007) emphasize that information sharing minimizes negative selection problems and thus improves financial stability; serves as a borrower's advisory tool and reduces the tax on information that banks can extract within the established customer relationship framework. According to Khuzwayo (2008), the distribution of large amounts of credit information, especially in the informal sector, can significantly increase access to credit for small and medium enterprises.

In addition, Barth, Lin, Lin & Song (2008) suggest that data exchange will help reduce bank lending corruption by reducing equity details between consumers and lenders, improving bribery control mechanisms and reducing information rental, hence the ability to negotiate lenders. The exchange of consumer credit information directs borrowers to repay the loan because borrowers do not want to damage the good report which could make it difficult for them to obtain credit (Switzerland National Bank, 2008).

Once the credit details of the loan application have been received, the bank officials preceded the loan. The next section will then discuss the process involved in debt analysis or evaluation.

#### 2.1.3.2 Credit Assessment

According to Nsereko (1995), a debt test is a process in which a credit provider submits the required documents to a bank for a loan. Feder et al, (1980) states that if bank loans are not properly screened, there is a high probability that the borrower will be able or willing to honor their loan repayment obligations. Derban et al, (2005) argue that borrowers should be assessed by banks as a means of assessing debt. He also notes that effective analysis should include measurement and quantitative strategies when assessing borrowers. Mamman et al, (1994) argues that serving borrowers requires systems of monitoring and strict loan monitoring. The credit review system remains the only guarantee that the loan will be repaid by ensuring that only those borrowers who are in need of credit and are unable to meet the repayment obligations can obtain credit (Polizatto et al, 1990).

Simonson et al, (1999) noted that sound credit policy will help improve asset quality management, establish a set of minimum standards and use common language and methodology (risk assessment, pricing, documentation, security, authorization and ethics) measurement and reporting of intangible assets, financial allocations loans and grants. Credit policy should set out bank lending philosophy, specific procedures and procedures for monitoring loan performance assessments. The decision to grant the loan was reached after an analysis by a committee of more than one person, thereby reducing the risk of one person abusing the grant.

The quality of the disclosure credit usually refers to the borrower's ability and willingness to meet the obligations of a given institution. Includes automatic opportunities and expected recovery rates (Saunders & Cornett, 2003). Debt assessment therefore includes an assessment of the risks involved in financial support and thus it is expected that there will be a default and an increase in payments. A credit test is used by a credit officer to assess a borrower's character, money, power, collateral and the state of the economic cycle, or more commonly called the five C's (Strischek, 2000).

The credit analysis process, traditionally designated by early banks, is not fundamentally different from the method used today (Caouette et al, 1998; Rose, 2002). Five Cs are considered the basis for successful lending and have been around for about 50 years. At first, only the character, the power, and the money were considered. However, guarantees and conditions have been added over the years. This provided a comprehensive view and a clear understanding of the underlying risks and the decision to emerge (Beckman & Bartels, 1955; Reed, Cotter, Gill & Smith, 1976; Sinkey, 2002).

According to Murphey (2004a), these principles should be the cornerstone of all lending decisions. 5C's "are well-known credit rating systems, commercial banks have developed their own credit risk assessment models to determine whether a bank will be willing to lend to a particular business (Sinkey, 2002). Debt assessment is a process in which a credit applicant submits the required documents to a bank to obtain a loan Nsereko (1995). Credit assessments include:

### i. Credit Appraisal

Assessing effective credit demand based on repayment potential requires certain skills in an institution. The success or failure of a loan depends to a large degree on an accurate appraisal of the customers' repayment capacity (Hartmut S., 1997).

Anjichi (1994) describes it as the ‘heart’ of a high-quality portfolio. This includes collecting, processing and analyzing quality data as a means of determining the appropriateness of customer credit and minimizing incentive issues between lenders such as principals and borrowers as agents. Credit policy, procedures and guidelines guide the credit review process. Banks should base their credit analysis on the basic lending principles Character, Capacity, Capital, Collateral and Conditions (Matovu and Okumu, 1996). It is designed to ensure that lenders take steps to facilitate payment or reduce payment problems. This information about the borrower's vulnerability enables the financial institution to take corrective measures such as solicitation, short-term payments, high interest rates and other forms of payment (Stiglitz and Karla, 1990)

When a financial institution does not perform well, its performance is severely affected. Edminster (1980) emphasized the importance of credit analysis when he realized that its abandonment often led many banks to use credit card processing. The variance we have, according to Hunte (1996) includes the length of time taken to process applications, credit information, mortgage security rating on approved loans. It has been found that the longer waiting period indicates a lack of reliable credit information required to make informed credit decisions.

Hunte (1996) also found that borrowing information reflects the ability to manage a business loan better and therefore better business lenders. The less experienced borrower has less ability to manage business loans and therefore does not qualify for credit (Devaney, 1984; Robinson, 1962; Hunte, 1996). This means that there are significant risks associated with new borrowers as the loan officer is not accustomed to recovering from them. This is a fundamental part of the lending process.

### ii. Credit Documentation

Credit documents and withdrawals are another aspect of the credit assessment process. It includes the implementation of key disclosure control measures that ensure the security of documents and receipts prior to the disbursement of funds, and that alterations at all credit institutions are permitted within the credit policy. It includes the maintenance of organized and properly credited credit files, the renewal of records and prompt notification of credit reviews and renewal dates (McNaughton et al, 1996) Loan documents include formal writing, document review, stock review and policy exemptions. While the payment function involves checking the authenticity of the notes and ensuring that the credit bureaux are properly executed. Loan documents describe security and the agreement required before a loan can be made. Provides risk protection by providing reasons for the bank to take legal action when borrowers fail to honor their obligations (Day et al, 1996). Credit notes clearly state, credit terms, which are conditional, attached to the loan after the borrower's application has been properly stated. These include:

#### a. Purpose of Loan

The purpose for which credit is sought is an important consideration to the bank because of the risks in the lending activities. Banks being profit driven, seek to maximize returns while minimizing risks. This seemingly paradox constrain banks to examine not only viability of a project but also loan repayment prospects. Vittas and Chao (1996) observed that in many countries, Banks favor lending for low-risk activities, such as self-liquidating, short-term working capital and trade finance. They are generally less willing to finance high risk projects with long payback periods, and small forms that lack adequate collateral even though such firms may be more innovative and promising than others.

#### b. Loan Period

The World Bank (1996) reported that Banks have little capacity and interest to provide long-term capital. This is attributed partly to the high composition of short term liabilities in their portfolio and also their concern for risks associated with lending activities.

### c. Size of Loan

Loan size is the amount of loan advanced to the client. It can be small, medium or big. Banks prefer bigger loans largely because their transaction costs are lower. Efficient loan size should fit the borrower's repayment capacity and stimulate enterprise performance. Pische (1991) argues that poor loan sizing is illustrated by extensive credit rationing, which issues too little credit to too many borrowers. However, according to Chirwa (1997), relatively large loans may tempt the borrowers to divert a portion for non-business purposes.

### d. Interest Rate

It is the cost of borrowing and works to distribute the debt and measure the level of investment (Ross, 1991). The interest rate can be determined from the perspective of borrowers and lenders. For the borrower, the interest rate is the cost of borrowing that is expressed as a percentage of the loan amount (Martin, 1998). The borrower assesses all costs including interest rates and expected returns before deciding whether to take out a loan or not. For lenders, the interest rate is determined by including costs such as product costs, inflation, labor, administration costs, loan disbursements and growth rates (Kasibante, 2001). The called rate should be able to cover costs and make a contribution to the financial institution.

In line with the view given to Commercial Banks to set their own interest rates under NBE No. NO / INT / 11/2010 dated 1 December 2010; commercial banks set interest rates on the type or sector in which the applicant is involved, the type of product, the duration of the loan, the collateral status, the cost of the fund and the competition.

In determining the value of its lending interest, the Bank constantly strives to increase interest rates, in fact, given the competition, fund costs and risks involved in each sector and product. Therefore, to maximize the Bank's profits on the one hand and make the prices equal and competitive on the other hand, interest rates on loans and developments should be reviewed periodically.

### e. Collateral

This is the borrower's asset pledged in exchange for the receipt of a loan. Banks request for collateral before extending loans to customers. The collateral is always higher value than the loan taken to ensure that the loan is paid back. The use of groups as collateral is accepted by some banks (Yunus, 1996). When one member fails to pay, the other group members pay on their behalf. Thus, this system makes it possible for group members to monitor one another thus leading to improved loan repayment. However, some studies have found out that group members don't want paying for others and they also don't like others paying for them (Antonio, 2000).

### ii. Portfolio Management

Portfolio management is an important part of the credit assessment process. It is a relationship management system that focuses on balancing and containing individual risk risks within strategic guidelines. It includes the management of the credit bureau to ensure orderly and full payment, hiring of credit bureaus and exercise strategies in cases where the debt is actually declining.

The success of banks depends on their ability to adapt to changing circumstances (Kagwa, 2003). Institutions should have a culture of financial management. They should be willing to take the client's bail if necessary (Garber, 1997). The organization should have a system in place to track late payments or actual losses, to deploy employees or collection agencies to collect these loans in order to maximize return on resources.

The purpose of portfolio management is to assess whether it is possible for the loan to be repaid, and whether the allocation of the loan proposed by the bank is sufficient or not. Other considerations are the quality of the held collateral and the ability of the borrower's business to make the required amount of money (Greuning et al, 1999).

Portfolio management includes aspects of asset classification. The classification of an asset is the process by which an asset is given a credit risk level determined by the probability that a liability for the liability is provided and the liability is settled in accordance with the terms of the contract. Generally, all bank assets that are at risk should be separated. Assets are classified as start-up and then restated and reclassified (at risk) several times a year. The review should take into account the repayment of the loan service, the financial conditions of the borrower, the economic partners and the relevant market changes and performance (Greuning et al, 1999).

Debt management includes financial position management, contracts, agreements, and payments and credit reviews. It focuses on ensuring that customer satisfaction prior to the establishment is taken care of. If the loan is already in the books, it must be managed carefully to ensure that it does not damage and that it is repaid.

Good loan management can rarely overcome poor judgment, but many good credits become problem loans because lending officials did not heed the warning that arose over life of the loan.

