FACTORS INFLUENCING LOAN PORTFOLIO PERFORMANCE OF COMMERCIAL BANKS IN KENYA.

By

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DECLARATION

I hereby proclaim that research thesis is my own work and no university has ever been presented with a similar document by any researcher.

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Supervisor's Declaration

This thesis is hereby presented to you after our approval for examination as Kenya Methodist University Supervisors.

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DEDICATION

I dedicate my work to my family who endured the silence and late nights not forgetting the cost of this quest in every possible way. Specifically I dedicate this work to my wives Christine Nasambu and Aidah Nekesa, children Phabio, Belyn, Emmah, Sheilla, Cecilia and Brighton for their sacrifice and understanding during my absence.

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ABSTRACT

The banking sector is a key source of funding for most businesses. Improved loans portfolio management leads to high performance in functions and activities of an organization. It has an effect on total economy of the country and activities of all organizations. Commercial banks use various avenues to generate their income. Loans disbursed to customer are among many other avenues that are used to generate revenue. However, not all loans disbursed are serviced by debtors. Defaulted loans are on the increase in most Financial Institutions and this causes the banks not to meet their obligation of wealthy maximization. The study therefore sought to investigate factors influencing Loans Portfolio Performance in Commercial Banks of Kenya. Specific objectives were; to establish influence of Credit Management, to determine the influence of Unsecured Loans, to evaluate the effect of Repayment Characteristics and finally to analyze the influence of Technological advancement on loans Portfolio Performance of Commercial Banks in Kenya. Descriptive research design was used. Data collection wassought from Commercial Banks Headquarters in Nairobi. The study was based on census approach as it focused on all the commercial banks listed on Nairobi Security Exchange (NSE),Kenya. For each commercial bank listed, 5 respondents were sought and this provided 55 respondents. The study employed both secondary and primary data. Instruments used to collect data were questionnaires, financial reports of Central Bank of Kenya website and Kenya Bankers Association journals. The analysis of tabulated data employed descriptive statistics correlation and regression with the use of Statistical Package for Social Science (SPSS). The conclusion from the findings indicates that employing proper Credit Management has affirmative and considerable influence on Loans Portfolio Performance of Commercial Banks in Kenya. Unsecured Loans has a significant and positive impact on Loans Portfolio Performance of Commercial Banks in Kenya. Further it was revealed that employing proper evaluation of Repayment Characteristics has significant and positive influence on Loans Portfolio Performance of Commercial Banks in Kenya and that Technological Advancement has significant and positive influence on Loans Portfolio Performance of Commercial Banks in Kenya. Recommendation of the study is that commercial banks should ensure they adopt sound Polices review, carry out proper client functioning credit management department. Further it is recommended that commercial banks should engage more feasible loan security measures intended to lessen loan delinquency ratios which can subsequently encourage positive customer performance.

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ABREVIATIONS AND ACRONYMS

ADB	Africa development bank
ANOVA	Analysis of Variance
ATMs	Automatic Teller Machines
CBA	Commercial Bank of Africa
CFC	Credit Finance Corporation
CORVID	Corona Virus Disease
CRB	Credit Reference Bureau
HRM	Human Resource Management
KBRR	Kenya Banks Reference Rate
KEPSA	Kenya Private Sector Alliance
KYC:	Know Your Customer
MFIs	Microfinance Institutions
MPC	Monetary Policy Committee
NACOSTI	National Commission for Science, Technology and Innovation
NIC	National Industrial Credit
NPLs	Non-Performing Loans
NPV	Net Present Value
NSE	Nairobi Securities Exchange
PHD	Doctor of Philosophy
PwC	Price Water Coopers
ROA	Return on Asset
ROE	Return on Equity
ROI	Return on Investment
SACCO	Savings and Credit Cooperative Society.
SMEs	Small And Medium Entrepreneurs
SPSS	Statistical Package of Social Sciences
U.S.A	United States of America
VIF	Variance Inflation Factor

DEFINATION OF OPERATIONAL TERMS

Commercial bank: Institution of financial activities such as receiving deposits, giving loans, operating foreign exchange in addition to related financial intermediations (CBK act cap 491, 2014).

Credit Management: They are techniques and tactics used by a business to maintain a healthy amount of credit and manage it well (Myers & Brealey, 2013).

Loan Performance: Borrowers loan default rates are used to assess loan performance in commercial banks (Kimani, 2015).

Loan Portfolio: This is the total loans issued through different products given to different types of borrowers (Nguta & Huka, 2013).

Repayment characteristic: Refers to the ability of borrower to repay the loan. The borrower will be able to repay the loan if the investment credit yields a substantial profit (Aizenman & Lee, 2007).

Technological Advancement: The process by which financial institutions use the capabilities of information and communication technology (ICT) to create new products and services as well as new ways of providing banking services. (Gardeva & Rhyne, 2011).

Unsecured loans: Monetary loans that are not secured against the borrower's assets (CBK, 2017).

CHAPTER ONE

INTRODUCTION

1.1 Back ground of the study

Function of advancing loans within banking industry is considered among the most significant functions for the use of funds. For the reason that banks derive their main revenue from the issuance of loans, the managing of loan portfolios utterly affects bank performance (Giesecke, 2014). The loan portfolio is amongst the major sources of turnover and asset buildup. Loan growth is defined as the variation in a bank’s loan portfolio, and growth in a bank's loan book is perceived as an important measure of management performance and shows good bank credit policies (Salas & Saurina 2002). Banks frequently relax credit standards in order to gain a larger market share. Such decisions may lead to a problem with adverse selection and a substantial increase in non-performing loans caused by various risks, such as the issuance of unsecured loans. Undeniably, the big number of non-recoverable advances is the key reason forbank non-performance (Araga, 2011). It is very important to monitor the repayment characteristics of customers to help determine future issuance of loans.

The foremost credit risk characteristic within financial institutions depends greatly on their loan portfolio. It is fundamentally the leading asset base that financial institutions depend on, and loans are the main basis of income (Morsman, 2003). Financial performance is another important area when evaluating potential growth, financial strength and firms' earnings (Richardson, 2002). Banks have been embracing the evaluation of respective risk portfolios by applying the standards laid down (Basel, 2006). The new requirement for banks to model definite risk includes holding capital and taking precautions against nonpayment of liabilities, which is additional to any non-payment risk already included in the bank's value-at-risk model.

The trading book capital system now includes an incremental nonpayment risk charge in response to banks' increasing levels of disclosure. Embracing new technology in capturing and monitoring loan portfolio performance improves default risks.

According to Lloyd (2006), Basel goal is to help e-bankers become better at managing risk, which includes how they set product prices, set aside money for losses, and control how they conduct business. Financial institutions currently use a variety of metrics to assess bank competence and related processes in lending processes in relation to financial performance. Conventionally, functional proficiency is determined by banks using indicators of profitability, i.e., return on investment and yield on assets plus return on equity. Also, financial institutions apply operational ratios, i.e., total operating expenses per output unit and monetary output per staff member (Giesecke, 2014).

In Canada, the principal objective of loan portfolio performance is directed to control strategic risks that are associated with banks' lending activities. A bank's future may be threatened by poor strategic or tactical choices made on the underwriting requirements, loan portfolio, new loan products, or established geographic and demographic markets (Booth, 2009). In South Africa, fund managers are swift in advising banks where to invest and how to collect loan debts cheaply (Sipho, 2013). In West Africa, due to the high competition in the preceding years in Ghana caused by new entrants in the industry locally and abroad, regulations were put in place by the Bank of Ghana in order to offer quality service to differentiate offerings in the market place and create better loan portfolio performance. It's an attempt to bring in new players and keep customers by boosting their trust (Nkuah, 2013).

Locally, Kenya still has banking issues that have disappointed the major banking organizations. According to Waweru and Kalani (2009) research, lending accounts for the majority of financial institutions' financial performance. According to CBK study from 2001, Kenya experienced relatively high levels of non-performing loans thus, 33% compared to otherAfrican countries. NPL ratios towards end of 2000, were lower than those of comparable nations. For instance, South Africa had 3%, which was the lowest among African economies, whereas Zimbabwe had 24%, Nigeria had (11%). Mullei (2003) claimed that banks were subject to statutory management because of the improper management of their loan portfolios, which prevented them from reaching the required minimum level of central capitalization. Thus, lending practices refer to the independent decisions made by financial firms prior to making loans to customers. These procedures include know your customer (KYC) methods, interest rates, collaboration with credit reference bureaus, and credit policy concepts as they relate to this study.

Although banks have had operational issues given variety of causes, one major one is still directly related to inadequate credit risk management (Basel, 1999). Banks should develop risk ratings for various types of credit based on their unique structures and risk characteristics, such as policy review, client appraisal, delinquency management, credit committee, and loan product design. Basel (2006) recommends that a number of metrics, including the debtor's earnings, operating cash flow, liquidity and leverage, and finally, net worth, be matched within credit grading systems.

Self-governing appraisal of lending functions is favored since it offers an objective assessment of the credit value desired (Lloyd, 2006). Enlarged merging in the financial industry has been on the increase in Kenya subsequent to the introduction of technological services such as

mobile banking, registration of micro-finance to operate as deposit-taking organizations and not forgetting the entrance of internet money transfer agents. The changes have reducedcompetition among financial operators not only among themselves but also from non-banking companies (Mwendwa, 2016).

1.1.1 Loans Portfolio Performance

This is the rate of profit or the percentage of return on investment in several loaned products (Geitangi, 2015). The interest gains for banks can be said to be pointers of the effectiveness or ineffectiveness of the banking system, for they separate the interest rate received by deposits made by savers and the loan interest payable. A profitability measure is an indicator for stakeholders that shows what banks generate from investments. Measuring profitability is the most basic measure of the accomplishment of a business. Oballa (2017) claims that the banking sector, being the important source of financing for most businesses, should lend loans to help them achieve their goals. Increase in loans Portfolio performance improves a financial institution's functions and activities.

1.1.2 Commercial Banks of Kenya

The existence of commercial banks began around end of 19th century. The National Bank of India established itself in Kenya in the year 1896. This was after the establishment of British colonialism. In the banking industry, we have three tiers. The first top tier has six banks, which control about 50% of the niche market. The second tier has 16 banks controlling 42% of the market share, and the third tier has 20 banks. These are small private banks, controlling 8% of the market share. Loans Portfolio provides information on loan position and cash flow, which aids in economic decision-making. Loans Portfolio Performance

envisages the production of a loan portfolio statement. The goal of loans portfolio is to make economic decisions based on loan portfolio position and cash flow information.

The loan portfolio statement will also show how effectively the bank has taken a keen interest in loans, which is the key source of commercial banks. The banks and other mortgage firms disburse large amounts of money in the form of loans. Characteristically only 80% of the initial price of the property that is recovered plus interest over a stated time frame. Today, thedeveloped nations have advanced mortgage of financing systems that flow funds from lenders to those that are in need of them through loan markets. However, in undeveloped countries, despite its recognition in economic and social importance, loan funding still remains under- developed due to lack of steady inflation and employment (Nanyuki & Omar, 2016).

1.2 Statement of the Problem

Following Kenya's erratic economic performance, maintaining financial performance in the banking industry has become difficult because new and existing commercial bank loans are becoming more expensive. Banks raise interest rates for borrowers with previous negotiated programs. Solidity in a country's financial industry is critical to ensuring long-term economic growth. This is because expansion increases client trust in the financial system. However, following the 2007 economic crisis, the worldwide banking industry has faced reduced financial performance due to an increase in bad debts. Many studies have been conducted that have frequently linked the incidence of banking crises to the significant figure of non- performing loans in financial institutions plus insolvent enterprises (Fofack et al., 2021). For example, when East Asia was going through financial and banking Crisis in 1997, 60 banks in Indonesia failed due to non-performing loans, which accounted for almost 75% of bank loan

portfolios (Capozza & Thomson, 2006). This is one of the indicators that the type of loan portfolios held by banks might suppress financial performance at one point in time.

A study commissioned by Central Bank of Kenya (2017), to ascertain the impact of loans on growth of commercial banks' loaning is arguably the great significant of most banking undertakings. The returns assessed on loans is considered as primary source of commercial bank's earnings plus cash flows, thereby stabilizing its financial performance. Kirui (2014) investigated on how non-performing loans affect the financial health of Kenyan commercial banks. In the study, it was found that non-performing loans (NPLs) have an impact on how well commercial banks function financially. According to this report, credit reference bureaus should give necessary information to commercial banks about loan borrowers and lessen the impact of serial loan defaulters. The study, however, was unable to take into consideration the default rate in each loan portfolio component or how each loan portfolio component affected the financial performance of these banks.

Credit management is recognized as a significant process in all financial institutions. (Gatuhu, 2013). Unsecured loans have no security, such as collateral, against which banks can secure their money disbursed in the form of loans (Khole, 2014). This type of credit exposes the banksto the greatest level of credit risk (Araka et al., 2018). The generation of information or the discovery of knowledge is linked to technological advancement that advances the understanding of technology. Technology is among the major factors that push organizations tochange (Obara, 2018). Ongore and Kusa (2013) studied the determinants of financial performance of commercial banks and revealed various elements that affect financial performance; among various considerations were capital adequacy, asset quality, management efficiency, liquidity management, and other macroeconomic issues. The CAMEL model was

widely employed to determine qualities of loans made available by financial institutions. However, this study did not use all exhaustive factors, emphasizing the necessity of this study in further looking at other factors affecting loan portfolio performance.

1.3 Objectives of the study

1.3.1 General Objectives

The main objective of this study was to investigate the Factors influencing Loan Portfolio performance of Commercial Banks in Kenya.

1.3.2 Specific Objectives

The specific objectives were;

1) To establish the influence of Credit Management on Loans Portfolio Performance of Commercial Banks in Kenya.
2) To determine the influence of Unsecured Loans on Loans Portfolio Performance of Commercial Banks in Kenya.
3) To evaluate the effect of Repayment Characteristic on Loans Portfolio Performance of Commercial Banks in Kenya.
4) To analyze the influence of Technological Advancement on Loans Portfolio Performance of Commercial Banks in Kenya.

1.4 Hypotheses

The following hypothesis were tested using a null hypothesis. A null hypothesis defines that there is no real relationship or difference that exists, and any relationship between two variables or differences between groups is merely due to chance or error (Mugenda, 2009).

$H0_1$: There is no significant relationship between Credit Management and Commercial Banks' Loan Portfolio Performance in Kenya.

$H0_2$: There is no significant relationship between Unsecured Loans and Commercial Banks' Loan Portfolio Performance in Kenya.

$H0_3$: There is no significant relationship between Repayment Characteristics and Commercial Banks' Loan Portfolio Performance in Kenya.

$H0_4$: There is no significant relationship between Technological Advancement and Commercial Banks' Loan Portfolio Performance in Kenya.

1.5 Significant of the Study

1.5.1 Commercial Banks

Outcome will be beneficial to Commercial Banks such that it shall provide acumens on significance of practicing good loans Portfolio Performance in the banking industry to improve loans Performance.

1.5.2 Policymakers

The policy makers will benefit by gaining from this study finding to make appropriate policies in regards to loans appraisal and debt collections.

1.5.3 Academicians

This study shall likewise assist the academicians interested in this thesis as a way of reference.

1.6 Limitations of the Study

The challenge of distributing questionnaires during this time of the COVID pandemic was experienced by the researcher. The other limitation was the unwillingness of some of the sampled participants to respond to the study due to their work schedules. Some of the sampled

employees had a fear of being seen as exposing confidential information about their organization.

1.7 Delimitations

To overcome the challenge of distributing the questionnaires, the researcher opted to send the questionnaires through email. To overcome the challenges, the sampled respondents that were unwilling to participate in this study due to their work schedules, the researcher requested permission from the administration to conduct the study and also explained to respondents the importance of information for the study and that any information given shall be treated as confidential.

1.8 The Scope of the Study

The study concentrated on the factors influencing the loan portfolio performance of commercial banks in Kenya. The study concentrated on four determinants of loan portfolio performance, which are; credit management; unsecured loans; repayment characteristics; and technological advancement on loan portfolio performance of commercial banks in Kenya. The study was carried out at the headquarters of 11 banks based in Nairobi, targeting various departmental managers at the time of the study, i.e., credit managers, operation managers, business banking supervisors, loan portfolio managers, and branch managers). The time of the study was from November 2020 to January 2021.

1.9 Assumptions of the Study

It was assumed by the study that respondents and participants cooperated and understood the concept of loan portfolio performance. To mitigate this, the researcher administered pilot testing by the use of the questionnaire to ensure the questions were well understood. This studyassumes that the researcher managed to access all targeted respondents despite the challenges

of the Corona Virus (COVID-19) and the social distance by using an electronic questionnaire. Lastly, the study assumes that sharing information was not a challenge. To mitigate this, the researcher assured respondents of confidentiality to information provided and shall be reserved only for research purpose.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter gives a review of literature focusing on factors influencing loan portfolio performance in commercial banks. It's about theoretical review, empirical studies, conceptual framework, framework for operationalization, review of the literature summary, and research gaps. The literature review focuses on research that has already been done on the performance of loans portfolios in commercial banks of Kenya.

2.2 Theoretical Framework

The theoretical framework embraces the theories which support this research. They include: Information Asymmetry theory, Quantitative theory of consumer credit with risk of default, Credit Rationing theory and Diffusion of Innovation theory.

2.2.1 Profit maximization theory

Adam Smith's work in, "The Wealth of Nations" can be traced back to profit maximization theory (Abdullah, 2015). Any businessperson who owns his or her own company, according to Adam Smith, will act in self-interest for profit maximization and thus increase the collective benefit to society. A company achieves its objectives through the medium of profit, specifically by converting its resources into goods and/or services and then selling them to customers for a profit. In this regard, the firm's survival is dependent on profit; unless earnings are reused to generate future profits as a replacement of resources, firms will eventually fail (Kumlachew, 2020).

Understanding market competitive dynamics requires an understanding of the patterns of firm entry and survival, including the number and size of entrants, the length of their persistence, and the market share they accrue through time. By exerting competitive pressure on existing businesses, new competitors enter markets and bring new products and procedures. Survival in the market is difficult, while entry is straight forward (Esteve-Perez & Mainez, 2008). Profits are generated by businesses (and sometimes losses). A variance between a business's revenue and all costs, explicit and implicit, incurred to produce the goods or services sold is known as pure economic profit.

As a result, a true measure of economic profit should subtract the "opportunity cost" for all inputs, i.e. the worth of the element in its best alternate usage. As the management team gathers resources required to generate a specific output, it is reasonable to assume that their goal is to maximize the net expected profit from their activity over the long run. Peja and Vranceanu (2014) say that managers ought first to pick on the least expensive combination of factors for each level of output, given the current state of technology and inputs. This will help them get the highest predicted returns.

Therefore a precise measure of economic income ought to subtract, all inputs, the opportunity cost, a factor in its best alternate use. The management team gathers together the resources required to produce a given output in firms they manage. It is therefore realistic to believe that their aim is to maximize the net anticipated profit from their activities after a long run period. Maximizing projected proceeds means that, use of available technology and inputs, the management ought first to pick on the least costly combination of factors for each production level (Peja & Vranceanu, 2014).

Profits are primary determinant of firm survival, therefore this makes the theory to be relevant in this study. The bank's managers expects to maximize returns, which translates to higher profits at lesser costs. Firms pursue their goals via medium of their profit, by converting the resource into goods and services which they sale to customers to earn profits. This theory underpins the loan portfolio performance construct used by Kenyan commercial banks.

2.2.2 The Theory of Information Asymmetry

Spence (1973) formulated the theory of information asymmetry that is concerned with choices in transactions where one partner is better placed with information compared with the opponent party. The outcome creates an imbalance of supremacy in a transaction which results in market failure. Information asymmetry refers to a kind of accessibility to information about a particular fact or knowledge. This means that it is not easy for everyone to access the information and not possible for everyone to be aware of what is happening. The selection problem was brought up by Stiglitz (2000) through his essay, "The Contributions of Economics of Information to Twentieth Century Economic. He described the selection problem as two sides in a manner where one party is the informed one who signals information while the other one is deemed as unacquainted and thus monitors the hinted information (Stiglitz, 2000).

Signaling denotes actions whose final aim is to reduce information asymmetry amongst economic agents. Spence (1973) went on to state that, for reliability and effectiveness to exist, signaling has to fulfil two conditions. One signal change should be costly, else the economic go-betweens continually amend their signals with the goal of increasing their gains. Secondly, it’s essential and not adequate, for a signal modification to be negatively related to the quality, so that higher quality economic agents can amend the indicators at a lower cost compared to low-quality agents. Information asymmetry has a significant influence on bank loaning, but

limitations exist in certain businesses when it comes to bank lines for liquidity replacement (Hardin et al., 2010).

High information asymmetry influences a money lender's will to give credit. Extra risk arises as a result of the improbability of an organization's level of performance combined with larger variability within investment opportunity. The huge percentage of correlated monitoring charges is mostly charged to borrowers through raised interest rates with the high cost of data collection, and this leads to other borrowers' limiting use of lines Where monitoring is imperfect but lenders are not able to eliminate information asymmetry, Sacco credit can be restricted for opaque companies (Jin & Leslie, 2003).

Adverse selection and moral hazard problems exist in loaning activities and thus affect banks. Japelli and Pagano (2010) argue that moral hazard arises at the time creditors have no means of observing borrowers' actions, which might interfere with the probability of loan repayment. A borrower might shift funds borrowed for the intended purpose to a different unprofitable project just to increase personal power or stature. The opportunistic behavior of borrowers is a moral hazard to financial institutions (Japelli & Pagano, 2010). Although lenders try to place restrictions and to monitor the borrowers to prevent them from engaging in behaviors that might hinder them from paying loans, it becomes so expensive to enforce. This theory is related to the study in such a manner that credit valuation process is sometimes done using inaccurate information and it negatively influences bank performance. The theory underpins the construction of Credit Management.

2.2.3 Quantitative Theory of Consumer Credit with Risk of Default

The theory was developed by Nakajima, et al. (2006). The evaluated overall balance classic of unsecured customer credit integrates the main characters of United States consumer bankruptcy

statutes and imitates the main experiential characteristics of unsecured consumer borrowers in the U.S.A. This model confirms the following facts: that borrowers use courts to file for bankruptcy in order to evade payment of loans and thus become free from loan defaulters. The filing also gives protection to any current and future income from the debtors. However, post-bankruptcy denies a house a future unsecured loan for 10 years, and the affected are mostly these poor homes that are unable to pay. The theory supports the objective of unsecured loans, which affects loan portfolio performance in commercial banks.

2.2.3 Credit Rationing Theory

Freimer and Gordon (1965) were the authors of this theory, but Jaffee and Modigliani (1969) described credit rationing to be a circumstance whereby the need for commercial advances surpasses the resource of these advances as per the commercial loan rates stated by banks. Interest rate charges are not enough to cover outstanding requests for loans in the market. They further argue that "credit rationing" is a condition where moneylenders are reluctant to loan extra money to borrowers regardless of the higher interest rate that banks might charge.Hodgman (1960) defines credit rationing as one that persists in a rational equilibrium framework, the exemplary view of how creditors appraise prospective borrowers based on the strength of their predictable return ratio. It is also assumed that we have maximum limit repayment which a borrower can actually afford and this determines the amount approved by the lender to the debtor irrespective of interest charged. Ultimately, projected losses were too excess compared with projected return. There was a lot of debate on this model in subsequent years.

Miller (1958) reasoned that Hodgeman’s breakdown was not made reliable with coherent anticipations among the borrower and lender by including bankruptcy costs spent by the lender

just in case the borrower defaults. The actual meaning of the Hodgman work was nevertheless proved as a significant theoretical goal by objectively elucidating why credit rationing might continue as an equilibrium phenomenon. The reason why lenders exist is that screening and monitoring of borrowers is done competently compared to the rest of investors (Allen & Santomero, 1997). Private information is gathered professionally from borrowers and used by the lender when assessing the repayment capacity of the borrower (Freixas & Rochet, 2000). There is professional management when it comes to money and deposit accounts handled in financial institutions. They also possess enormously strategic information on businesses' incomes and expenses and also how businesses develop (Diamond & Rajan, 2001). Regardless of this surplus of information relationships among banks, businesses are not perfect in issuing loans to borrowers.

Equilibrium rationing is credit rationing by which the market has become completely attuned to all publicly. An example is when lenders ration credit freely, access information while demand for loans at market interest rates are higher compared to supply (Diamond & Rajan, 2001). Credit rationing increases when a bank charges same interest rate to all type of debtors as it is too expensive to differentiate between categories of borrowers by screening them perfectly (Stiglitz & Weiss 1981). Banks are able to segregate the borrowers to a given extent. However, they are in touch with only two types of borrowers. Stiglitz and Weiss (1981) explained that adverse selection and credit rationing will always arise as long as banks use collateral. It is argued that with low-risk, the borrower expects a lower rate of return than average. This makes them poor compared with those that go for high-risks. Low-risk borrowersmay consequently be unable to afford adequate collateral. This theory is related to this study as it endeavors to investigate how sharing of information on the repayment characteristics of

the borrowers helps determination of who has access to credit, hence bringing change in loan portfolio performance of banks. The theory underpins the construction of repayment characteristics.

2.2.4 Theory Diffusion of Innovation Theory

The above theory was emulated by Rogers (1995) and is popularly referred to as the information systems investigation to clarify consumer embracing of the new technologies. The theory is a technology-related theory that attempts to explain how, what, and how quickly knowledge or concepts spread (Bianchi et al., 2017). The theory gives an explanation of how innovations spread and take place in a community or population. An innovation can be defined as a concept, idea, or object of behavior that is considered new by the audience. Innovations' diffusion takes a different approach as compared to other theories of change. Innovationdiffusion theory considers change as a key factor in reinvention or evolution of behaviors and products so as to better address the needs and requirements of groups and individuals. According to Bianchi, et al. (2017), innovations themselves change, not people who change. (Stieninger & Nedbal, 2014). It is stated that innovation diffusion outlines the process of wherea service, a product, or knowledge of their use and utilization moves from the source, like a research and development department, to a reception point, leading into classical process descriptions of processes, commercialization, and adoption.