The credit administration process involves on- site visit, regular contact as well as checking for compliance with covenants in the loan agreements.

During administration, the credit officer can detect early warning signals of noncompliance or deterioration. These signals help to maximize the effects of corrective actions and to minimize the potential loss of the bank. Some of the signals may include lower deposits, persistent failure to keep appointments, persistent rolling over credits, and requests for short term facilities on top of current facilities as well as requests for increments without retiring the previous facility.

#### 2.1.3.3. Credit Approval

Depending on the credit information obtained about the borrower and the credit assessment performed, either by a rating or quality model (using five Cs) or a combination of both, a credit card is made. The next section deals with credit approval or approval process.

Credit approval is the process of deciding whether or not to extend credit to certain customers. It involves two steps: collecting relevant information and determining credit worthiness (Ross, Westerfield and Jordan, 1999).

As mentioned in the preceding paragraph, the credit analysis process consists of an automatic analysis of the borrower's application and an analysis of the quantity of financial information provided. Individual steps in the credit approval process and their implementation have a significant impact on the risks associated with credit approval.

The quality of credit acceptance procedures depends on two factors, eg the open and comprehensive disclosure of risks when lending on the one hand, and adequate assessment of these risks on the other. In addition, the level of efficiency of credit approval processes is an important measure of value. Due to the large differences in the status of the various borrowers and the goods to be paid and the large number of products and their complexity, there can be no uniform process for assessing credit risk.

The level of credit risk recognition process is determined by the best diagnostics and credit risk assessments that are disclosed to the potential disclosure.

Credit risk can be distributed among the following risk components: Automatic Opportunity (PD), Automatic Disposal Loss (LGD) and Automatic Disclosure (EAD). (Oesterreichische National Bank Credit Approval Process and Risk Management, 2000, Bluhm, Overbeck& Wagner, 2003):

Once the information is collected, the company begins to face the difficult choice of granting or rejecting credit. Many financial executives use "Five C's Credits" as their guide (Ross, Westerfield and Jaffe, 1999) as discussed earlier and identify and assess the credit risk arising from the disclosure of potential credit penalties.

#### 2.1.3.4 Disbursement

Disbursement on the other hand ensures that money is not availed until all approvals and documentation requirements are met. It also ensures that security and other required documentations are obtained before funds are disbursed. If disbursement control is weak, the whole integrity of the credit process can be weakened and abused (Msi, 1994 and Nsereko, 1995). Thus, documentations and disbursement are important in the management of credit because they ensure that the bank has proper documentation, collateral and guarantees. These are important in the advent of the clients' inability to pay because the bank would be properly secured and have legal recourse to ensure the settlement of debt. This would ultimately decrease the amount of bad debts the banks may have.

### 2.1.4 Repayment of Bank Loans

Loan repayment is defined by the Cambridge English business dictionary, as the act of repaying the loan. Payments are usually an occasional payment method that usually includes a portion of the principal and interest on the payment. Another common way to pay a lump sum interest is in maturity. Starbiz (2010) argues that the problem of money laundering is an unresolved issue facing most commercial banks. According to HuaShen et al, (2008) The repayment of a loan depends on the availability of the loan. Payment methods include; the use of loan guarantors, the abandonment of ethics, the prevention of access to other loans in the event of legal action against those who do not pay properly. Key factors affecting loan repayment rates include; socioeconomic factors such as gender, level of education, marital status, family income level and peer pressure in programs designed for groups (Reta, 2011).

Different banks use different methods to calculate loan repayment schedules depending on; their needs, the needs of borrowers, the institution's interest rate policy, the duration of the loan, and the purpose of the loan. Includes: Payment Loan, Dive Fund Method, Equal Payment Plan and Balloon System.

After the credit check and release have been made, the credit customer is expected to pay the installment according to the agreed schedule. Each bank has a different payment method. Depending on the bank details, customers can pay weekly, bi-weekly or monthly installments (Odongo, 2004).

#### *2.1.4.1 Determinant of repayment of bank loan*

Advanced loan access to creditors can be due to a number of factors ranging from economic conditions, debt management and management, and interest rates. One of the most important determinants of loan repayment depends on the strength with which credit checking systems can effectively and efficiently manage customer credit lines. Debt assessment reduces the risk of consumer exposure to bad credit, overdue and liquidation (Sindani et al, 2012). Credit testing provides banks with an understanding of the client's financial strength, credit score history and payment patterns. The effectiveness of the credit assessment system depends on the procedures and methods used in the credit assessment (Glen, 1996). According to Horne (20007), banking debt testing methods range from simple or informal methods to more sophisticated methods such as using a simulation and computer model. The purpose of these procedures is to ensure that customers are properly assessed before obtaining credit.

The ability to repay the loan may be largely influenced by the interest rate charged on the loan. Kariuki (2010) argues that when interest rates are low, borrowers are more likely to be willing and able to repay their loans. High interest rates on the other hand discourage repayment and loan applications. Borrowers are more likely to default on a loan when interest rates rise sharply than the consumer's income.

It has been observed that policies governing debt management and administration have a bearing on loan repayment. According to Kariuki (2010) loan repayments can be improved if loan repayments are obtained for those who pay less. He says some of the bad debts incurred by banks are due to the lack of proper policies that can speed up recovery. This is necessary because some customers may simply decide not to repay the loan if the bank conditions permit.

According to Pandy, (2008) economic conditions have a profound effect on loan repayment. He said businesses were experiencing economic fluctuations or wide cycles that could disrupt customers' ability to repay their loans as planned for months or years. Credit policies relating to disbursements and receivables should include that consideration in their plans. To ensure proper payment, banks should ensure proper monitoring and follow-up procedures.

#### *2.1.4.2 Monitoring and Follow up*

According to Robinson (1962) and Anjichi (1994), many of the agonies and frustrations of slow and distresses can be avoided by good loan supervision. Supervision helps keeping a good loan good. It may be visiting the borrowers' premises to investigate the general state of affairs and maintenance of plant and equipment. Inadequate maintenance is often an early sign of financial distress. Also to be observed is the state of employee morale and the physical stock of materials and finished goods.

The general business policy and advice is considered. If a bank is sanitizing to business development it can revise its own credit and loan polices as well as advising its customers. Again keeping track of deposits and balances gives clue to the affairs of the borrowers.

Lending decision is made on sound credit risk analysis /appraisal and assessment of creditworthiness of borrowers. But past records of satisfactory performance and integrity are no guarantee future, though they serve as useful guide to project trend in performance. A loan granted on the basis of sound analysis might go bad because of the borrower may not meet obligations per the terms and conditions of the loan contract. It is for this reason that proper follow up and monitoring is essential. Monitoring or follow up deals with the following vital aspects:

- Ensuring compliance with terms and conditions
- Monitoring end use of approved funds
- Monitoring performance to check continued viability of operations
- Detecting deviations from terms of decision
- Making periodic assessment of the health of the loans and advances by nothing some of the key indicators of performance that might include: profitability, activity level and management of the unit and ensure that the assets created are effectively utilized for productive purposes and are well maintained.
- Ensuring recovery of the installments of the principal and interest in case of term loan as per the scheduled repayment program
- Identify early warning signals, if any, and initiate remedial measures thereby averting from possible default.
- Basically there are three types of loan follow up systems. These are: Physical follow up, financial follow up and legal follow up.

## 2.2. Empirical evidence

Pyle (1997), in his study of banking risk management, argued that banks and similar financial institutions must meet future risk management and financial management requirements. However, it is a serious mistake to think that meeting the requirements for end-of-life control or the most important reason for establishing a sound, scientific disaster management plan. Holding on, managers need reliable ways to invest in jobs with the best risk / reward rates. They need an estimate of the amount of potential losses to stay within the limits set by easily accessible funds, by creditors, customers and regulators. They need ways to monitor positions and build incentives to take risks with a sense of belonging.

Ahmed, Takeda and Shawn (1998) in their study found that the provision of loans has a very positive effect on non-performing loans. Thus, the increase in the provision for credit losses reflects an increase in credit risk and the deterioration of loan quality which impairs the bank's efficiency.

According to the Basel Committee (1999) on credit risk management, the following was observed: Many credit problems highlight fundamental weaknesses in credit delivery procedures and monitoring procedures. While market failures and regulatory debt-related debt represent significant sources of bankruptcy losses, many credit problems have been prevented or mitigated by a strong internal credit process. They also note that many banks find doing a thorough credit test (or even a basic degree of diligence) a major challenge. In traditional bank lending, the pressure of competition and the growth of loan integration strategies create time constraints that undermine the fundamental efficiency. The global distribution of credit markets increases the need for financial information based on sound accounting standards and timely financial data. If this information is unavailable or unreliable, banks can be excluded from financial and economic analysis and support credit decisions with simple credit quality indicators, especially if they see the need to find a competitive place in a rapidly growing foreign market. Finally, banks may need new types of information, such as risk ratings, and general financial information, to evaluate new partners, such as institutional investors and more powerful institutions.

Abdus (2004) examined the performance of Bahrain's commercial banks in terms of credit, loans and profits during 1994-2001. Nine Financial Rates (Return on Asset, Return on Equity, Cost to Revenue, Net Loans to Total Asset, Net Loans to Deposit, Liquid Asset to Deposit, Equity to Asset, Equity to Loan and Non-performance loan to Gross Loan are selected by debt rating , through monetary and profitability. Through these financial measures, the paper found that commercial banks' financial performance was not commensurate with the Bahraini banking industry. This paper did not receive a complete result.

Ahmad and Ariff (2007) examined key components of credit risk in commercial banks in emerging banking systems of the economy as compared to developed economies. The study found that regulation is important for banking systems that offer a wide range of products and services; administrative quality is very important in the case of banks that are investing heavily in the emerging economy. Increased lending losses are also considered to be a major determinant of potential credit risk. The study further revealed that the risk of credit to emerging economies is higher than that of developed countries. Ahmed, Takeda and Shawn (1998), in their study found that the provision of loans has a very positive effect on non-performing loans. Thus, the increase in the provision for credit losses reflects an increase in credit risk and the deterioration of loan quality which impairs the bank's efficiency.