Innovation diffusion is a very important process in ensuring innovations' success. Many times, people make assumptions that new technologies and new inventions used in specific situations diffuse themselves because they offer some benefits to the adopters. Technology diffusion is similar to technology innovation in that it puts emphasis on new knowledge, processes, and product development as well as the transfer of government-oriented technology that most of

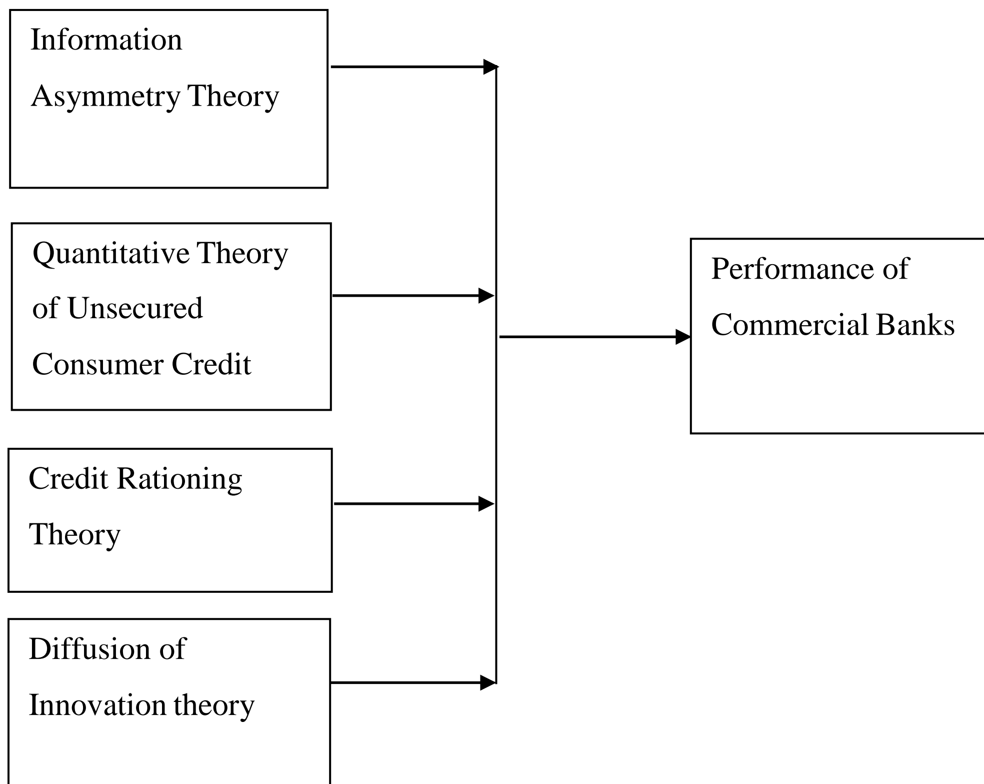
the time seeks to shift advanced technology out of research and development institutions and laboratories to the outside world for commercial use. When end users are introduced to change in technology product, a variety of factors tend to influence them in decision makiing on how and when to use it. It is also assumed that when one creates an intent of action, nothing will stop them from acting without limitation. This theory relates to the study since it refers to technological advancement in which banks are using technological means like ATMs, mobiles, agency banking, and other online banking services to enhance delivery of services.

2.2.4 Theoretical Framework

The framework consists of the following theories are relevant to this study: information asymmetry,quantitative theory of unsecured loans, credit rationing and diffusion of innovation. This is shown in figure 2.1 below

Figure 2. 1.

Theoretical Framework



Adopted by Jeffrey D. Sachs and John W. McArthur (2018)

2.3 Empirical Review

Empirical Review gives evidence sought from similar studies on Credit management, Unsecured loans, Repayment characteristics and Technological advancement on loans Portfolio Performance in banks.

2.3.1 Credit Management

Credit management is among the sensitive areas of concentration in financial firms that deal with credit and needs to be given a lot of attention. It is a way that guarantees that borrowers will pay back the products and services rendered to them. (Gatuhu, 2013). In her empirical study, Gatuhu (2013) investigated the effect of credit management on the financial

performance of microfinance institutions in Kenya, using descriptive survey design on a population of 59 MFIs. The outcome of the study established that appraisal of clients, control of credit risk, and policy on credit collection had a strong relationship and therefore influenced the financial performance of MFIs. However, this study was conducted on an MFI rather than a commercial bank.

A study conducted by Kipkirui and Omagwa (2018) examined the impact of credit management techniques on the financial results of Microfinance Institutions in Nairobi's Central Business District. A descriptive survey design was used on 165 employees of MFIs as the target population. The study employed the use of primary data by using questionnaires. Multiple regression and descriptive analysis approaches were employed. It was established thatcontrol of credit risk, appraisal of clients, policy on credit collection, and credit terms significantly explained variations in financial performance of the MFIs with a positive relationship to financial performance. MFIs were able to improve their financial results by investing more in credit practices management. This study concentrated on MFI and did not touch on commercial banks.

Mutua (2016) sought to evaluate the effect of Credit Risk Management on financial performance in Savings and Credit Societies in Kitui County. A descriptive design was used to research a target population of 28 SACCO Societies in Kitui County. Questionnaires were applied for primary data. In the study results, it was concluded that a very strong positive affirmative association among Mornitoring of Credit and Financial Performance of SACCOs existed. Further, the study established that loan defaulters contributed very strongly to the performance in SACCOs. This study was conducted on SACCOs whereas the current study was conducted on commercial banks

2.3.2 Unsecured Loans

Unsecured loans are loans issued by lenders to small-scale borrowers and no collateral, such as assets, is used when approving the loans (Khole, 2014). Unsecured loans are of high risk to the banking sector and expose the sector to credit risk (Araka et al., 2018). Muthee (2016) did a study on management practices of unsecured loans at commercial banks. Descriptive research design was applied on a target of 32 staff members for CFC Stanbic as respondents and adopted a purposive sampling technique. The research study used primary data and applied self-administration questionnaires to respondents for the purpose of data collection. The conclusion was that the credit approval process and strict attention to credit memo provided a great level summary of the demand for loan size limits to fresh borrowers with no collateral, thus justifying the banks' exposure. However, the study was done on an MFI and not a commercial bank.

Ninga, et al., (2019) carried out a study to found out the influence of unsecured commercial bank loans on the financial performance of savings and credit cooperative societies in Kenya. The study's main goal was to find out how unsecured commercial bank loan amounts and interest rates affected the financial performance of savings and credit cooperative societies. The findings revealed that unsecured commercial bank loan amounts and interest rates has a positively and statistically major impact on the performance of Kenyan SACCOs. The study was done on a SACCOs and did not involve commercial banks. The current study was doneon commercial banks of Kenya.

Khole (2014) did research on the association between unsecured lending and loan performance of commercial banks. Using correlation and descriptive research design, the study targeted

population of 42 licensed commercial banks. Secondary data was applied being the basis to data analysis. The result shown existence of a strong positive association between unsecured bank loans and commercial bank loan performance. Further, it was noted that commercial banks have changed and are now targeting small savers by inducing them with personal loans that were initially given by co-operative societies. Today, retailers and individuals are being begged by commercial banks to take unsecured loans. However, the study was done on 42 commercial banks and not on the 11 listed banks with the NSE.

2.3.3 Repayment Characteristics

Repayment characteristics refer to how creditors appraise prospective debtors based on the strength of their projected return ratio. It is also assumed there is a level of repayment that a borrower can actually afford, and this determines the lenders' will of approval to a borrower regardless of interest charged, and this might eventually affect the projected losses to become too great compared to the projected profit. (Hodgman, 1960).

Cowan and Cowan (2006) conducted a survey in Canada on the financial institutions' attempts to reduce the rate of default for small business lending. The study employed a descriptive research design to target 24 financial institutions. Questionnaires were adopted to collect data, and applied descriptive statistics for analysis. It was proven by the study that there existed a positive correlation between repayment and financial performance. Further, the study found that an effectively developed and managed credit score helped check the default rate of the borrowers, thereby improving the financial performance of those business institutions. The study also revealed repayment meant the availability of more funds for onward lending to othercustomers, which in turn increased the profitability of these institutions. The study further argued that low default rates among the borrowers also helped the lending institutions to relax

some of the lending regulations, thereby enhancing access to credit. This study was nevertheless carried out in a developed country with an advanced economy. It also focused on small businesses rather than commercial banks. The present research centers on Kenyan commercial banks.

Bhardwaj and Sengupta (2008) conducted research about Impact of Repayment to performance in Indian banks. The research, concentrated on 26 commercial banks at their headquarters in New Delhi. The study applied primary data which was sought from the lenders evaluating the borrowers' applications using their past default history as a benchmark for lending. This information was acquired from credit agencies and bureaus. The information primarily consists of the prior credit history of debtors. According to the study, there was a positive significant relationship among repayment and financial performance. This study was, however, carried out in India, which has a long history of banks and micro-finance institutions, which are highly developed, unlike Kenyan banks.

In his empirical study, Ochungo (2013) investigated factors affecting loan repayment on clients of Barclays Bank in Kenya and used descriptive research design on population of 78 respondents. The findings revealed a significant correlation existed between individual debtors'factors and loan repayment among Barclays bank clients. It was established that there existed a significant correlation between loan factors and loan payment within Barclays Bank clients in Kenya. An obligation to manage bank borrowers' loan use and repayment should apply to ensure effective and efficient management of credit risk so as to match loans with their ability to pay.

An empirical study by Maina (2016) examined the effects of lending practices on the financial performance of commercial banks, using a sample of all registered commercial banks within

Nairobi by a structured questionnaire. The outcome on research established that Know Your Customer (KYC) measures were particularly helpful in protecting commercial banks against publicity for pessimistic credit dealings with incompetent borrowers. Research outcomes established that guidelines on credit policies were fundamental in improving operations of lending effectiveness. They also proved the existence of a substantial correlation among credit policy guidelines and the financial performance of commercial banks. According to research, credit policy guidelines identify the certified functional model that a commercial bank functions in when performing all dealings related to lending services, and as a result, specialists, clients, and researchers add offers on paramount policy direction.

2.3.4 Technological Advancements

Technological advancement can be defined as the discovery of new knowledge that helps improve the understanding of technology. Technological know-how is among the major factors that push organizations to change (Obara, 2018). Technological advancement has provided banking history with a kind of directionality. Technology is a major driving force in a firm's major success. Moffat (2017) says that banks' use of technology has made it easier for them to offer high-quality services and has improved their overall performance.

Ngugi and Karina (2013) did research on the effects of technological innovation strategies on the performance of commercial banks in Kenya. A descriptive research methodology was used to study on a population of 43 managers in commercial banks, using questionnaires as a tool for data collection. The study revealed that product innovations had an effect on the performance of commercial banks. Additionally, the result suggested that product changes made some impact on the bank's profitability as well as product repositioning. There was a further discovery that when process innovation strategies are applied, i.e., reduction of costs

and adherence to guidelines, they contribute to the bank's profitability. Overall, the establishment found that adoption of innovation strategies had some great impact on the performance of banks.

Wachira (2013) empirically investigated the effects of technological innovation on the financial performance of commercial banks. By employing census research and the use of a descriptive cross-sectional design, he researched commercial banks across Kenya. The research study undertaken employed primary and secondary data. The results of the research confirmed the positive impact of technological innovations. The research disclosed that good customer care by employees within banks embraced technological improvement. The study emphasized that it was a necessity for financial institutions to unceasingly spend on technological inventions to empower them to survive competitively in the market.

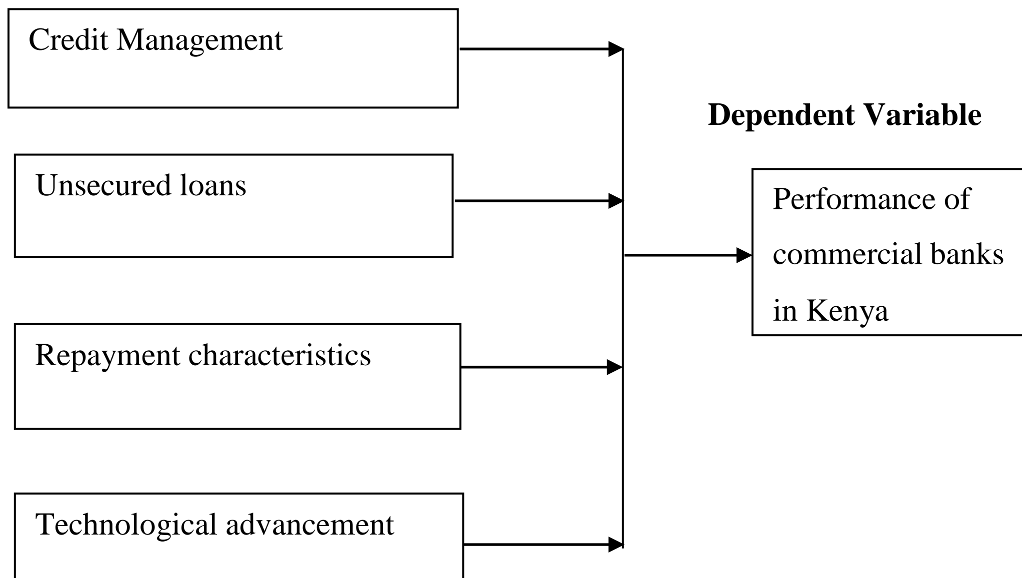
An empirical analysis was done by Mwendwa (2016) on the Impact of Technological Innovation on Organization`s Performance. Researcher applied descriptive research design to do research on the 20 registered commercial banks in the Meru County government. Collectionof data was done using questionnaires. The study applied descriptive and inferential statistical analysis techniques. It was established that financial performance of commercial banks was positively affected by innovation. If adopted, innovation has high potential for financial performance in banks. Furthermore, it was observed that innovation versatility results in an improved acceptance rate between the banks and customers if the acceptance is embraced by both banks and customers. The study recommended that technology innovation, if well invested in by banks, helps to cut down on costs.

2.4 Conceptual Framework

This shows a connection between the independent variables and dependent variables. Figure 2.1 reveals Credit Management, Unsecured Loans, Repayment Characteristic and Technological Advancement as the independent variables while performance of commercial banks is indicated as dependent variable.

Figure 2. 2.

Conceptual Framework



Source: (Novak & Gowin, 1984)

2.4.1 Credit Management

Credit management means management of finances, especially debts, so as to avoid the tail of creditors lurking behind your back. Procedure of credit collection begins by evaluation of credit worthiness of loan applicant and conducting business or project feasibility to see if it will generate funds to repay the loan amount. Credit administration is involved in decision

making of cumulative credit line that would be extended to a particular customer. The procedure involves assessing those who qualify to receive loans. It involves the collection of information pertaining to a potential client's current monetary position and credit reputation, which reveals the character of a client's ability to commit and additionally, insurance esteem (Nsiah, 2014).

2.4.2 Unsecured loans

Unsecured loans are mostly known as personal loans; they are not supported by any collateral other than the borrower's credit worthiness. Sometimes known as signature loans, It is different from other loans issued by commercial banks by the means by which they get money for repayment, mainly from the salary of the borrower. A loan that is serviced by wages or salary other than from the assets purchased is called a personal loan (Nangila, 2014).

2.4.3 Repayment Characteristic

Repayment characteristics refer to how creditors appraise prospective debtors based on the strength of their expected return ratio. It is also assumed there is a level of repayment that a borrower can actually afford, and this determines the lenders' will of approval to a borrower regardless of interest charged, and this might eventually affect the projected losses to become too great compared to the projected profit. (Hodgman, 1960).

2.4.4 Technological Advancement

Technological advancement can be defined as the discovery of new knowledge that helps improve the understanding of technology. Technological know-how is among the major factors that push organizations to change (Obara 2018). Technological advancement has provided banking history with a kind of directionality. Technology is a major driving force in a firm's

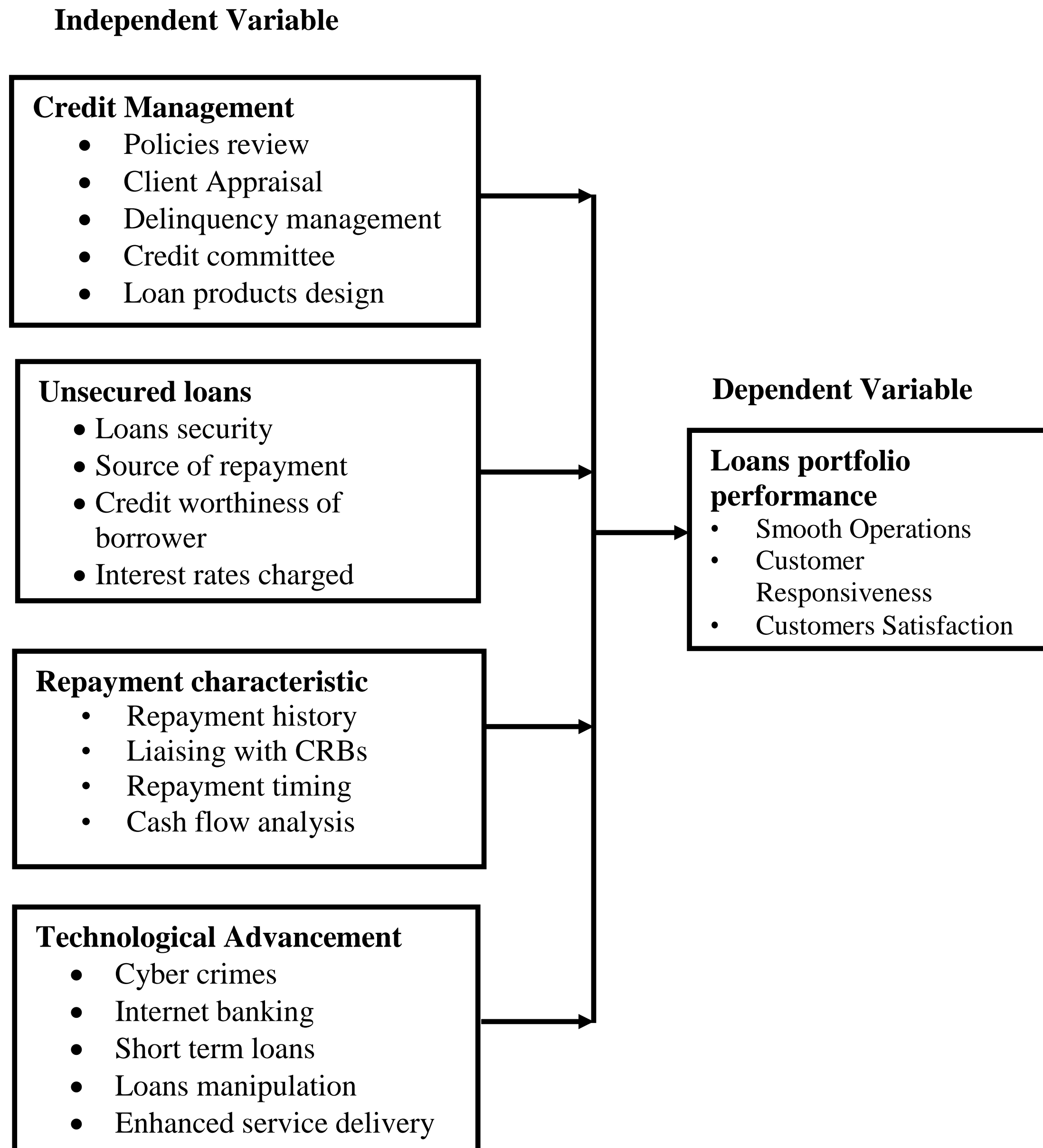
major success. Use of technology by banks has increased the delivery of high quality services and has subsequently enhanced banking performance (Moffat, 2017).

2.5 Operationalization Variables

This covers the dependent variable, independent variables and parameters which are used for measurement purposes. The diagram is shown in figure 2.3 below:

Figure 2. 3.

Operationalization Framework



Source: (adopted and modified from; Bagozzi & Warshaw, 2007)

2.6 Literature Review Summary of and Gaps

This chapter concentrates on past studies related to loan portfolio theories and theories of performance that relate to the study. The theories studied include: Asymmetric Information Theory, Quantitative Theory of Unsecured Consumer Credit, Credit Rationing Theory, and Technological Acceptance Model Theory, which are found to be meaningful and significant to explain the relationship between Loan Portfolio Performance and Credit Management, Unsecured Loans, Repayment Characteristics, and Technological Advancement.

The Credit Management Research Study focused on Policy Review, Client Appraisal, Delinquency Management, Credit Committee, and Loan Product Design. Under Unsecured Loans, the study focused on loan security, source of repayment, credit worthiness of borrowers, interest rates charged and external forces. Under Technological Advances, the study focused on Cybercrimes, Internet Banking, Short-Term Loans, Loan Manipulation, and Enhanced Service Delivery.

It is clear from this that there are research gaps regarding factors that affect the Performance of the loan portfolio of commercial banks in Kenya. It is not clear what the exact relationship between loan portfolio performance and credit management, unsecured loans, repayment characteristics, and technological advancement.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology consists of methods and process applied in this research. These are research design, target population, sampling design and sample size, data collection process, pre-testing instruments, reliability, validity, data analysis and ethical considerations.

3.2 Research Design

The process and conditions of data collection and analysis for the purpose of targeting and combining relevance in research purposes with economy are referred to as research design. It relates to information collection in order to respond to queries about the present situation of an occurrence. (Kothari & Garg, 2014). A descriptive research design was used in this research because it permits a whole explanation of the phenomena, thus guaranteeing that minimum bias is secured during data collection and minimizing mistakes when interpreting data collected (Saunders et al., 2019). It involves the gathering of quantitative information from respondents. The study collected data from various managers of commercial banks in Kenya on the factors influencing loan portfolio performance in commercial banks using questionnaire forms.

3.3 Target Population

A population is the entire collection of items that the researcher uses in order to come up with inferences (Bernard, 2011). The target population was 11 commercial banks of Kenya listed on the NSE (Appendix 111), Central Bank of Kenya (2019), Kenya where the researcher sought 5 respondents i.e. (Credit Manager, Operations Manager, Business Banking Supervisor, Loan Portfolio Manager, and Branch Manager) for each commercial bank listed on the NSE, Kenya.

Table 3. 1.

Target Population

Category	Population	percentage
Branch Manager	11	20%
Loan Portfolio Manager	11	20%
Operations Manager	11	20%
Business Banking Supervisors,	11	20%
Credit Manager	11	20%
Total	**55**	**100**%

Source: (Commercial Banks HRM Records 2021).

3.4 Sampling Design and Sample Size

It's the process of picking a subset within a population so as to come up with a generality. This study was based on the census approach since it involves the entire commercial banks listed on the NSE, Kenya.

3.5 Data Collection Procedure

A survey was employed to gather primary information from respondents. Questionnaires were distributed to senior loan officers (branch managers, loan portfolio managers, operational managers, business banking supervisors, and credit managers) of 11 listed commercial banks in Kenya. The senior loan officers (credit managers, operations managers, business banking supervisors, loan portfolio managers, and branch managers) were selected since they are the ones that finally approve loan applications and drive loan growth in banks. Audited financial statements from listed commercial banks of Kenya and CBK were used as secondary data for the time frame 2016 to 2019. The collection of data was done using a data collection guide..

3.6 Pre-Testing the Instrument

Pre-testing was piloted in order to detect any weaknesses that the design and the instruments to be used might have and to allow alternative data for selecting samples (Cooper & Schindler, 2014). The pilot study was done by picking 5 respondents at random, which was 9% of the sample size. The 5 respondents picked for pilot testing were not included in the final study, thus reducing the sample size from 55 to 50 respondents.

3.6.1 Reliability

Reliability is described as a characteristic measurement of accuracy, precision, and consistency which relates to a research instrument. The device can be said to be reliable only if it is stable and consistent, therefore predictable and precise. The greater the consistency and stability of a tool, the greater the reliability. Therefore, a procedure is said to be reliable to the extent to which recurrence measurements made by it under constant conditions will provide similar results (Kumar, 2014). The study used Cronbach's alpha to measure reliability. It is an internal consistency measure which determines how closely related sets of items perform in a group. Alpha score of greater than 0.7 is considered acceptable (Cronbach, 1951).

3.6.2 Validity

Cooper and Schindler (2014) used a sample of research respondents. Validity is a concept that establishes relevance, quality, and accuracy pertaining to procedures employed to search for answers to research questions (Kothari & Garg, 2014). Validity was attained through engaging supervisors who gave their opinions as experts after checking the questionnaires in the instruments alongside the study objectives.

3.7 Diagnostics Test

The diagnostic test as per the analysis of regression assumptions was carried out. A linearity test was done to establish the linear association of the predictor variables with the predicted variable by employing Pearson's correlation coefficient. Likewise, a normality test was done todetermine if the research variables are normally distributed. A P value below 0.05 indicates theabsence of data, while a P value greater than 0.05 indicates the presence of normality. In order to determine the relationship between predictor variables, a multicollinearity test was applied.