Ben-Naceur and Omran (2008) in an effort to assess the impact of banking regulations, monetary, financial and institutional investment in the Middle East and North Africa (MENA) (MENA) countries have found that bank investment and credit risk have a positive effect. and visible on bank interest rates, cost efficiency and profitability. According to Berger and De Young (1997), mismanagement of banking facilities leads to bad credit and, therefore, increases the rate of non-performing loans. They say the mistreatment of banking firms will lead to better banking performance and affect the lending process. Banks "managers can fully evaluate their customers" credit application because of their poor testing capabilities. Therefore, bankruptcy can lead to high-yielding loans.

The NBE (2009) conducted the first study of risk management practices in Ethiopian commercial banks by taking a sample of nine members of the bank's board of directors (National Bank of Ethiopia, 2009). It was specifically aimed at identifying the risk management situation in the commercial bank and improving its capacity by continuing to provide fruitful recommendations on weaknesses. Incomplete training in risk management, improper allocation of disaster risk management budgeting, current absence and relevant economic and business data for decision making, lack of strategic and risk management plans, lack of review of disaster risk management documentation, and internal and systemic communication The performance of other Ethiopian commercial banks while having a professional staff of disaster risk management, the existence of a risk management and policy framework, the BOD's commitment, risk awareness of banking operations, the sustainability program and credit risk have been major strengths for banks. In general, the dominance of all those weaknesses over the strength proves the existence of a bad risk management system and practice in the Ethiopian commercial banking industry.The study of NBE (2009) identified and ranked three important types of risks in which Credit risk was ranked firstly and then followed by operational risk and liquidity risk.

Hagos M. (2010) investigated debt management at Wogagen Banks. The main purpose of this study was to evaluate the effectiveness of Wegagen Bank's debt management in the Tigray Region against the requirements of the National Bank in terms of its credit policy and procedures. Primary and secondary data collected from secondary primary sources were described and analyzed using descriptive statistics. Therefore, the nature of the Study is descriptive. The following findings were the result of an investigation: barriers to credit growth and increased consumer loan complaints regarding mortgage collateral, long-term loan repayment, loan dues being considered and approved, loan duration, and credit performance limitations.

Tibebu (2011) “Ethiopian Risk Management and Profitability of Commercial Banks in Ethiopia” emphasized that the board of directors of Banks is responsible for all banking activities, so they need to undergo further training for their employees, especially disaster management managers and staff. Bank policy makers (NBEs) need to set policy, as well as guidelines that compel banks to consider their credit policy, risk management policy, and other related matters.

Kargi (2011) examined the impact of credit risk on Nigerian banking benefits. Financial estimates such as bank performance measures and credit risk were collected from annual reports and sampled bank accounts from 2004-2008 and analyzed using descriptive, aggregate and return methods. The findings revealed that debt risk management has a significant impact on the profitability of Nigerian banks. It concluded that the profitability of banks ”was influenced by interest rates and development, non-performing loans and investments that put a high risk of insecurity and misery.

Girma (2011) investigated the relationship between bank performance and credit risk management. It could be inferred from their findings that return on equity (ROE) and return on assets (ROA) both measuring profitability were inversely related to the ratio of non-performing loan to total loan of financial institutions thereby leading to a decline in profitability. Tekele (2011) studied the reasons behind the problem of loan recovery and determinants of loan default and summarized some of the causes for loan defaults as improper selection of an entrepreneur, poor analysis of project viability, inadequacy of collateral. He further discussed that factors affecting loan recovery can be categorized as pre-establishment problem, implementation, and operational problem.

Wondimagegnehu (2012) in “The determinants of Nonperforming loan on commercial banks of Ethiopia” was also found to be improper credit checking, unsuccessful loan monitoring, underdeveloped development culture, unreliable credit terms and conditions between banks, deliberate failure to borrow and reduction of credit information, fraudulent loans. and over-funding has a significant impact on NPLs. The literature review above emphasizes that all the studies conducted so far focus on loan repayment issues, loan repayment criteria, the impact of credit risk on bank operations and the benefits to financial institutions generally at Macro-level and micro level.

Chen J. and Shuping H., (2012) conducted a study on the financial management of commercial banks in Lianyungang City by small and medium enterprises (SMEs). Researchers have found that the risk management system and procedures that are in line with SME requirements are still underdeveloped and have resulted in bad debts and dead loans overcrowding the Lianyungang commercial bank, thus contributing to the commercial performance of commercial banks, and having a negative impact on local economic development. . Therefore, it is necessary for commercial banks in the city of Lianyungang to monitor and manage the entire credit system for small and medium enterprises.

Solomon (2013) in his paper entitled "Credit risk management strategies and practices of Nib International Bank" concludes that commercial banking risk management should include a check and credit balance balance that includes the division of credit risk management over debt sanctions, debt processing / credit management and credit management. independent liability audit and risk review.

Kwaku D. (2015) learned to evaluate credit risk management practices in the Ghanaian banking industry: Procedures and challenges and obtained the following results. Some of the key findings of the study revealed that the bank had written down the policy guidelines for disaster risk management of the manager and chief executive officer. However, research has shown that there are some challenges to the implementation of credit risk policies that have led to the low level of bank lending. It is recommended that risky banking policies be reviewed regularly. For example, the bank's policy restructuring process, which included debt restructuring for small and medium-sized enterprises, produced high yields. Also, in order to be effective, the disaster management department must work with well-trained staff in the disaster risk management field. In addition, the practice of introducing effective credit systems should be improved. Also, banks should periodically review their credit control policies and strategies and compare them with best practices at similar institutions.

Atakelt A. and P P. Veni (2015) investigated the Financial Risk Management Practice of Ethiopian Commercial Banks. Descriptive research based on the Survey process was performed using key data collected from a self-generated questionnaire. Econometric and other mathematical methods have been used to test the hypothesis. The study confirmed that four aspects of Basel's disaster risk management principles define a significant degree of diversity in disaster risk management practice in Ethiopian commercial banks. In addition, Establishing an appropriate Credit Risk Area and Ensuring Adequate Credit Risk Management has been found to be the most effective in the risk management process.

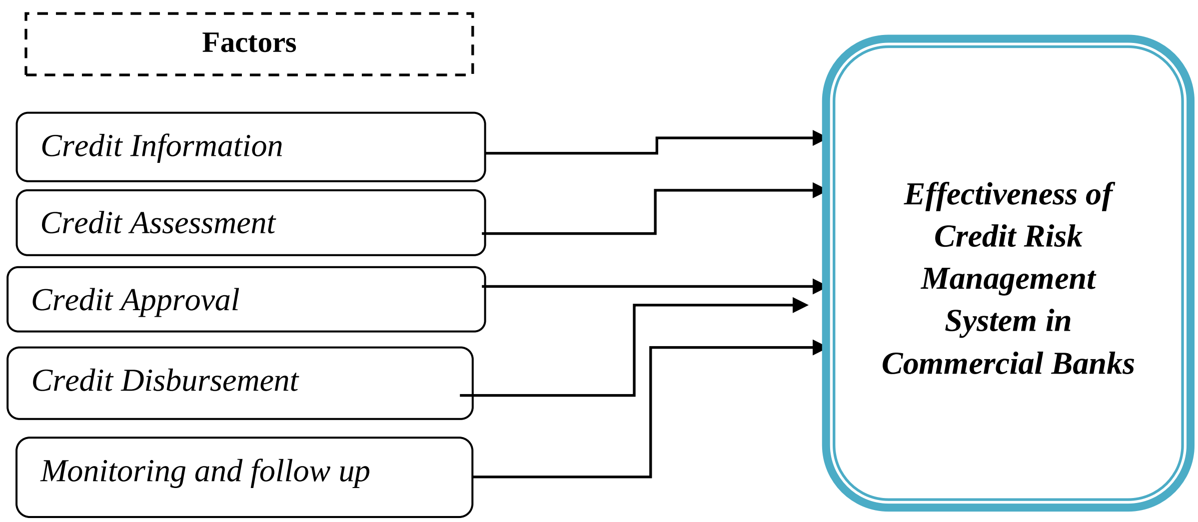
Fikremariam (2019) conducted a study entitled "factors affecting disaster risk management practices, a case of private commercial banks in Ethiopia". This study attempted to quantify the factors affecting credit risk management practices of certain selected commercial banks in Ethiopia. As a result, the study has assessed the quality of the service such as, the credit delivery process, the credit risk assessment process and the monitoring process, market risks, operational risks, legal risks, the establishment of a credit risk environment. Data were collected from four private banks, namely; Oromia, Birhan, Debub global and Anbessa banks. 106 respondents participating in the study were randomly selected. The result of the merger equity has shown that all variables are statistically significant and are well aligned with the risk management strategies of the private banks. Therefore, the bank's risk management measures are largely affected by the lack of creditworthiness, followed by credit rating and monitoring challenges, the lack of market risk analysis, operational risks and the challenges of sound credit delivery process.

## 2.3 Research Gap

The existing literatures indicate that several studies were carried out about credit risk management on commercial banks abroad and in Ethiopia. However, due to diversified and intensified investments in the country there is an increase of loan demands among investors from commercial banks in the country. In addition to this, high the previous studies focus only some of selected private banks so that are not inclusive. Therefore, this study will assessthe factors affectingthe effectiveness of credit risk management practice at all commercial banks in Ethiopia.

### 2.4 Conceptual framework

After going through literatures, the researcher has tried to extract the conceptual frame work of the study and their implication. The relationship between the five components (credit information, credit assessment, credit approval, credit disbursement and monitoring and follow up) and the effectiveness credit risk management system is described by the following diagram.




Source: Authors Adopted from literatures

**Figure 1: The conceptual framework**

# CHAPTER THREE

## 3. METHODOLOGY OF THE STUDY

### 3.1 Introduction

The preceding chapter presented the review of literature on credit management. The purpose of this chapter is to discusses the research design. This chapter presents the research design, research approach, and target population, sampling techniques, source of the data and method of analysis.

### 3.2 Research Design

A research design is the procedures for collecting, analyzing, interpreting and reporting data in research studies (Creswell &Clark, 2007). It is the overall plan for connecting the conceptual research problems with the pertinent (and achievable) empirical research. In other words, the research design sets the procedure on the required data, the methods to be applied to collect and analyze this data, and how all of this is going to answer the research question (Grey, 2014).