3.8 Data Analysis

Quantitative data was analyzed using descriptive and inferential statistical analysis (SPSS 21.0). Evaluation was done by employing analysis of multiple regression to found the consequence of predictor variables on the predicted variable. A regression model focuses on describing and evaluating the relationship that exists between one variable and another. A multiple linear regression was applied to find out relationships between the loans Portfolio Performance and independent variables based on the presented regression model below;

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$

Y= Bank loans Portfolio Performance

β_0 = Is the regression constant or intercept

X_1 = Credit Management

X_2 = Unsecured Loans

X_3 = Repayment Characteristics

X_4 = Technological Advancement

β_0 = Regression Constant

$\beta_1, \beta_2, \beta_3, \beta_4$:- are coefficient of independent variables

3.9 Ethical Considerations

The researcher was able to get permission from the respondents and was able to access them through the bank's appointed coordinators. The researcher's mandate was to explain to the respondents' reasons why he is undertaking the study and how they will be involved in the collection and use of the data. This enabled the respondents to voluntarily participate. The respondents were assured that all information received was to be treated as confidential and that none other than authorized end users would have access to the data. The researcher requested and received a permit from NACOSTI to authorize the collection of data from respondents. The natural culture of the respondents was highly respected by the researcher.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

The chapter outlines the data collection outcome for purpose of investigating factors that influence the loan portfolio performance of commercial banks. Collection of data was done through the questionnaire instrument. Analysis of quantitative data was done by applying both descriptive and inferential statistical analysis tools. The results were presented in the form of tables. The outcome from analyzed data presents information which formed the basis for discussion, interpretation and conclusion of the findings.

4.1.1 Response Rate

This study pursued responses from 50 respondents using questionnaires. The researcher managed to collect 35 fully completed questionnaires.

Table 4. 1.

Response Rate

Responses	Frequency	Percentage %
Received Questionnaires	35	70
Unreceived Questionnaires	15	30
Total	**50**	**100**

Responses received from questionnaires issued were 70%, while 30% never responded back. As per Mugenda and Mugenda (2009), a 50% reply rate is satisfactory for analysis, a 60% reply rate is excellent, and 70% reply rate and above is exceptional. The response rate received was adequate to come up with a deduction for the research. The study was able to achieve a mark of 70% and above because of self-in-touch with respondents, which gave the researcher an opportunity to clarify queries and create more cooperation.

Reliability Test

According to Blumberg (2011), a reliability test is undertaken in order to reduce mistakes and partialities in data collection instruments. To be sure of the reliability of research instruments, the questionnaire was administered to 5 participants, attaining 9 % of the sample size selected at random by their potential characteristics, and they were excluded in the final research. Table **4.2** , presents the pretest outcome.

Table 4. 2.

Test of Reliability

Variables	Cronbach Alpha	Number of elements
Credit Management	0.781	5
Unsecured Loans	0.895	5
Repayment Characteristic	0.826	6
Technological Advancement	0.738	5
Loans Portfolio Performance	0.874	6
Overall Mean	**0.823**	

A Computed Coefficient Alpha Value of > 0.7 was deemed to be acceptable as a test of reliability (Garson, 2012). The outcome shown as per table 4.2 shows the variables tested achieved an adequate and recommended computed coefficient alpha value of above 0.7 with an overall Cronbach alpha of 0.823, which proved that the instrument was reliable.

4.2 Demographic Analysis

The demographic analysis section presents information of respondents sampled to take part in the research.

4.2.1 Respondents of the Gender

Research sought to establish how participants responded in relation to gender. This wasregarded as a significant indicator of the diversity of participants in public organization participation.

Table 4. 3.

Responses as Per Gender

Gender	Frequency	Percentage (%)
Male	22	62.9
Female	13	37.1
Total	**35**	**100**

The study was to find out in what manner respondents were distributed about their gender. It was assumed that gender diversity among respondents is very critical in the banking sector. Male respondents outnumbered females by 62.9%, while females made up 37.1% of those whotook part in the survey. These results show a balanced gender representation in the banking sector. It is equitably balanced, with a slight favour in the men's representation. The findings also exhibit a positive development in gender involvement whereby, in accordance to the constitution of Kenya (2010), all public organizations are required to adhere to the one-third gender rule.

4.2.2 Respondents Age

The study wanted to establish how participants were spread by age. This was to determine if they have achieved these senior positions through experience gained over the years.

Table 4. 4.

Respondents Age

Respondents age	**Frequency**	**Percentage %**
18 to 30 years	5	14.3
31 to 40 years	16	45.7
41 to 50 years	10	28.6
51 years. and above	4	11.4
Aggregate	**35**	**100**

Respondents, as per the study summary on Table 4.4, show that the majority of 45.7% are aged between 31 and 40 years old. While 28.6% of the population is between the ages of 41 and 50, 14.3% are between the ages of 18 and 30, and 11.4% are over the age of 51. The outcome indicated respondents aged 31–40 years were the majority. This study is related to private sector career progress principles, which emphasize know-how and the length of years inemployment. This echoes that main stream employees in the banking institutions are older and those in managerial positions are competent to give information relating to study objectives.

4.2.3 Highest Level of Education

The researcher needed to ascertain the maximum level of learning reached by the participants. It was to ascertain how well the research participants comprehended the research instrument.

Table 4. 5.

Highest level of Education

Educational level	**Frequency**	**Percentage %**
Undergraduate Degree	12	34.3
Post Graduate Degree	16	45.7
Doctor of Philosophy (PHD)	7	20
Aggregate	**35**	**100**

45.7% of postgraduate degree education obtained is at the postgraduate level, 20% has a Doctor of Philosophy (PhD), and 34.3 percent is at the undergraduate level. As per theoutcome, it indicates a fair mix of educational backgrounds in the banking sector. The large

number of participants with adequate educational qualifications indicates that the results will help the researcher better understand the loan portfolio performance in Kenyan commercial banks.

4.2.4 Work Experience

Research wanted to determine the number of years the participants have been working with commercial banks. This was to establish whether these individuals are well versed with knowledge on factors influencing loan portfolio Performance of commercial banks of Kenya.

Table 4. 6.

Work Experience

Duration in years	Frequency	Percent
Below 5 years	2	5.7
6 to 10	5	14.3
11 to 15	5	14.3
16 to 20	6	17.1
21 to 25	11	31.5
Over 25	6	17.1
Aggregate	**35**	**100**

This study was to establish working experience in banks. 31.5 % had an experience ofbetween 21 – 25 years which was the highest, 17.1% had worked for between 16 – 20 years and over 25 years, and 14.3% had worked for between 11 – 15 years same as 6 to 10 years, while 5.7% had a work experience of 5 years and below. Cumulatively 94.3% of the workers had banking experience of more than 5 years, giving the researcher confidence in competency of respondents. Workers who have worked for more period of time in an institution are believed to have internalized and have more knowledge on factors influencing loan portfolio performance of commercial banks in Kenya.

4.3 Descriptive Analysis of the Study Variables

The section comprises of explanatory Variables and explained Variable used in the research. A descriptive analysis method was used to arrive at the results.

4.3.1 Credit Management and loan portfolio performance of commercial banks in Kenya.

Research participants were to state the magnitude at which Credit Management influence loans portfolio performance of commercial banks in Kenya. The researcher used the result to calculate the frequencies and percentages. Table 4.7 reflects the result.

Table 4. 7.

Credit Management and Loans Portfolio Performance of Commercial Banks

Category	Frequency	Percentage %
Very Great Extent	5	14.3
Great Extent	24	68.6
Moderate Extent	6	17.1
Aggregate	**35**	**100**

The finding presented in the table above indicate that Credit Management influence loans Portfolio Performance of commercial banks with 68.6% participants agreeing it was to Great extent,14.3% agreed it was to Very great extent While 17.1% agreed it was Moderate extent. The above results indicates that Credit Management has influence on loans Portfolio Performance of commercial bank. The study is in agreement with the research done by Gatuhu (2013), in his investigation on the effects of credit management on financial performance of microfinance institutions and established that appraisal of clients, control of credit risk and policy on credit collection had a strong relationship and therefore influenced financial performance of MFIs.

4.3.2 Credit Management and Loans Portfolio Performance of Commercial Banks in Kenya

Credit Management is among the sensitive areas of concentration in financial firms that deal with credit and need to be given a lot of tension. It is a way by which to guarantee that borrowers will pay back the products and services rendered to them. Credit Management is a vital component of the banking practice management function. An institution with the proper Credit Management policy will enable it improve efficiency. The respondents were provided with a questionnaire and required to give unbiased opinions that best describe their answers on influence of Credit Management on loans Portfolio performance of commercial banks in Kenya. The outcome of the research is given in table 4.8.

Table 4. 8.

Credit Management and Loans Portfolio Performance of Commercial Banks

Statement	**Agree**		**Undecided**		**Disagree**	
	F	**%**	**F**	**%**	**F**	**%**
Loans Policies of Commercial Banks are reviewed to reduce default risks.	27	77.1%	7	20 %	1	2.9 %
All clients are appraised as per the loan policies and requirements.	31	88.5 %	3	8.6 %	1	2.9 %
Loan delinquency is well managed through credit management system	32	91.4 %	2	5.7 %	1	2.9 %
There are credit committees in place for loans processes and approval	32	91.4 %	2	5.7 %	1	2.9%
There are variety of loan products to satisfy different qualities of borrowers.	33	94.3 %	2	5.7 %	0	0%
Total		**442.7**		**45.7 %**		**11.6**
Mean aggregate	**31**	**88.54%**	**3.2**	**9.14%**	**4**	**2.32%**

The researcher pursued to ascertain the impact of Credit Management to Loans portfolio performance of Commercial Banks in Kenya. Cumulatively 77.1 % of the research participants agreed that Loans Policies of commercial banks in Kenya are reviewed to reduce default

risks.20% were undecided while 2.9% disagreed. Further Cumulatively 88.5% of respondents agreed that all clients are appraised as per the loan policies and requirements. 8.6% were undecided while 2.9% disagreed. The results are backed up by an empirical study conducted by Gatuhu (2013), who looked into how credit management affected the financial performance of microfinance institutions in Kenya. It was established that appraisal of clients, control of credit risk and policy on credit collection had a strong relationship and therefore influenced financial performance of MFIs.

On whether Loan delinquency is well managed through credit management system, many respondents 91.4% were cumulatively affirmative that indeed Loan delinquency is well managed through credit management system. A lesser proportion of 5.7% were neutral while 2.9% disagreed. Participants were asked as whether there are credit committees in place for loans processes and 91.4 % of the respondents which was a significant proportion agreed that there are credit committees in place for loans processes and approval while 5.7% were neutral and 2.9% disagreed.

The findings are supported by study done by Mutua, (2016) who investigated how credit risk management affected the financial performance of Savings and Credit Societies in Kitui County and found a strong positive relationship between, credit monitoring and SACCOs' financial performance. Further the study established that loan defaulters contributed verystrongly to financial performance of SACCOs.

Research participants designated that there are varieties of loan products to satisfy different borrowers, cumulatively 94.3 % of participants agreed that there are varieties of loan productsto satisfy different borrowers, while 5.7% were neutral. These findings of the study are in agreement with Kipkirui and Omagwa (2018) who conducted a study on how credit

management practices affect microfinance institutions' financial performance in Central Business District of Nairobi and established that control of credit risk, appraisal of clients, policy on credit collection and credit terms significantly explained variations in financial performance of the MFIs with a positive relationship to financial performance. By investing more in credit practices management, MFIs were capable to improve their financial results.

4.3.3 Unsecured Loans and Loans Portfolio Performance of Commercial Banks in Kenya.

Participants were required to give their views on the level to which unsecured loans affect loans portfolio Performance of Commercial Banks in Kenya. The study used the result to calculate the frequencies and percentages. Table 4.9 reflects the result.

Table 4. 9.

Unsecured Loans

Category	Respondents	Percentage %
Very Great Extent	6	17.1
Great Extent	27	77.2
Moderate Extent	2	5.7
Aggregate	**35**	**100**

77.2% of respondents said influence of unsecured loans is to Great extent, 17.1% said it is to Very great extent, 5.7% said it is a Moderate extent. Cumulatively 94.3% of the correspondent agreed that unsecured loans has influence and affects loans portfolio performance of commercial banks. This indicates that unsecured loans has influences in loans Portfolio performance of commercial banks in Kenya. The results are in agreement with outcomes onstudy done by Khole (2014) about the association between unsecured lending and loan performance of commercial banks which concluded that there exist a strong positive effect among unsecured bank loans and Loan performance of commercial banks.

4.3.4 Unsecured Loans and Loans Portfolio Performance of Commercial Banks in Kenya.

The intense contest in the financial sector in Kenya has obligated almost all commercial banks to commence practice of unsecured lending as being one of their main product to clients and non-clients. The unsecured loans is among the major products that constitute loans Portfolio and is one of key determinants of firm performance. Study was to evaluate degree of the statements to respondents relating to unsecured loans in their organization. The respondents were provided with a questionnaire and required to give unbiased opinions that best describe their answers on influence of Unsecured loans on loans Portfolio performance of Commercial Banks. Outcome of the findings are given in Table 4.10.

Table 4. 10.

Unsecured loans and loans Portfolio Performance of Commercial Banks in Kenya.

Statement	Agree		Undecided		Disagree	
	F	%	F	%	F	%
All loans are given against securities	24	68.6 %	11	31.4 %	0	0%
Source of payment of personal loans are strictly based on monthly pay slips.	33	94.3 %	2	5.7 %	0	0%
Only quality borrowers are granted unsecured loans	35	100 %	0	0%	0	0%
Interest rates charged on unsecured loans are comparatively high	34	97.1 %	1	2.9%	0	0%
Sometimes there is interference of external forces in loaning processes and payment.	32	91.4 %	3	8.6 %	0	0%
Total		451.4 %		48.6%		0
Aggregate Mean	**31.6**	**90.28%**	**17**	**9.7%**	**0**	**0%**

The study pursued to establish the impact of unsecured loans on loans Portfolio Performance of Commercial Banks in Kenya. Results showed that all loans are given against securities with 68.6 %of respondents agreeing while 31.4% were undecided. Study additionally established

that source of payment of personal loans are strictly based on monthly pay slips as highlighted by 94.3 % of respondents agreeing while 5.7% were neutral.

The results of findings are in agreement with those of Ninga, Muchiri and Muthii (2019) who did a research to ascertain the impact of unsecured commercial bank loans on financial performance of SACCOs in Kenya. The specific objectives of the study were to determine the impact of unsecured commercial bank loans on the financial performance of SACCOs, which demonstrated that commercial banks' unsecured loans and interest on loans had a positive significant impact on financial performance of SACCOs.

The researcher endeavored to establish if only quality borrowers are granted unsecured loans. From the study 100 % of the respondents agreed that only quality borrowers are granted unsecured loans. Further study attempted to establish if Interest rates charged on unsecured loans was proved to be comparatively high. Further 97.1 % agreed that Interest rates charged on unsecured loans was proved to be comparatively high while 2.9% of the respondents were neutral.

The outcome of the findings is supported by Khole (2014) in his research about association between unsecured lending and loan performance of commercial banks concluded that a strong positive effect existed among unsecured bank loans and loan performance of commercial banks in Kenya. Further noted was change in approach by commercial banks who are now targeting small savers by inducing them with personal loans initially dominated by savings and credit societies.

Researcher further sought to establish if there was interference of external forces in loaning processes and payment. From the study, 91.4% of respondents agreed that sometimes there was

Interference of external forces in loaning processes and payment, while 8.6 % of the respondents were neutral.

Findings are in agreement with Muthee (2016) who studied Management Practices of Unsecured Loans in Commercial Banks and concluded that strict credit approval process and strict attention to credit memo provided a great level summary of the demand of loan size limits to fresh borrowers with no collateral and thus justifying the banks' exposure.

4.3.5 Repayment Characteristic and Loans Portfolio Performance of Commercial Banks.

Employing use of the questionnaires, the researcher seek to know at what exetent does Repayment Characteristic influence loans portfolio performance of commercial banks in Kenya. The researcher used the result to calculate the frequencies and percentages. The outcome are shown on table 4.11 below.

Table 4. 11.

Repayment Characteristics.

Category	**Respondents**	**Percentage %**
Very Great Extent	11	31.4
Great Extent	14	40
Moderate Extent	6	17.2
Little extent	4	11.4
Aggregate	**35**	**100**

31.4% of respondents said influence of Repayment Characteristic is of great extent, 40% said is of great extent, 17.2% said it is a Moderate extent, while the rest, 11.4 % said it is to a Little extent. This indicates that proper Repayment Characteristic in banks has an influence on Loans Portfolio performance of commercial banks. Outcomes of research are in agreementwith the empirical study by Bhardwaj and Sengupta (2008) carried research about the Impact on Repayment to Performance of banks in India which exposed the existence of a positive significant relationship between repayment and financial performance.

4.3.6 Repayment Characteristic and Loans Portfolio Performance of Commercial Banks in Kenya.

Repayment characteristics refers to how creditors evaluate potential borrowers basing on their strength of expected return ratio. It is also assumed there is a level repayment that a borrower can actually afford and this determines the lenders will of approval to a borrower regardless of interest charged, and this might eventually affect the projected losses to become too great comparative to the projected profit. The research was to evaluate the effect of repayment characteristic on Loans Portfolio Performance of Commercial Banks in Kenya. The participants were requested to specify the degree reflects the result in frequency and percentages.

Table 4. 12.

Repayment Characteristic and loans Portfolio Performance of Commercial Banks.

Statement	Agree		Undecided		Disagree	
	F	**%**	**F**	**%**	**F**	**%**
The Bank considers the repayment history of the applicant when advancing a loan	34	97.1 %	1	2.9 %	0	0%
The Bank liaises with the credit reference bureaus to collect data on borrowers so as to reduce default risk	35	100 %	0	0%	0	0%
Past history of a borrower's debt repayments helps the Bank to decide on access	33	94.3 %	2	5.7 %	0	0%
The Bank contemplates the timing of repayment when progressing loans.	34	97.1 %	1	2.9 %	0	0%
Bank contemplates the effective repayment of loan by cash flow ascessment when processing loans.	31	88.5 %	4	11.5 %	0	0%
Banks select clean debtors and monitor borrowers to make sure they apply loans to the intended purpose.	31	88.6 %	4	11.4 %	0	0%
Total		565.6 %		34.4 %		0 %
Aggregate Mean	**33**	**94.3%**	**2**	**5.7%**	**0**	**0%**

The Study wanted to ascertain if banks take into consideration the repayment history of the applicant when approving a loan. From the study, 97.1 % agreed that Bank considers repayment history of applicants during loan assessment while 2.9% were undecided. Further research was conducted to determine whether the bank communicates with credit reference bureaus to collect data on borrowers so as to reduce default risk. According to the study, 100% of respondents agreed that the bank works with credit bureaus and collect data on borrowers so as to reduce default risk. The outcome is supported by a study done by Bhardwaj and Sengupta (2008) on Indian bank performance, which concluded the existence of noteworthy positive association between repayment and financial performance.

The study sought to know from participants if past history of a borrower's debt repayments helps the Bank to decide on access. Majority of the respondents 94.3% were affirmative that indeed the past history of a borrower's debt repayments helps the Bank to decide on access while a lesser proportion of 5.7% were neutral. Further the researcher sought to know from the respondents if the Bank contemplates the timing of repayment when processing loans. From the study, 97.1% agreed that Bank contemplates the timing of repayment when processing loans with 2.9% undecided. The results of the study is in agreement with Ochungo (2013) who investigated factors affecting loan repayment on clients of Barclays bank in Kenya andfindings of the study showed a noteworthy association existed between individual debtors factors and loan repayment amongst clients of Barclays bank.

Borrowers should be managed on their loan use and repayment by banks implementing a management team which will also ensure there exists an effective and efficient credit risk management. This will help in matching loans to payment capabilities of borrowers.

The researcher sought to establish if bank contemplates the effective repayment of loan by cash flow assessment when processing loans. Results established that the Bank embrace the effective repayment of loans using cash flow analysis when advancing a loan with 88.5 % agreeing while a lesser proportion of 11.5% were neutral. In addition, study sought to establish if Banks monitors borrowers also to select clean borrowers to make sure are applied to the intended purpose. Respondents signified that Banks monitor borrowers also to select clean borrowers to ensure funds are utilized for the intended purpose with 88.6% agreeing and only 11.4% being neutral. The results of findings are in agreement with Maina (2016) who examined effects of lending practices on financial performance of commercial banks of all listed commercial banks in Nairobi and established that Know Your Customer (KYC) measures wereparticularly helpful in protecting the commercial banks against publicity to pessimistic credit dealings with incompetent borrowers. Research outcomes established that guidelines on credit policies were fundamental in improving operations of lending effectiveness. It proved existence of a substantial correlation with credit policy guidelines and financial performance ofcommercial banks. The researcher resolved that, guidelines on credit policies identify the certified functional model that a commercial banks functions in when performing all dealings associated to the lending services, and therefore, specialists, clients and researchers add offers on paramount policy direction. The findings indicate that repayment characteristics have a significant impact on commercial banks' loan portfolio performance.

4.3.7 Technological Advancements on Loans Portfolio performance of commercial banks.

The study pursued on how technological advancement affect commercial banks in Kenya's loan portfolio performance. The researcher used the result to calculate the frequencies and percentages. The outcome are given in table 4.13 below.

Table 4. 13.

Technological Advancements

Category	Respondents	Percentage %
Very Great Extent	15	42.9
Great Extent	18	51.4
Moderate Extent	2	5.7
Aggregate	**35**	**100**

51.4% of respondents said influence of Technological advancements has Great extent, 42.9% said it has Very great extent, 5.7% said it is a Moderate extent. This indicates that Technological Advancements has an influence on loans Portfolio Performance of Commercial Banks. The study relates to the outcomes on the work done by Mwendwa (2016) on the Impactof Technological Innovation on Organization`s Performance. A research was done using descriptive research design to a target population of 20 registered commercial banks Innovation has high potential in financial performance in banks if adopted and further observed thatInnovations versatility results to improved acceptance rate between the banks verse customersif the acceptance is embraced by both banks and customers.

4.3.8 Technological Advancements and Loans Portfolio Performance of Commercial Banks in Kenya.

The technological know-how is among the major factors that push organizations to change Technological advancement in banks in Kenya is very vital because it defines whether they attain their objectives or not. Technological advancement also tends to improve banks image in the public eye. Study was to evaluate degree of the statements relating to Technological advancements in their workplace. Table 4.14 reflects the result in frequency and percentage.

Table 4. 14.

Technological Advancements & Loans Portfolio Performance of Commercial Banks.

Statement	Agree		Undecided		Disagree	
	F	%	F	%	F	%
There is hacking into customers' accounts either internally or externally	32	91.4 %	3	8.6 %	0	0%
Internet sourced loans are volatile to default	34	97.1 %	1	2.9 %	0	0%
Short-term loans are costly to the bank	34	97.1%	1	2.9 %	0	0%
There is manipulation in servicing loans through Online either by borrowers or by help of staffs	34	97.1 %	1	2.9 %	0	0%
Online loans are faster and customer friendly	35	100 %	0	0%	0	0%
Total		482.7		17.3		0
Aggregate Mean	**33.8**	**96.5%**	**6**	**3.5**	**0**	**0%**

The study sought to analyze influence of technological advancement on loans Portfolio performance of commercial banks. The table 4.14 above indicates outcomes in relation to technological advancement on loans performance. From the study, 91.4 % of respondents agreed that hacking into customers' accounts either internally or externally exists and a mere 8.6 % were neutral.

97.1% agreed that the Internet sourced loans were volatile to default while 2.9% were silent. The outcome is supported by the study done by Ngugi and Karina (2013) on the effect of technological innovation strategies on commercial bank performance, which revealed that product innovations had an impact on commercial bank performance. Overall establishment

was that adoption of innovation strategies had some influence on great extent to performance of banks.

The researcher was to find out whether the respondents are in agreement that Short-term loans are costly to the bank.97.1% of the respondents agreed that Short-term loans are costly to the bank and only 2.9% were neutral. Further 97.1 % of respondents agreed that there ismanipulation in servicing loans through online either by borrowers or by help of staffs while 2.9% were neutral.

Results of study are consistent with Mwendwa (2016) on the impact of Technological Innovation on organization`s performance which established that financial performance of commercial banks were positively affected by innovation. Innovation has high potential in financial performance in banks if adopted. Further it was observed that Innovations versatility results to improved acceptance rate between the banks verse customers if the acceptance is embraced by both banks and customers. The study recommended technology innovation if wellinvested in by banks, it helps to cut down on costs. On whether online loans are faster and customer friendly, 100% of respondents agreed that online loans are faster and customer friendly.

Findings are supported by Wachira (2013), who empirically investigated the effect of technological innovation to financial performance of commercial banks and Results of the research confirmed a positive impact of technological innovations. The research disclosed that good customer care of employees within banks embraced technological improvement. The study emphasized it was a necessity for financial institutions to unceasingly spend in technological inventions to enable them remain in the competitive market.

4.3.9 Loans Portfolio Performance

This is the rate of profit or the percentage of return on investment in several loaned products that form loan portfolio. The study was to evaluate how respondents feel about Loans portfolio performance in commercial banks. The outcome is in table 4.15 below

Table 4. 15.

Loans Portfolio Performance

Statement	Agree		Undecided		Disagree	
	F	%	F	%	F	%
Sound investment policies in place enhances loans portfolio performance	34	97.1 %	1	2.9 %	0	0%
Government policies and regulations affects operations of banks	35	100 %	0	0%	0	0%
Previous history of a borrower's debt repayments helps the bank to decide on loaning.	35	100 %	0	0%	0	0%
Un-serviced loans has negative effects on loans portfolio Performance of Commercial Banks	34	97.1%	1	2.9 %	0	0%
Technological advancement has increased customer responsiveness in loans payment.	33	94.3 %	2	5.7 %	0	0%
Variety of products offered by banks through Technological advancement has an impact onloans portfolio performance.	32	91.4 %	3	8.6 %	0	0%

The study sought to determine if Sound investment policies in place enhances loans portfolio performance. From the outcomes, 97.1% of the participants agreed that there is sound investment policies in place and it enhances loans portfolio performance and only 2.9% were undecided further, the study revealed that, Government policies and regulations affects operations of banks with 100% of the participants agreeing. As to whether previous history ofa borrower's debt repayments helps the bank to decide on loaning, 100 % of the participants agreed that it actually helps the bank to control debts. Study also sought to evaluate if Un- serviced loans has negative effects on loans Portfolio performance of commercial banks. From results, 97.1 % of the participants agreed that Un-serviced loans has negative effects on loans portfolio Performance of Commercial Banks while 2.9% were undecided. On whether Technological advancement has increased customer responsiveness, 94.3% of the participants agreed that technological advancement has increased customer responsiveness however, 5.7% remained mum in participation. The researcher sought to determine if variety of productsoffered by banks through technological advancement has an impact on loans portfolio performance. 91.4% agreed that variety of products offered by banks through technological advancement has an impact on loans portfolio performance while 8.6% were undecided.