This study was applied descriptive research and inferential analysis. To study the problem guided by the basic research question descriptive method was employed. According to Abiy et al. (2009) descriptive research has the intention of describing the nature of existing condition or identifying standard against which can be compared. Additionally, stated by (Creswell, 2003), this method is more appropriate to gather variety of data related to the study and analyze the data in mixed type of quantitative and qualitative approach. It is the overall plan for connecting the conceptual research problems with the appropriate empirical research.

This study is focus on the factors of credit risk system in commercial banks as identified in the research problem statement. As a result, this study used the explanatory design, with describing, understanding, predicting the factors that affect the credit risk management system.

### 3.3 Research Approach

There are three research methods or approaches: these are qualitative, quantitative and mixed research method. This study used both qualitative and quantitative method which is named as mixed research method. According to Creswell (2014) mixed method research is a methodology for conducting research that involves collecting, analyzing and integrating quantitative and qualitative research. As many scholars explained as quantitative methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires and surveys or by manipulating pre-existing statistical data using computational techniques.

According to Mugenda (2003) quantitative study describes as a research approach explaining phenomena by collecting numerical data that are analyzed using statistical approaches. Quantitative research focuses on gathering numerical data and generalizing it across groups of people or to explain a particular phenomenon.

### 3.4. Population of the Study

The study of population is a well-defined or specified set of people, group of things, households, firms, services, elements or events which are being investigated. The population should be acceptable for a certain project, which the researcher is studying. The target population is one that the researcher wants to generalize the result of the study. The target population of this study includes all department managers and senior officers working on loan processing, such group involves loan officers, credit analysts, credit follow-up and monitoring officers, relationship managers and recovery officers from 17 commercial banks at Addis Ababa head offices in the fiscal year 2020. The total number of 451 staffs is included as a target population.

### 3.5 Sample Size and Sampling Techniques

With regards to the sample size of this study, it is important to select a representative sample through making a sampling framework. In this study, the sample size consider as representative of staffs involved in credit processing and monitoring in branches & head office and this was expected to be large enough to allow precision, confidence and to generalize the research finding. The researcher use Kothari sample size determination formula developed by (Kothari, 2004) because it is a standard formula and is used in different related studies it is calculated as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where;

N: Designate total number of employees on credit management department at head office

e: Designates maximum variability or margin of error 7% (0.07).

1: Designates the probability of the event occurring.

$$n = \frac{451}{1 + 451 * (0.07)^2}$$

n= 140.5 =141

Therefore, the sample size for this study is 141employees.

In order to select relevant respondents from department head, division head, branch manager, credit appraisals, credit analysts, loan officers, customer relation manager, and credit committee member of all branches. The sample respondents will be selected using non probability sampling specifically purposive sampling techniques. The idea behind purposive sampling is to concentrate on people who are directly involved in credit processing and administering because they are better able to assist with the relevant research data.

### 3.6 Source of Data

For the purpose of the study, primary data is applied. Primary data was collected through questionnaires distributed to respondents that involve department managers and senior officers working on loan processing, such group involves loan officers, credit analysts, credit follow-up and monitoring officers, relationship managers and recovery officers.

According to Bulmer(2004), the questionnaire is a well-established tool for a social science research to obtaining information on participant social characteristics, present and past behavior, standards of behavior or attitudes and their beliefs and reasons for action with respect to the topic under investigation. The questionnaires were designed as close ended questions used in the form of five point Likert-Scales to collect data from the sample respondents. The questionnaire were rating scales ranging from 1-strongly agree to 5-strongly disagree. However the analysis is based on how the mean response of the respondent closed to this expected value. A number of researchers use this methodology, because it is relatively easy for respondent to answer the question and responses. This scale is likely to be reliable (Balzanand, 2007).

### 3.7 Method of Data Analysis

After the data is collected, the researcher present and interpret the result using descriptive and inferential statistical techniques by using SPSS 20 version. The descriptive analysis presented using statistical analysis such as frequencies, percentages, means, mode and standard deviations while, the inferential analysis is done using regression and correlation analysis.

### 3.8 Multiple Regression

A multiple regression analysis is the most commonly used multivariate procedures and is used to build models for predicting scores on one variable, the dependent variable, from scores on a number of other variables, the independent variables Terre Blanche, et al, (2006). The researcher tried to predict the model in terms of the independent variables such credit information, credit assessment, credit approval, credit disbursement and monitoring and follow-up. Likewise, the effectiveness of credit management system will be used as dependent variable.

To figure out the effect of independent variables on the effectiveness of credit risk management system of commercial banks, the researcher tried to specify the multiple regression method as follows:

$$ECRM = f(CIF, CASS, CAP, CD, MF)$$

$$ECRM = c + \beta_1 CIF + \beta_2 CASS + \beta_3 CAP + \beta_4 CD + \beta_5 MF + \varepsilon$$

Where
*ECRM= Effectiveness of Credit Risk Management,*
*CIF = Credit Information,*
*CASS= Credit Assessment,*
*CAP= Credit Approval,*
*CD= Credit Disbursement,*
*MF = Monitoring and follow up,*
$\beta$ *: Coefficient of the independent variables*

$c$ *: Constant and* $\varepsilon$ *: Residual*

### 3.9 Reliability and Validity of Data

Reliability estimates the consistency of the measurements or more simply, the degree of uniformity of the results obtained from repeated measurements. Reliability is essentially about consistency (Adams, et al, 2007, P, 235). According to Joppe (2000, p.1) pointed that an accurate representation of the total population under study is referred to as reliable if the results of a study can be reproduced under a similar methodology. Reliability, by definition, refers to the extent to which studies can be regularity. In order to satisfy the criterion of reliability in a piece of research no matter it is quantitative or qualitative it is important for the researcher to document the research procedure explicitly (Kirk and Miller, 1986). This is what Franklin and Ballan (2001) called the 'audit trail', which is important to provide a basis for checking the researcher's dependability.

Reliability or internal consistency can be measured in different ways. In this study the reliability is assessed by means of the Cronbach Alpha. The generally agreed lower limit, to be able to claim an instrument to be reliable, for the Cronbach Alpha coefficient is 0.70, although the limit may be lowered to 0.60 in the case of explanatory research (Hair et al., 1988).

### 3.10 Ethical consideration

Before engaging in data gathering, the study secured ethical issues by informing the respondent for the purpose of the study. During such process, the participants will properly informed the purpose of the study and confirm the confidentiality of their responses. This included briefly explain for non- disclosure of individual identity and their liberty from any liability or risk arising from the study or the response. The required information was collected only from the interested participants and they informed to have a right to withdraw at any time when felt inconvenience of participation. All the corporation documents financial or non-financial or which includes manuals, policy, procedures etc. will preserved confidential and not be disclosed to third party in any form. The study acknowledges all contributors to this study and provides proper credits to those scholars immediately and list of references was attached. At most effort, this study applied free from bias, abuse, misconduct and fraudulent acts and practices.

# CHAPTER FOUR

## 4. RESULT AND DISCUSSION

### 4.1 Introduction

In this section response rate, demographic characteristics of the respondent, perception of the respondent on credit risk management system and inferential statistics (correlation and multiple regressions) are discussed in detail.

### 4.2. Response Rate

In order to meet the objective of this study a total of 141 questionnaires were distributed to the target groups. Out of this distributed questionnaires, 121 were returned which implies that a response rate was about 88.8%. This response rate indicated appropriate to conduct research. And this is supported by the literature of Mugenda (1999), that a response rate of 50% is adequate for analysis and reporting, a rate of 60% is generally good while a response rate of above 70% is excellent, and this also asserted by Babbie (2010) that 70% is excellent.

### 4.3 Reliability and Validity Test

Conducting a reliability and validity test is very important to check the dataset consistency. In this study, the reliability or internal consistency test is conducted using Cronbach Alpha, Table 4.1 provides the Cronbach Alpha scores for the items. The Cronbach's Alpha recorded scores for groups as well as in total was greater than the threshold value of 0.7, resulting that all questionnaire items could be considered as reliable as a group as well as in total.

**Table 4.1Reliability Statistics**

| Items by group | Cronbach's Alpha | N of Items |
|---|---|---|
| Credit information | 0.869 | 5 |
| Credit risk assessment | 0.789 | 5 |
| Credit approval | 0.826 | 5 |
| Credit disbursement | 0.761 | 5 |
| Monitoring and follow up | 0.793 | 6 |
| Effectiveness of credit risk management | 0.831 | 5 |
| Total | 0.945 | 31 |

*Source: SPSS Output,2020*

### 4.4 Demographic characteristics of the respondent

In this research the demographic factors of the respondents included gender, age, educational back ground and working experience. As can be seen from Table 4.2 below, from the total 121respondents participated under the study, about 52.9 % of the respondents were male, while the remaining 47.1 % were female. The finding indicates that most of the participants are male.

**Table 4.2: Demographic characteristics of the respondent**

| | | Count | Percent |
|---|---|---|---|
| Gender | Male | 64 | 52.9% |
| | Female | 57 | 47.1% |
| | Subtotal | 121 | 100.0% |
| Age | 18-25 | 3 | 2.5% |
| | 26-35 | 62 | 51.2% |
| | 36-45 | 56 | 46.3% |
| | 46-55 | 0 | 0.0% |
| | Over 55 | 0 | 0.0% |
| | Subtotal | 121 | 100.0% |
| Educational Background | PhD | 0 | 0.0% |
| | First Degree | 77 | 63.6% |
| | Master's Degree | 34 | 28.1% |
| | Diploma | 10 | 8.3% |
| | Subtotal | 121 | 100.0% |
| Work Experience | Less than 5 years | 28 | 23.1% |
| | 5-10 years | 36 | 29.8% |
| | 10-15 years | 30 | 24.8% |
| | Above 15 years | 27 | 22.3% |
| | Subtotal | 121 | 100.0% |

*Source: SPSS Output, 2020*

Regarding the age distribution, the sample age categories were divided with five age categories. Accordingly, the results showed that out of the total 121participants, majority of respondents (51.2%) were aged between 26 and 35 years old followed by aged between 36 and 45 years (46.3 %) and aged between 18 and 25 years (2.5 %) (Table 4.2).