4.4 Hypothesis Testing

A Hypothesis is a claim, about the population parameter that may be true or not true.Hypothesis testing subjects the claim that the independent variable does not influence the dependent variable. The study used hypothesis testing to test the claim that the study variables, Credit management, Unsecured loans, Repayment characteristic and Technological advancement have no significance influence on the dependent variable, loans Portfolio performance of commercial banks in Kenya.

4.5 Regression Diagnostic Tests

To develop regression model, analysis of regression was adopted. To test the analysis, Regression Diagnostic Tests were applied to test on fundamental assumptions in regards to multiple linear regression. The findings are provided below;

4.5.1 Normality Test

Table 4.16 shows indicators evaluating measures of sharing which are kurtosis and skewness. The canon of acceptance on tests of normality states that, a measurement is reasonably near to normal if it's outcomes of kurtosis and skewness numerically are spread out between -2 and +2 (Cooper & Schindler 2014). The normality measures of research variables are as in table 4.16.

Table 4. 16.

Test of Normality

Variable	N	Skewness		Kurtosis	
		Statistic	Std Error		Statistic
Credit Management	35	-1.052	.414	1.040	.809
Unsecured Loans	35	-.783	.324	.948	. 901
Repayment characteristics	35	.296	.421	.656	.837
Technological advancement	35	-.753	.534	1.140	.765
Loans Portfolio Performance	35	-0.901	.224	.690	.609

In reference to table 4.16, it indicates there is normal distributions of the variables by having the Kurtosis and Skewness of values between -2 and 2. It indicates that, Credit Management with skewness of -1.052 and kurtosis of 1.040, Unsecured Loans with Skewness of -.783 and

Kurtosis of .948, Repayment characteristics with Skewness of .296 and Kurtosis of 0.656, Technological advancement with Skewness of -753 and Kurtosis of 1.140, and Loans Portfolio Performance with Skewness of -.901 and Kurtosis of .690 are normally distributed.

4.5.2 Test of Linearity

As concerning the linearity assumptions, the linear association of the predictor variables on the predicted variable was executed by employing Pearson correlation coefficient between the Loans Portfolio performance and each one of the hypothesized predictor variables. The outcome of linearity in table 4.17.

Table 4. 17.

Linearity Test

		Loans Portfolio Performance	
Credit management	Pearson correlation	.623	Linear
	(2-tailed) sig. level	.001	
	N	35	
Unsecured Loans	Pearson correlation	.598	Linear
	(2-tailed) sig. level	.001	
	N	35	
Repayment characteristics	Pearson correlation	.681	Linear
	(2-tailed) sig. level	.001	
	N	35	
Technological advancement	Pearson correlation	.768	Linear
	(2-tailed) sig. level	.001	
	N	35	

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

Results given in table 4.17 reveals existence of a positive important association which is linear between Credit Management and Loans Portfolio Performance (with r=0.623), Unsecured Loans and Loans Portfolio Performance (with r=0.598), Repayment characteristics and Loans Portfolio Performance (with r=0.681), and Technological advancement and Loans Portfolio Performance (with r = 0.768), at $P < 0.05$ level of significant.

4.5.3 Multicollinearity Test

To identify the presence of multicollinearity, and Tolerance coefficient and the variance inflation factors (VIF), values for the predictor variable calculated and presented in table 4.18below.

Table 4. 18.

Test for Multicollinearity

	Collinearity Statistics	
	Tolerance	**Variance Inflation Factor**
Credit Management	.353	2.827
Unsecured Loans	.272	3.671
Repayment characteristics	.339	2.952
Technological advancement	.231	4.327

All the expected VIF values are relatively small (below 10) and the Tolerance coefficient (1/VIF) values are above 0.1. (Credit Management=.353, Unsecured Loans=.272, Repayment characteristics=.339 and Technological advancement =.231). This indicates absence of multicollinearity between the predictor variables and thus a level of multicollinearity as per model can be tolerated.

4.6 Correlation Analysis

Pearson correlation analysis was adopted to decide admissible coefficient usable to determine the negative or positive correlation among explanatory and explained variable. The Pearson coefficient range from -1 to +1 Values within range 0 – 0.3 (0 – -0.3) shows no correlation, 0.3 – 0.5 (-0.3 – -0.5) indicates weak positive (negative) linear relationship, Values within range of 0.5 – 0.7 (-0.5 – -0.7) shows a moderate positive (negative) linear relationship with Values within range of 0.7 – 1.0 (- 0.7 – -1.0) indicates strong positive (negative) linear correlation. The association within independent and dependent variables was tested at 95% significance level.

Using result from the correspondence, the researcher computed correlation results in table 4.19 below.

Table 4. 19.

Correlations Coefficient Matrix

		Credit Management	**Unsecured Loans**	**Repayment characteristic**	**Technological Advancement**	**Bank Performance**
Credit Management	Pearson correlation	1		.		.
	Sig.(2-tailed)			.	.	
	N	35				
unsecured loans	Pearson correlation	.611**	1			.
	Sig.(2-tailed)	.000			.	
	N	35	35			
Repayment characteristic	Pearson correlation	.695**	.649**	1		
	Sig.(2-tailed)	.003	.001			.
	N	35	35	35		
Technological Advancement	Pearson correlation	.665**	.703**	.595**	1	.
	Sig.(2-tailed)	.000	.000	.000		.
	N	35	35	35	35	
Bank Performance	Pearson correlation	.623**	.598**	.681**	.768**	1
	Sig.(2-tailed)	.001	.000	.002	.000	
	N	35	35	35	35	35

** Correlation is significant at 0.05 level (2-tailed)

The findings in table 4.19 represent correlation coefficients of the research variables. It is therefore clear as per the analysis that a relationship existed between independent variables (Credit Management, unsecured loans, Repayment characteristic and Technological advancement) and the dependent variable (Performance of Commercial Banks) was positive. All of them were significant at 95% confidence level.

The correlation analysis shows thatCredit Management had positive correlation coefficient of 0.623 at a p-value of less than 0.05. Unsecured loans, had also positive correlation coefficient of 0.598 at a P-value of less than 0.05. Repayment characteristic had also positive correlation coefficient of 0.681 at a p-value of less than 0.05 and Technological Advancement had a positive association coefficient of .768 with a P value of less than 0.05 respectively. According to the Analysis, there is proof of existence of a strong correlation between explanatory and explained variables.

4.7 Analysis of Regression

Analysis of Regression was used to develop the measured association between factors influencing loans portfolio performance of commercial banks. The results are provided below in table 4.20.

4.7.1 Model Summary

Table 4. 20.

The Regression analysis model results

Model	R	R Square	Adjusted R Square	Std Error of Estimate
1	.908 [a]	.824	.782 {.813}	.1073

{Durbin Watson=1.836}

The model clarifies the proportion of variation change in the explained variable (Performance of commercial banks) as explicated by explanatory variables. Coefficient of determination was employed to describe the suitability of the model if it was a good predictor. The result indicates

that independent variables (Credit Management**,** Unsecured Loans, Repayment characteristics and Technological advancement) explained variations in Performance of commercial banks by 78.2% as indicated by adjusted R^2 of .782 and this shows the model is a very good predictor.

4.7.2 Analysis of Variance

A Hypothesis test of analysis of variance was conducted to determine the effect of the association between explanatory variables and explained variable factors influencing loan Portfolio Performance of commercial banks. The outcome is as per table 4.21.

Table 4. 21.
ANOVA

Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig**
Regression	1.047	4	.262	26.201	.000
Residual	.305	30	.010		
Total	**1.352**	**34**			

a. Dependent Variable; Loan Performance Of Commercial Banks

b. Predictors: (constant) credit Management, unsecured loans, Repayment characteristic and Technological advancement.

c. The outcome of the findings in the table above shows a level of significance of was .001[b] and this confirms that the model of regression used is a vital predictor of the relationship of factors influencing loan Portfolio Performance of commercial banks

4.8 Regression Coefficients

The table 4.23 indicates the measure of significance of used variables and same time also shows coefficients levels.

Table 4. 22.

Regression Analysis Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	sig
		B	Std error	Beta		
1	(constant)	4.636	.461		10.056	.041
	Credit Management	.496	.172	.361	2.884	.029
	unsecured loans	.557	.112	.192	4.973	.020
	Repayment characteristic	.443	.103	.137	4.301	.035
	Technological advancement.	.435	.191	.309	2.277	.028

The results of the multiple regression analysis on direct relationships between the independent variables (Credit Management, unsecured loans, Repayment characteristic and Technological advancement) and the dependent variable are summarized in Table 4.22.

Regression equation obtained from the output:-

$Y = 4.636 + 0.496 X_1 + 0.557 X_2 + 0.443 X_3 + 0.435 X_4$

This indicates that Performance of Commercial Banks) = 4.636 + 0.496 (Credit Management) + 0.557 (unsecured loans) + 0.443 (Repayment characteristic) + 0.435 (Technological advancement)

Hypothesis 1: Credit Management and loans portfolio performance of commercial banks in Kenya.

$Ho_{1:}$ There is no significant relationship between Credit Management and loans portfolio performance of commercial banks in Kenya.

Objective one was to ascertain the influence of Credit Management on loans portfolio performance of commercial banks in Kenya. A null hypothesis $H0_1$ was formulated with assumption that no substantial association existed between Credit Management and loans portfolio performance of commercial bank**.** The 0.496 beta coefficient for Credit Management from Table 4.23 shows that one unit increase in Credit Management creates a 49.6% growth in portfolio performance of commercial banks in Kenya. At $P<0.05$ significance level we reject the null hypothesis, and this implies that, Credit Management has a substantial association on loans portfolio performance of commercial banks in Kenya. This statistics basically concludes from the study that there is an existence of a significant strong correlation between credit management and loans portfolio performance of commercial banks in Kenya.

Outcomes of research are in agreement with Information asymmetry theory by (Spence, 1973) which is concerned with choices in transactions, where one partner is better placed with information compared with the opponent party. The Information asymmetry offers a significant framework for understanding credit management concepts in that it is concerned with choices in transactions where one partner i.e. the borrower is better placed with information compared with the opponent party i.e. the lender. High information asymmetry influences moneylender's will to give credits. However, extra risks arises by improbability of organization level of performance with more variability in investment opportunity. Huge percentage of correlated

monitoring charges mostly is transferred to borrowers through raised interest rates with high cost of data collection. This has led to other borrowers to limit use of lines where monitoring is imperfect but lenders are not able to remove information asymmetry. Bank credit may be restricted for opaque businesses (Jin & Leslie, 2003). The theory is vital to the study in such a manner that credit valuation process is sometimes done using inaccurate information and it negatively influence bank performance.

Gatuhu (2013) did investigate the effect of credit management on financial performance of microfinance institutions using descriptive survey design on a population of 59 MFIs in Kenya. It was established by the study results that appraisal of clients, control of credit risk and policy on credit collection had a strong relationship and therefore influenced financial performance of MFIs.

The outcome is supported with a research done by Gatuhu (2013) who investigated the effect of credit management on financial performance of microfinance institutions in Kenya. The study established that appraisal of clients, control of credit risk and policy on credit collection had a strong relationship and therefore influenced financial performance of MFIs. In addition, Mutua (2016) sought to evaluate the effect of credit risk management on financial performance in SACCOS Kitui County. Conclusion of the findings were, there was a very strong positive relationship between credit monitoring and SACCO financial performance. The study's findings concluded that there was a very strong positive relationship amongst credit monitoring and SACCO financial performance. Further the study established that loan defaulters contributed very strongly to financial performance of SACCOs.

These findings of the study are further in agreement with Kipkirui and Omagwa (2018) study which sought the effect of credit management practices on financial performance of

microfinance institutions in Nairobi which established that control of credit risk, appraisal of clients, policy on credit collection and credit terms significantly explained variations in financial performance of the MFIs with a positive relationship to financial performance. By investing more in credit practices management, MFIs were capable to improve their financial results.

Hypothesis 2: Unsecured loans and loans portfolio performance of commercial banks in Kenya.

$Ho_{2:}$ There is no significant relationship between unsecured loans and loans portfolio performance of commercial banks in Kenya.

The second goal was to determine the impact of unsecured loans on the loan portfolio performance of Kenyan commercial banks. A null hypothesis, $H0_2$, was expressed with an assumption of no significant influence of unsecured loans and Loans Portfolio performance of commercial banks. Coefficient of unsecured loans at table 4.23 was 0.557. Therefore beta coefficient of unsecured loans of 0.557 shows that while other factors remain constant, every unit improvement in unsecured loans would lead to 55.7% improvement on banks Performance value in a direct correlation between unsecured loans and loans Portfolio performance of commercial banks.