Looking at the education level of the respondents, from the total of 121 participants in the research, 63.6 % of the respondents have first degree, 28.1 % have masters degree and the remaining 8.3 % of the respondents have diploma. Thus, it is possible to say that approximately all the respondents had good education background (Table 4.2).

The respondents were also asked to indicate their working experience in the banking sector. It became embarked that out of 121 participants, 29.8 %, 24.8 % , 23.1 % and 22.3 %of respondents have 5 to 10 years, 10 to 15 years, less than 5 years ad above 55 years of work experience, respectively (Table 4.2).

## 4.5 Perception of Respondents on Factors of Credit Risk Management System

In order to assess the perception of respondents towards factors that affecting the effectiveness of credit risk management system related with credit information, credit risk assessment, credit approval and credit disbursement. The respondents were requested to rate each item using five scale liker-scaling, ranging from strongly disagree to strongly agree. The following statistics are used in interpreting the results of the study: 1.0 “Strongly disagree/very dissatisfied”, 2.0 “Disagree/dissatisfied, 3.0 “Moderate agreement/moderately satisfied”, 4 “Agree/satisfied”, and 5.0 “Strongly agree/very satisfied”. Moreover, the researcher tried to calculate the average, mode and standard deviation. The standard deviation of respondents for all questions were one, which indicates that the respondent’s perception were close to one another.

### *4.5.1 Credit Information*

A credit report is the organized presentation of information about an individual’s and/or company’s credit record that a credit bureau communicates to those who request information about the credit history of an individual’s and/or company’s experiences with credit, leases, non-credit-related bills, collection agency actions, monetary-related public records, and inquiries about the individual’s credit history. Thus, organized credit information is very important factor to the effectiveness of credit risk management system.

**Table 4.3: Credit Information**

| Credit Information Items | Strongly Disagree | | Disagree | | Neutral | | Agree | | Strongly Agree | | Mode | Standard Deviation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent | | |
| A bank use financial and credit bureau reports to obtain information about the existing or potential customer. | 41 | 33.9% | 40 | 33.1% | 21 | 17.4% | 16 | 13.2% | 3 | 2.5% | 1.00 | 1.12 |
| Bank has information systems and analytical techniques that enable management to measure the credit risk. | 36 | 29.8% | 57 | 47.1% | 6 | 5.0% | 21 | 17.4% | 1 | .8% | 2.00 | 1.05 |
| The management information system provide adequate information on the composition of the credit portfolio. | 35 | 28.9% | 50 | 41.3% | 19 | 15.7% | 15 | 12.4% | 2 | 1.7% | 2.00 | 1.04 |
| A bank has receive sufficient information to enable a comprehensive assessment of the true risk profile of the borrower or counterparty. | 33 | 27.3% | 37 | 30.6% | 39 | 32.2% | 9 | 7.4% | 3 | 2.5% | 3.00 | 1.02 |
| A bank has the borrower's repayment history and current capacity to repay, based on historical financial trends and future cash flow projections, under various scenarios. | 32 | 26.4% | 29 | 24.0% | 11 | 9.1% | 42 | 34.7% | 7 | 5.8% | 4.00 | 1.34 |
| **Average** | | 29.3% | | 35.2% | | 15.9% | | 17.0% | | 2.6% | | |

*Source: SPSS Output, 2020*

Based on the above table results, on average about 29.4 %, 35.2 %, 17 % and 2.6 % of the respondent are strongly disagree, disagree, agree and strongly agree, respectively. This reveals that, most of the respondents are not satisfied on the credit information method such as financial and credit bureau reports, information systems and analytical techniques, management information and sufficient information to enable a comprehensive assessment of the true risk profile of the borrower or counterparty(Table 4.3).

### *4.5.2 Credit Assessment*

According to Nsereko (1995), credit assessment is the process through which the credit applicant presents the necessary documentation to the bank in order to obtain a loan. Feder et al, (1980) argues that if bank lending is not properly assessed, there is a higher probability that the borrower will not be able or willing to honor their loan repayment obligations.

**Table 4.4: Credit Risk Assessment**

| Credit Risk Assessment | Strongly Disagree | | Disagree | | Neutral | | Agree | | Strongly Agree | | Mode | Standard Deviation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent | | |
| The Management established a system to identify credit risk before occurrence. | 23 | 19.0% | 22 | 18.2% | 17 | 14.0% | 38 | 31.4% | 21 | 17.4% | 4.00 | 1.40 |
| The management continuously identifies, analyzes and assesses the changes that affect the credit risk management system. | 18 | 14.9% | 49 | 40.5% | 24 | 19.8% | 24 | 19.8% | 6 | 5.0% | 2.00 | 1.33 |
| A bank establish a system of independent, ongoing assessment of the bank's credit risk management processes | 25 | 20.7% | 35 | 28.9% | 29 | 24.0% | 26 | 21.5% | 6 | 5.0% | 2.00 | 1.18 |
| Senior management ensure that there is a periodic independent internal assessment of the bank's credit-granting and management functions. | 17 | 14.0% | 35 | 28.9% | 22 | 18.2% | 26 | 21.5% | 21 | 17.4% | 2.00 | 1.33 |
| All management is aware of potential high credit risk areas and implemented to manage risks. | 24 | 19.8% | 44 | 36.4% | 25 | 20.7% | 22 | 18.2% | 6 | 5.0% | 2.00 | 1.18 |
| Average | | 17.7% | | 30.6% | | 19.3% | | 22.5% | | 9.9% | | |

*Source: SPSS Output,2020*

From the above table, on average about 17.7 %, 30.6 %, 22.5% and 9.9 %of the respondent were strongly disagree, disagree, agree and strongly disagree, respectively. This indicates that, most of the respondents are not satisfied on the credit risk assessment process such as identification and assessment of the changes that affect the credit risk management system, establishment of a system, periodic independent internal assessment of the bank's credit-granting and management functions and aware of potential high credit risk areas (Table 4.4).

### *4.5.3 Credit Approval*

Credit approval is the process of deciding whether or not to extend credit to a particular customer. It involves two steps: gathering relevant information and determining credit worthiness (Ross, 1999). Accordingly, identifying the effect of credit approval process in commercial banks is very vital to improve the credit risk management system. Thus, in this study a total of five questions are asked for respondents.

**Table 4.5: Credit Approval**

| Credit Approval | Strongly Disagree | | Disagree | | Neutral | | Agree | | Strongly Agree | | Mode | Standard Deviation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent | | |
| There is transparent and comprehensive presentation of the risks when granting the loan. | 21 | 17.4% | 53 | 43.8% | 35 | 28.9% | 8 | 6.6% | 4 | 3.3% | 2.00 | 0.95 |
| Approvals made in accordance with the bank's written guidelines and granted by the appropriate level of management. | 32 | 26.4% | 26 | 21.5% | 18 | 14.9% | 32 | 26.4% | 13 | 10.7% | 1.00 | 1.38 |
| There is a clear audit trail documenting that the approval process was complied as well as making the credit decision. | 27 | 22.3% | 19 | 15.7% | 17 | 14.0% | 44 | 36.4% | 14 | 11.6% | 4.00 | 1.38 |
| A bank establish specialist credit groups to analyse and approve credits related to types of credit facilities. | 20 | 16.5% | 44 | 36.4% | 26 | 21.5% | 23 | 19.0% | 8 | 6.6% | 2.00 | 1.16 |
| Credit disbursement approval process establish accountability for decisions taken to approve credits or changes in credit terms. | 23 | 19.0% | 31 | 25.6% | 10 | 8.3% | 29 | 24.0% | 28 | 23.1% | 2.00 | 1.48 |
| **Average** | | 20.3% | | 28.6% | | 17.5% | | 22.5% | | 11.1% | | |

*Source: SPSS Output, 2020*

The average value of all questions was about 20.3 %, 28.6 %, 22.5 % and 11.1 %, respectively. Based on this result, most of the respondents are not satisfied on the credit approval process such as transparent and comprehensive presentation of the risks, approvals in accordance with the bank's written guidelines and granted by the appropriate level of management, establish specialist credit groups and clear audit trail documenting(Table 4.5).

### *4.5.4Credit Disbursement*

Credit disbursement ensures that money is not availed until all approvals and documentation requirements are met. It also ensures that security and other required documentations are obtained before funds are disbursed. Thus, documentations and disbursement are important in the management of credit because they ensure that the bank has proper documentation, collateral and guarantees.

**Table 4.6: Credit Disbursement**

| Credit Disbursment | Strongly Disagree | | Disagree | | Neutral | | Agree | | Strongly Agree | | Mode | Standard Deviation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent | | |
| A bank is operating within sound and well-defined credit disbursement criteria. | 23 | 19.0% | 24 | 19.8% | 26 | 21.5% | 35 | 28.9% | 13 | 10.7% | 4.00 | 1.30 |
| There is overall credit limits at the level of individual borrowers and counterparties. | 14 | 11.6% | 61 | 50.4% | 34 | 28.1% | 8 | 6.6% | 4 | 3.3% | 2.00 | 0.90 |
| The credit disbursement function is being properly managed. | 18 | 14.9% | 42 | 34.7% | 30 | 24.8% | 27 | 22.3% | 4 | 3.3% | 2.00 | 1.09 |
| There is independent review of the credit disbursement and the overall portfolio. | 18 | 14.9% | 40 | 33.1% | 11 | 9.1% | 40 | 33.1% | 12 | 9.9% | 2.00 | 1.29 |
| There is a credit policies framework for guide the credit disbursement activities of the bank. | 40 | 33.1% | 36 | 29.8% | 11 | 9.1% | 29 | 24.0% | 5 | 4.1% | 1.00 | 1.28 |
| **Average** | | 18.7% | | 33.6% | | 18.5% | | 23.0% | | 6.3% | | |

*Source: SPSS Output, 2020*

Based on the above table results, on average around 18.7 %, 33.6 %, 23.0 % and 6.3 % of the respondent are strongly disagree, disagree, agree and strongly disagree, respectively. This reveals that, most of the respondents are not satisfied on the credit disbursement process such as overall credit limits at the level of individual borrowers and counterparties, credit disbursement management, independent review of the credit disbursement and the overall portfolio and credit policies framework for guide the credit disbursement activities of the bank(Table 4.6).

#### *4.5.5 Monitoring and Follow up*

Monitoring and follow up helps keeping a good and to visiting the borrowers' premises to investigate the general state of affairs and maintenance of plant and equipment. Inadequate maintenance is often an early sign of financial distress. Therefore, understanding the monitoring and follow up process is important in order to implement appropriate credit risk management system.

**Table 4.7: Monitoring and Follow up**

| Monitoring and Follow up | Strongly Disagree | | Disagree | | Neutral | | Agree | | Strongly Agree | | Mode | Standard Deviation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent | | |
| There is an adequate policies and procedures for identifying, measuring, monitoring and controlling credit risks. | 30 | 24.8% | 16 | 13.2% | 16 | 13.2% | 39 | 32.2% | 20 | 16.5% | 4.00 | 1.46 |
| A bank has in place a system for the ongoing administration of their various credit risk-bearing portfolios. | 17 | 14.0% | 24 | 19.8% | 23 | 19.0% | 44 | 36.4% | 13 | 10.7% | 4.00 | 1.25 |
| A bank has keep the credit file up to date, obtaining current financial information, sending out renewal notices and preparing various documents. | 26 | 21.5% | 26 | 21.5% | 19 | 15.7% | 39 | 32.2% | 11 | 9.1% | 4.00 | 1.32 |
| A bank has in place a system for monitoring the condition of individual credits, including determining the adequacy of provisions and reserves. | 22 | 18.2% | 38 | 31.4% | 49 | 40.5% | 10 | 8.3% | 2 | 1.7% | 3.00 | .94 |
| A bank has in place a system for monitoring the overall composition and quality of the credit portfolio. | 19 | 15.7% | 28 | 23.1% | 30 | 24.8% | 35 | 28.9% | 9 | 7.4% | 4.00 | 1.20 |
| A bank encourage to develop an internal risk rating system in monitoring and controlling credit risk. | 23 | 19.0% | 57 | 47.1% | 17 | 14.0% | 15 | 12.4% | 9 | 7.4% | 2.00 | 1.15 |
| **Average** | | 17.7% | | 28.6% | | 22.8% | | 23.6% | | 7.3% | | |

*Source: SPSS Output, 2020*

Accordingly, on average value of all questions was about 17.7 %, 28.6 %, 23.6 % and 7.3 %, respectively. Based on this result, most of the respondents are satisfied on the monitoring and follow up process such as an adequate policies and procedures, in place a system for the ongoing administration of their various credit risk-bearing portfolios, keep the credit file up to date, obtaining current financial information, sending out renewal notices and preparing various documents, in place a system for monitoring the condition of individual credits, including determining the adequacy of provisions and reserves and in place a system for monitoring the overall composition and quality of the credit portfolio (Table 4.7).

### *4.5.6 Effectiveness of Credit Risk Management*

An effective credit risk management is very important in the banking business. Credit risk management system could be effective if and only if the above mentioned processes are appropriately done. Thus, in this study the researcher tried to assess the factors that affect the effectiveness of credit risk management system related with the internal process. The following table indicates which one of the components was strongly implemented and effective for credit risk management system.

**Table 4.8: Effectiveness of Credit Risk Management**

| Effectiviness of Credit Risk Management | Strongly Disagree | | Disagree | | Neutral | | Agree | | Strongly Agree | | Mode | Standard Deviation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent | | |
| There is strong credit information system and credit risk management is effective. | 20 | 16.5% | 54 | 44.6% | 27 | 22.3% | 13 | 10.7% | 7 | 5.8% | 2 | 1.07 |
| There is strong credit risk assessment system and credit risk management is effective. | 17 | 14.0% | 57 | 47.1% | 35 | 28.9% | 9 | 7.4% | 3 | 2.5% | 2 | 1.08 |
| There is strong credit approval system and credit risk management is effective. | 13 | 10.7% | 31 | 25.6% | 19 | 15.7% | 38 | 31.4% | 20 | 16.5% | 4 | 1.28 |
| There is strong credit disbursement system and credit risk management is effective. | 11 | 9.1% | 55 | 45.5% | 49 | 40.5% | 4 | 3.3% | 2 | 1.7% | 2 | 0.88 |
| There is strong monitoring and follow up and credit risk management is effective. | 17 | 14.0% | 23 | 19.0% | 14 | 11.6% | 56 | 46.3% | 11 | 9.1% | 4 | 1.25 |
| Average | | 12.9% | | 36.4% | | 23.8% | | 19.8% | | 7.1% | | |

*Source: SPSS Output, 2020*

When we observed from the above table result, on average about 12.9 %, 36.4 %, 19.8 % and 7.1 % of the respondent are strongly disagree, disagree, agree and strongly disagree, respectively. This all reveals that, credit risk management system is not effective due to poor credit information, credit risk assessment and credit disbursement process (Table 4.8).

## 4.7 Correlation Analysis

To find the relationship between dependent and independent variables, correlation analysis is applied. The results were analyzed based on correlation analysis rule as follows: -1 to -0.5 or 1.0 to 0.5 strong, -0.5 to -0.3 or 0.3 to 0.5 moderate, -0.3 to -0.1 or 0.1 to 0.3 weak and -0.1 to 0.1 none or very weak. The correlation coefficients between independent variables and dependent variables are shown in Table 4.9.

**Table 4.9: Correlation Matrix Result**

| | | Credit Information | Credit Risk Assessment | Credit Approval | Credit Disbursement | Monitoring and Follow Up | Effectiveness of Credit Risk Management |
|---|---|---|---|---|---|---|---|
| Credit Information | Pearson Correlation | 1 | .507** | .586** | .584** | .591** | .643** |
| | Sig. (2-tailed) | | .000 | .000 | .000 | .000 | .000 |
| | N | 121 | 121 | 121 | 121 | 121 | 121 |
| Credit Risk Assessment | Pearson Correlation | .507** | 1 | .842** | .710** | .697** | .785** |
| | Sig. (2-tailed) | .000 | | .000 | .000 | .000 | .000 |
| | N | 121 | 121 | 121 | 121 | 121 | 121 |
| Credit Approval | Pearson Correlation | .586** | .842** | 1 | .813** | .737** | .870** |
| | Sig. (2-tailed) | .000 | .000 | | .000 | .000 | .000 |
| | N | 121 | 121 | 121 | 121 | 121 | 121 |
| Credit Disbursement | Pearson Correlation | .584** | .710** | .813** | 1 | .835** | .872** |
| | Sig. (2-tailed) | .000 | .000 | .000 | | .000 | .000 |
| | N | 121 | 121 | 121 | 121 | 121 | 121 |
| Monitoring and Follow Up | Pearson Correlation | .591** | .697** | .737** | .835** | 1 | .875** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | | .000 |
| | N | 121 | 121 | 121 | 121 | 121 | 121 |
| Effectiveness of Credit Risk Management | Pearson Correlation | .643** | .785** | .870** | .872** | .875** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | |
| | N | 121 | 121 | 121 | 121 | 121 | 121 |

**. Correlation is significant at the 0.01 level (2-tailed).

*Source: SPSS Output, 2020*

As shown in Table 4.9, credit information, credit assessment, credit approval, credit disbursement and monitoring and follow up has a positive relationship with effectiveness of credit risk management system and significant at the 1% level of significance. The Pearson correlation coefficient values for credit information, credit assessment, credit approval, credit disbursement and monitoring and follow up with effectiveness of credit risk management were 0.643, 0.785, 0.870,0.872 and 0.875, respectively. This all reveals that, there is a good relationship between independent variables and dependent variables.

## 4.8 Multiple Regression Analysis

Multiple regression analysis is one of the most commonly used multivariate procedures and is used to build models for predicting scores on one variable, the dependent variable, from scores on a number of other variables, the independent variables Terre Blanche, et al, (2006). As the result, in this study, the researcher tried to predict the effect of each independent variable using a multiple regression model in terms of effectiveness of credit risk management (dependent variable) from independent variables such as credit information, credit assessment, credit approval, credit disbursement and monitoring and follow up.

**Table 4.10: Regression Model Summary Result**

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .944[a] | .891 | .886 | .28578 | 1.700 |

a. Predictors: (Constant), Monitoring and Follow Up, Credit Information, Credit Risk Assessment, Credit Disbursement, Credit Approval

b. Dependent Variable: Effectiveness of Credit Risk Management

*Source: SPSS Output, 2020*

Based on the cross section data, multiple regression method is applied to empirically investigate the effect to which credit information, credit assessment, credit approval, credit disbursement and monitoring and follow up can predict the variable effectiveness of credit risk management of system. The adjusted coefficient of determination ($R^2$) shows that the three factors explained approximately 88.6 % of the variation in effectiveness of credit risk management system. This gives the regression line a good fit, while the remaining 11.4 % of the total variation in the effectiveness of credit risk management is accounted by the factors included in the error term (Table 4.10).

**Table 4.11: Model Coefficients Estimation Result**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .168 | .096 | | 1.738 | .085 |
| | Credit Information | .073 | .037 | .079 | 1.969 | .051 |
| | Credit Risk Assessment | .057 | .052 | .064 | 1.097 | .275 |
| | Credit Approval | .280 | .059 | .334 | 4.736 | .000 |
| | Credit Disbursment | .186 | .062 | .199 | 2.994 | .003 |
| | Monitoring and Follow Up | .356 | .057 | .372 | 6.280 | .000 |

a. Dependent Variable: Effectiviness of Credit Risk Management

*Source: SPSS Output, 2020*

The model coefficients estimation result in the above Table 4.11 reveals that the independent variables credit information, credit approval, credit disbursement and monitoring and follow up are found to be positively significant. However, credit risk assessment variable is not significant.

The result indicates that credit information has a positive and statistically significant effect on effectiveness of credit risk management system. The estimated coefficient for credit information found to be 0.073 which is small effect compared with other three variables such as credit approval, credit disbursement and monitoring and follow up.

In addition credit approval is found to be positive and significant with the coefficient value of 0.280 which is also small effect compared with monitoring and follow up. However, it has higher effect compared with credit information and credit disbursement.

For the meantime, the estimated result for credit disbursement is also found to be positive and significant with the coefficient value of 0.186 which is small compared with credit approval and monitoring and follow up.

Finally, the variable monitoring and follow up has a positive effect on effectiveness of credit risk management system with the coefficient estimated value of 0.356. The estimated value shows that monitoring and follow up has more effect on the effectiveness of credit risk management system compared with other variables such as credit information, credit approval and credit disbursement.

In general, this study is also coincide with other findings. According Solomon (2013) point out that the major contributing factors for effectiveness of credit risk management are poor risk assessment, poor monitoring/follow-up, credit culture and relaxed credit terms. Furthermore, Bajpai et.al. (2015) find out the causes for the increase in non-performing loan of the commercial banks in Uganda are poor credit risk management such as poor credit analysis, credit information, credit disbursement and monitoring and follow up.

$$ECRM = c + 0.073CIF + 0.057CASS + 0.280CAP + 0.186CD + 0.356MF$$

***4.8.1 Regression Model Diagnostics Result***

**Normality Test**

One of the assumption of linear regression model is the residual values are need to be normally distributed. As the result, checking the normality of the residual of the model estimated in the above is important. The distribution of the residuals are illustrated in the below figure.

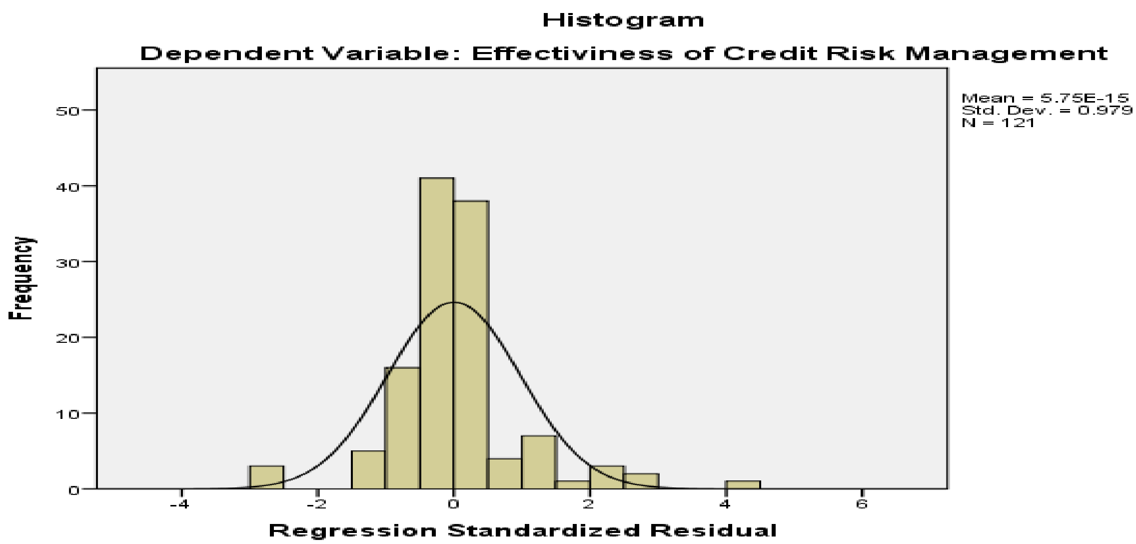



*Figure 2: Normal Test Result*

*Source: SPSS Output, 2020*

As it can be seen from the above figure, the shape of the histogram follows the shape of the normal curve fairly well; there are no residuals out of the normal curve. As the result, we can conclude that the residuals are normally distributed and the model is appropriate (Figure 3).

**Multicollinearity Test**

After the normality test in the regression model, it is important to conduct multicollinearity test. The multicollinearity test is conducted using a basis of VIF value. If the VIF value lies between 1 and 10, then there is no multicollinearity. However, If the VIF value is less than 1 or greater than 10, there is multicollinearity. The multicollinearity test is depicted in the bellow table.

**Table 4.1 : Multicollinearity Test Result**

| | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Tolerance | VIF |
| (Constant) | .168 | .096 | | 1.738 | .085 | | |
| Credit Information | .073 | .037 | .079 | 1.969 | .051 | .597 | 1.674 |
| Credit Risk Assessment | .057 | .052 | .064 | 1.097 | .275 | .278 | 3.602 |
| Credit Approval | .280 | .059 | .334 | 4.736 | .000 | .191 | 5.228 |
| Credit Disbursment | .186 | .062 | .199 | 2.994 | .003 | .216 | 4.634 |
| Monitoring and Follow Up | .356 | .057 | .372 | 6.280 | .000 | .270 | 3.700 |

a. Dependent Variable: Effectiviness of Credit Risk Management

*Source: SPSS Output, 2020*

Based on the above Table 4.14 output, collinearity statistics of VIF, obtained is between 1.674 and 5.228, meaning that the VIF value obtained is between 1 and 10 and it can be conclude that there is no multicollinearity symptom between the independent variables.

**Autocorrelation Test Result**

After the test of multicollinearity completed it is important to examine whether there was no correlation between residual by way of autocorrelation test.

**Table 4.2: Autocorrelation Test Result**

| Durbin-Watson |
|---|
| 1.700 |

a. Predictors: (Constant), Credibility, Usefulness, Ease of Use

b. Dependent Variable: User Satisfaction

*Source: SPSS Output, 2020*

Durbin Watson statistics tests for autocorrelation value ranges from 0 to 4 and as a rule of thumb, the value should be between 1.5 and 2.5 to indicate independent of observations (Garson, G. David, 2010). Therefore, the Durbin Watson value 1.700 reveals that there is no autocorrelation and implies that independent of observation and the model is adequate. In general, the diagnostics test result indicates that the model is appropriate and fulfills all the assumptions of classical linear model (Table 4.15).

**Heteroskedasticity test**

It is important to examine whether there was a difference of residual variance observed by way of heteroskedasticity test. The result is depicted in the below figure.

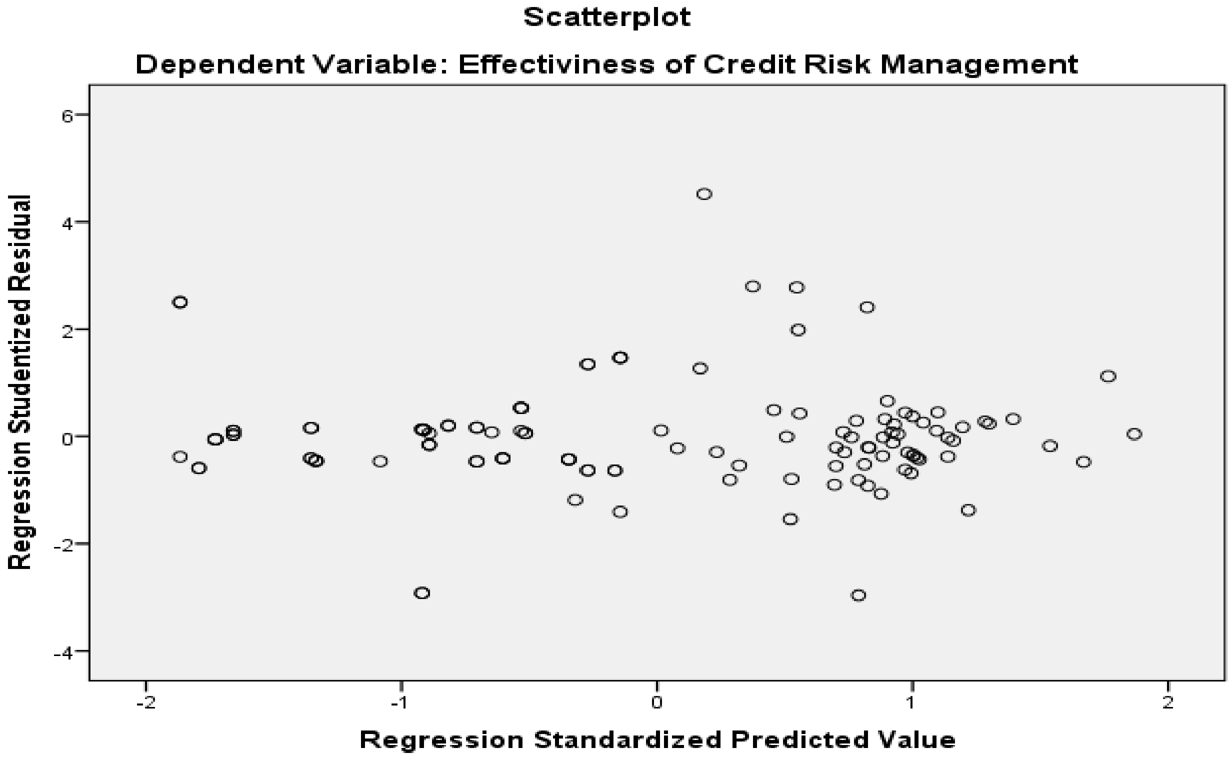



*Figure 3: Heteroskedasticity Test Result*

*Source: SPSS Output, 2020*

Based on the Scatter plot output above, it appears that the spots are diffused and do not form a clear specific one pattern, meaning that there was a difference of residuals. So it can be concluding that regression model does not occur heteroskedastisiy problem (Figure. 4).

# CHAPTER FIVE

## 5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

### 5.1 Summaries of Major Findings

The general purpose of this study is to identify factors affecting on the effectiveness of credit risk management system in commercial banks in Ethiopia. Out of the total questionnaires distributed, 121 were returned with a response rate of 88.8%. Data were analyzed by using descriptive and inferential statistics. Before conducting any statistical analysis, the reliability and validity of the internal consistency test is conducted using Cronbach Alpha, between groups and a total of 31 items. The Cronbach's Alpha recorded scores for items by group as well as in total was greater than the threshold value of 0.7, resulting that all questionnaire items could be considered as reliable as a group as well as in total.

According to the demographic background of respondents, out of the total 121 respondents about 52.9 % of the respondents were male, while the remaining 47.1 % were female. Regarding education level, 63.6 % of the respondents have first degree, 28.1 % have master's degree and the remaining 8.3 % of the respondents have diploma. Therefore, it is possible to say that approximately all the respondents had good education background, resulting majority of the respondents were well educated. The respondents also requested to indicate their working experience. Results indicates that, about 29.8 %, 24.8 % , 23.1 % and 22.3 %of respondents have 5 to 10 years, 10 to 15 years, less than 5 years ad above 55 years of work experience, respectively

Related to factors, the respondents forward their insight towards the issues. Most of the respondents were not satisfied on the credit information, credit risk assessment, credit approval and credit disbursement process. As a result, respondents were not satisfied on financial and credit bureau reports, information systems and analytical techniques, management information and sufficient information to enable a comprehensive assessment of the true risk profile of the borrower or counterparty, identification and assessment of the changes that affect the credit risk management system, establishment of a system, periodic independent internal assessment of the bank's credit-granting and management functions and aware of potential high credit risk areas, transparent and comprehensive presentation of the risks, approvals in accordance with the bank's written guidelines and granted by the appropriate level of management, establish specialist credit groups and clear audit trail documenting, overall credit limits at the level of individual borrowers and counterparties, credit disbursement management, independent review of the credit disbursement and the overall portfolio and credit policies framework for guide the credit disbursement activities of the bank.

However, the respondents were satisfied on the monitoring and follow up process such as an adequate policies and procedures, in place a system for the ongoing administration of their various credit risk-bearing portfolios, keep the credit file up to date, obtaining current financial information, sending out renewal notices and preparing various documents, in place a system for monitoring the condition of individual credits, including determining the adequacy of provisions and reserves and in place a system for monitoring the overall composition and quality of the credit portfolio.

Moreover, the Pearson correlation test result indicates that credit information, credit approval, credit disbursement and monitoring & follow up have a positive relationship with the effectiveness of credit risk management system. The Pearson correlation coefficient values for credit information, credit assessment, credit approval, credit disbursement and monitoring and follow up with effectiveness of credit risk management were 0.643, 0.785, 0.870,0.872 and 0.875, respectively. This all reveals that, there is a good relationship between independent variables and dependent variables.

Based on the multiple regression analysis result, the adjusted coefficient of determination ($R^2$) shows that the three factors explained approximately 88.6 % of the variation in effectiveness of credit risk management system. This gives the regression line a good fit while the remaining 11.4 % of the total variation in the effectiveness of credit risk management is accounted by the factors included in the error term.

Accordingly, the potential influence factors (independent variables) on the effectiveness of credit risk management system (dependent variable) is estimated. All the variables except credit assessment has a positive effect and statistically significant. The estimation coefficient value for credit information, credit approval, credit disbursement and monitoring & follow found to be 0.073, 0.280, 0.186 and 0.356, respectively.

## 5.2 Conclusion

This study was conducted with the intention to examine the factors affecting the effectiveness of credit risk management system in commercial banks. Based on the finding most of the respondents are not agree on the credit information, credit approval and credit disbursement process that commercial banks implemented. Similarly, a correlation and multiple regression analysis reveals that, credit information, credit approval, credit disbursement and monitoring and follow up has a positive effect for the effectiveness of credit risk management system. Positive values in the coefficients indicate that all four independent variables namely; credit information, credit approval, credit disbursement and monitoring and follow up have positive relationship towards the effectiveness of credit risk management system of commercial banks.

## 5.3 Recommendations

The following recommendations are forwarded with the basis of the research findings.

- The finding investigated that credit information is found to be direct, positive and significant effect towards effectiveness of credit risk management system. The exchange of credit information improves non-performing loan ratios, leads to fewer losses through write offs and decreases interest rates for good credit risks and intensifies competition and increases access to finance. Therefore, commercial banks should be consider this important variable and give high emphasis on the credit information in order to meet the effectiveness of credit risk management system.

- The finding also indicates that credit approval has also direct, positive and significant effect towards the effectiveness of credit risk management system. Transparent and comprehensive presentation of the risks when granting the loan and approvals in accordance with the bank's written guidelines is very vital to ensure effective credit risk management system. Therefore, commercial banks should be improve their credit approval process in order to attain the effectiveness of credit risk management system.

- Moreover, the study found that credit disbursement has a positive and significant effect on the effectiveness of credit risk management system of commercial banks. Operating within sound and well-defined credit disbursement criteria and good credit policies framework is an essential backbone of the credit risk management system of the banking sector. Therefore, commercial banks should be steps forward their credit approval process in order to achieve the effectiveness of credit risk management system.

- Monitoring and follow up found to be a positive effect on the effectiveness of credit risk management system. An adequate policies and procedures for identifying, measuring, monitoring and controlling of credit risks is important to have effective credit risk management process. As a result, banks need to have strength their monitoring and follow up of credit management process.

- Finally, the researcher recommends that further studies should have to conduct to identify other factors that affecting the effectiveness of credit risk in the banking sector in Ethiopia.

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# Annex I-Questionnaire

**ST.MARRY'S UNIVERSITY**

**SCHOOL OF GRADUATE STUDIES**

Dear Respondent, I am an MA student at the St. Marry's University. As a partial Fulfillment of the Requirements for the Award of a Degree of Masters in Accounting and Finance, I am conducting a research factors affecting the effectiveness of credit risk management system in Ethiopian commercial banks. The purpose of this letter is to request permission to get relevant information and the kind of experience.

I would like to assure you that any information received will be purely for academic purposes and will be treated in strict confidentiality. You will not be asked to give your name or any other data that could identify you. If you have any questions, please contact me on 0913082301.

Thank you in advance for your time and assistance in this research!!!

**Instruction**

Please read each statement carefully and put a tick mark under the number that most describes each respondent's opinion.

**Part I: Demographic Profile**

1) **Gender**

Female ☐ Male ☐

2) **Age**

18 – 25 ☐ 26 - 35 ☐

36 - 45 ☐ 46 – 55 ☐ Over 555 ☐

3) **Your Education level**

PhD ☐ First Degree ☐

Post Graduate ☐ Diploma ☐

4) **Job Position**__________________________

5) **Number of years with this organization?**

Less than 5 year ☐ 5 – 10 years ☐

10-15 years ☐ Above 15 years ☐

**Part Two: The factors that affecting the effectiveness of credit risk management system of banking industry in Ethiopia**

In this section you are scale up question related to the factors that affect the effectiveness of credit risk management system in commercial banks. Please use a tick mark on your right response.

***SD= Strongly Disagree, D=Disagree, N=Neutral, A= Agree and SA= Strongly Agree***

| NO | Description | SD | D | N | A | SA |
|---|---|---|---|---|---|---|
| | **Credit Information** | | | | | |
| 1 | A bank use financial and credit bureau reports to obtain information about the existing or potential customer. | | | | | |
| 2 | Bank has information systems and analytical techniques that enable management to measure the credit risk. | | | | | |
| 3 | The management information system provide adequate information on the composition of the credit portfolio. | | | | | |
| 4 | A bankhas receive sufficient information to enable a comprehensive assessment of the true risk profile of the borrower or counterparty. | | | | | |
| 5 | A bank has the borrower's repayment history and current capacity to repay, based on historical financial trends and future cash flow projections, under various scenarios. | | | | | |
| | **Credit Risk Assessment** | | | | | |
| 6 | The Management established a system to identify credit risk before occurrence. | | | | | |
| 7 | The management continuously identifies, analyzes and assesses the changes that affect the credit risk management system. | | | | | |
| 8 | A bank establish a system of independent, ongoing assessment of the bank's credit risk management processes | | | | | |
| 9 | Senior management ensure that there is a periodic independent internal assessment of the bank's credit-granting and management functions. | | | | | |
| 10 | All management is aware of potential high credit | | | | | |

| NO | Description | SD | D | N | A | SA |
|---|---|---|---|---|---|---|
| | risk areas and implemented to manage risks. | | | | | |
| | **Credit Approval** | | | | | |
| 11 | There is transparent and comprehensive presentation of the risks when granting the loan. | | | | | |
| 12 | Approvals made in accordance with the bank’s written guidelines and granted by the appropriate level of management. | | | | | |
| 13 | There is a clear audit trail documenting that the approval process was complied as well as making the credit decision. | | | | | |
| 14 | A bank establish specialist credit groups to analyze and approve credits related to types of credit facilities. | | | | | |
| 15 | Credit disbursement approval process establish accountability for decisions taken to approve credits or changes in credit terms. | | | | | |
| | **Credit Disbursement** | | | | | |
| 16 | A bank is operating within sound and well-defined credit disbursement criteria. | | | | | |
| 17 | There is overall credit limits at the level of individual borrowers and counterparties. | | | | | |
| 18 | The credit disbursement function is being properly managed. | | | | | |
| 19 | There is independent review of the credit disbursement and the overall portfolio. | | | | | |
| 20 | There is a credit policies framework for guide the credit disbursement activities of the bank. | | | | | |
| | **Monitoring and Follow up** | | | | | |
| 21 | There is an adequate policies and procedures for identifying, measuring, monitoring and controlling credit risks. | | | | | |
| 22 | A bank has in place a system for the ongoing administration of their various credit risk-bearing portfolios. | | | | | |
| 23 | A bank has keep the credit file up to date, obtaining current financial information, sending out renewal notices and preparing various documents. | | | | | |
| 24 | A bank has in place a system for monitoring the condition of individual credits, including determining the adequacy of provisions and reserves. | | | | | |

| NO | Description | SD | D | N | A | SA |
|---|---|---|---|---|---|---|
| | A bank has in place a system for monitoring the overall composition and quality of the credit portfolio. | | | | | |
| 25 | A bank encourages to develop an internal risk rating system in monitoring and controlling credit risk. | | | | | |

**Part Two: Questions related to the effectiveness of credit risk management system in the commercial banks in Ethiopia.**

Listed below are the questions related to measure the effectiveness of credit risk management system in the commercial banks. Please use a tick mark on your right response.

***SD= Strongly Disagree, D=Disagree, N=Neutral, A= Agree and SA= Strongly Agree***

| | | SD | D | N | A | SA |
|---|---|---|---|---|---|---|
| | **Effectiveness of Credit Risk Management System** | | | | | |
| 26 | There is strong credit information system and credit risk management is effective. | | | | | |
| 27 | There is strong credit risk assessment system and credit risk management is effective. | | | | | |
| 28 | There is strong credit approval system and credit risk management is effective. | | | | | |
| 29 | There is strong credit disbursement system and credit risk management is effective. | | | | | |
| 30 | There is strong monitoring and follow up and credit risk management is effective. | | | | | |

**Thank you for your cooperation!!**