At $p<0.05$ significance level we therefore reject the null hypothesis, inferring that unsecured loans has a significant influence on loans Portfolio performance**.** Based on statistics outcome, it was proven the existence of a strong correlation among unsecured loans and loans portfolio performance of commercial banks.

Study outcomes are in support with work done Khole (2014) on the relationship between unsecured lending and loan performance of commercial banks which concluded that there exist and strong positive effect among unsecured bank loans and Loan performance of commercial banks.

The study by Ninga, et al. (2019) on the effect of unsecured loans on the financial performance of SACCOs in Kenya also supports the conclusions of this study. The study's specific objectives were to determine the influence of unsecured commercial bank loans amount on financial performance of SACCOs, and it was discovered that commercial banks' unsecured loans amount and loans had a positive significant influence on financial performance ofSACCOs.

Findings are also in agreement with Muthee (2016) study on Management Practices of Unsecured loans in commercial banks who concluded that strict credit approval process and strict attention to credit memo provided a great level summary of the demand of loan size limits to fresh borrowers with no collateral and thus justifying the banks' exposure. However the study was done on an MFI not a Bank.

Hypothesis 3: Repayment Characteristic and Loans Portfolio Performance of Commercial Banks in Kenya.

$Ho_{3:}$ There is no significant relationship between repayment characteristic and loans portfolio performance of commercial banks in Kenya.

The third objective pursued to evaluate the effect of repayment characteristic on loans portfolio performance of commercial banks in Kenya .A null hypothesis $H0_3$, was expressed with an assumption of no significant influence of repayment characteristic on loans Portfolio Performance. Table 4.23 results show the coefficient of repayment characteristic was 0. 443.

Therefore beta coefficient of repayment characteristic of 0. 443 shows that while other factors remain constant, every unit improvement in repayment characteristic would lead to 44.3% improvement on banks Performance value in a direct relationship between repayment characteristic and loans portfolio Performance of Commercial Banks in Kenya. At $P < 0.05$ significance level, the null hypothesis is rejected indicating that repayment characteristic has a significant influence on loans portfolio Performance of Commercial Banks in Kenya.

On the basis of this statistics outcome, it is thus proven, there exists a significant strong correlation between repayments characteristic and loans.

The results of the study is in agreement with Ochungo (2013) who investigated factors affecting loan repayment on clients of Barclays bank in Kenya and findings of the study showed a noteworthy association existed between individual borrowers and loan repayment among Barclays bank customers. It was concluded that a noteworthy association existedbetween loan factors and loan repayment among clients of Barclays bank in Kenya. An obligatory management of bank borrowers on loan use and repayment should apply to ensure effective and efficient management of credit risk so as to match loans and ability to pay.

Further the results of findings are in agreement with Maina (2016) who examined effects of lending practices on financial performance of commercial banks in Kenya and the outcomes of the research established that Know Your Customer (KYC) measures were particularly helpful in protecting the commercial banks against publicity to pessimistic credit dealings with incompetent borrowers. Research outcomes established that guidelines on credit policies were fundamental in improving operations of lending effectiveness it proved existence of a substantial correlation between credit policy guidelines and financial performance ofcommercial banks in Kenya. The researcher concluded that, guidelines on credit policies

identify the certified functional model that a commercial banks functions in when performing all dealings associated to the lending services, and therefore, specialists, clients and researchersadd offers on paramount policy direction.

Hypothesis 4: Technological advancement and loans portfolio Performance of Commercial Banks in Kenya.

H_{O4}: There is no significant relationship between technological advancement and loans portfolio performance of commercial banks in Kenya.

The last objective pursued to analyze the influence of technological advancement on loans Performance and loans portfolio performance of commercial banks in Kenya. A null hypothesis H_{02} was expressed with an assumption of no significant influence of Technological advancement on loans portfolio performance of commercial banks in Kenya. The beta coefficient for Credit Management from Table 4.23 was .361. This signifies that a unit increasein Technological advancement leads to a 43.5 % increase in loans Portfolio performance of commercial banks. The null hypothesis is rejected at the $P<0.05$ significance level, indicating that technological advancement has a significant influence on commercial banks' loan portfolioperformance in Kenya. In terms of the study's findings, there is a significant and strong correlation between technological advancement and loan portfolio performance of commercial banks in Kenya. The study's findings are supported by Wachira's (2013) work on the impact of technological innovation on commercial bank financial performance, which found that there was a positive impact of technological innovations as well as ease of access, convenience, user and friendly features. It was also shown by the study that banks customer care employees' valued Technological innovations and further uncovered a positive banks profitability.

The outcome is supported by study done by Ngugi and Karina (2013) on effect of Technological innovation strategies performance of commercial banks which revealed that product innovations affects performance of commercial banks in Kenya. Research additionally exposed that product change made some impact to the bank's profitability as well as product repositioning. There was a further discovery that when Technological innovation strategies is applied i.e., reduction of costs and adherence to guidelines contributes bank's profitability. Overall establishment was that adoption of innovation strategies had some effect on greatextent to performance of banks. Further findings are consistent with an empirical analysis done by Mwendwa (2016) on the Impact of Technological Innovation on Organization`sPerformance which established that financial performance of commercial banks was positively affected by innovation. Innovation has high potential in financial performance in banks if adopted. Further it was observed that Innovations versatility results to improved acceptance rate between the banks verse customers if the acceptance is embraced by both banks and customers.

CHAPTER FIVE

SUMMARY OF FINDINGS CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter summarizes the outcomes of the study and give recommendations on the study objectives

5.2 Summary of Findings

Aim of the study was to examine the factors influencing loan portfolio Performance of Commercial Banks in Kenya. The outcome are as follows;

5.2.2 Credit Management and Loans Portfolio Performance of Commercial Banks in Kenya.

The study was conducted to find out the influence of credit management on loan portfolio Performance of Commercial Banks. The aggregate mean score of 88.54% indicates that a high percentage of respondents are in agreement that employing credit management practices has an impact on loans portfolio performance in banks. A correlation analysis to determine a relationship between credit management and loan portfolio Performance of Commercial Banks indicated a strong correlation (r =.623). The correlation coefficient was high, thus indicating a strong association exists between Credit Management and Loans Portfolio Performance of Commercial Banks.

5.2.2 Unsecured Loans and Loans Portfolio Performance of Commercial Banks in Kenya in Kenya.

The researcher conducted research on the impact of unsecured loans on the loan portfolio Performance of Commercial Banks. As per the findings, most of respondents were in positive that unsecured loans have an impact on loan effectiveness on Commercial banks with an aggregate mean score of 90.28 %. The analysis of correlation produced a pearson correlation coefficient of (r = .598), thus implying a strong association exists between unsecured loans and loan portfolio performance in banks.

5.2.3 Repayment Characteristic and Loans Portfolio Performance of Commercial Banks in Kenya.

In addition, researcher pursued to find out the impact on Repayment Characteristic to Loans Portfolio Performance of Commercial Banks in Kenya. An aggregate mean score of 94.27 % indicates, majority of participants support that repayment characteristic influence on Loans Portfolio performance of commercial banks in Kenya The outcome of correlation coefficient (r = .681) means there is a positive association that is existent between repayment characteristics and loans portfolio performance of commercial banks.

5.2.4 Technological Advancement on Loans portfolio Performance of Commercial Banks in Kenya.

Last, on whether there exists a relation between Technological Advancement and loans Portfolio performance of commercial banks. The correlation was (r=0.768) and the aggregate mean score of 96.54 % suggests that the thesis participants agreed that Technological

Advancement has a strong positive impact on Loans Portfolio Performance of Commercial banks in Kenya.

5.3 Conclusions

The result summary in regards to the study findings and conclusions. The objective of the study was to find out whether employing credit management influences loan portfolio performance of commercial banks in Kenya. The conclusion from the outcome indicates that employing proper credit management has a positive and important influence on the loanportfolio performance of commercial banks. Another determinant of the study was to find out how unsecured loans influence the loan portfolio performance of commercial banks in Kenya. The conclusions from the findings indicate that unsecured loans have a significant impact on the loan portfolio performance of commercial banks.

Furthermore, the study was to evaluate how repayment characteristics influence the loanportfolio performance of commercial banks. The conclusions from the study indicates that employing proper evaluation of repayment characteristics has a strong and positive influence on the loan portfolio performance of commercial banks in Kenya. The last goal of the study was to analyze how technological advancement influences the loan performance of commercialbanks in Kenya. Outcomes from the study show that technological advancement has a significant and positive influence on loans Portfolio Performance of Commercial Banks in Kenya.

5.4 Recommendations

The chapter is composed on the basis of objectives and results by the researcher in this study as follows;

To attain effective and efficient loan portfolio performance, commercial banks must employ good credit management practices. Commercial banks should ensure that they implementsound policies, conduct proper client appraisal, practice delinquency management, and have a credit committee for a well-functioning credit management department with suitable members of staff who are committed to competence.

Regardless of the fact that almost all commercial banks employ risk assessment when dealing with unsecured loans, adequate and sufficient measures include proper assessment of collateral of loan security, establishing the source of repayment of borrowers and proper assessment of credit worthiness of borrowers.

The third objective assessed the influence of repayment characteristics on loan portfolio performance of commercial banks. Commercial banks should implement more feasible loan security measures intended to lessen loan delinquency ratios, which can subsequently encourage positive customer performance. If commercial banks are to attain the anticipated customer performance, they should contemplate all key customer characteristics (repayment history, liaising with CFBs, repayment timing, and cash flow analysis) that can significantly influence customer performance.

To improve the loan portfolio performance of commercial banks, the new practices brought about by the new technology should be embraced. This should comprise of practices such as management in banks and conducting frequent system checks to avoid failure of automated machines. The management should conduct a market analysis to find out the acceptance of the use of new technology innovations by the end user. Furthermore, the bank should protect users of internet banking with encrypted passwords to stop hackers.

5.5 Thesis for Further Study

i) A further investigation is required to assess the relationship between loan portfolio growth and credit risk.

ii) A comparable thesis may also be conducted in other organizations other than banks to establish whether we have similar findings similar as those establish in this study.

REFERENCES

Abdullah, R. (2015). The ideological mentality of an accounting student at a crossroads: the case of Bahrain). *International Journal of Accounting and Taxation*, 3(1).102-138 DOI: 10.15640/ijat. v3n1a6

Aizenman, J., & Lee, J. (2007). International reserves: precautionary versus mercantilist views, theory and evidence. *Open Economies Review*, *18*(2), 191-214. DOI: 10.1007/s11079- 007-9030-z

Allen, F., & Santomero, A. M. (1997). The theory of financial intermediation. *Journal of banking and finance*, 21(11-12), 1461-1485. https://doi.org/10.1016/S0378-4266(97)00032-0

Araga, A. S. (2011). Bank Lending and Administration 11. Lagos: National Open University of Nigeria. Banking, *International Journal of Business and Management*, 16(4), 576-602 https://nou.edu.ng

Araka, H., Mogwambo, V. & Otieno, S. (2018). Effect of Non-Performing Loans on Financial Performance of Commercial Banks in Kenya. *International Journal of Finance, Accounting and Economics* (IJFAE), 1(3), 44-51. http://www.oircjournals.org/images/journals/ijfae/.

Bagozzi, R. P., & Warshaw, P. R. (2007). Extrinsic and intrinsic motivation to use computersin the workplace. *Journal of applied social psychology*, *22*(14), 1111-1132. https://doi.org/10.1111/j.1559-1816.1992.tb00945.x

Basel, I. I. (2006). International Convergence of Capital Measurement and Capital Standards: A Revised Framework-Comprehensive Version. *Basileia: Bank for International Settlements*. https://www.bis.org › publ › bcbs128

Basel, I. (1999). *Principles for the Management of Credit Risk. Basel Committee on Banking Supervision,* Basel.

Bernard, H.R (2011). *Research Methods in Anthropology: Qualitative Approaches* (5th ed). Blue ridge summit: Altamira Press

Bhardwaj, G., & Sengupta, R. (2008). Subprime cohorts and loan performance of banks in India. *Journal of Banking & Finance*, 41(1), 236-252. https://doi.org/10.1016/j.jbankfin.2013.11.037

Bianchi, M., Di Benedetto, A., Franzò, S., & Frattini, F. (2017). Selecting early adopters to foster the diffusion of innovations in industrial markets: Evidence from a multiple case study. *European Journal of Innovation Management*. 20(4), 620-644. https://doi.org/10.1108/EJIM-07-2016-0068

Blumberg, B. (2011). *Business research methods*. (3rd ed). McGraw-Hill highereducation

Booth, L. (2009). The secret of Canadian banking: Common sense? *World Economics*, *10*(3),1-18. https://www.researchgate.net/publication/46547316_

Capozza, D. R., & Thomson, T. A. (2006). Subprime transitions: lingering or malingering in default? *The Journal of Real Estate Finance and Economics*, *33*(3), 241-258.Dio.10.1007/s11146-006-9984-4

Central Bank of Kenya (2019). *The Impact of Interest Rates Capping on the Kenya Economy- Draft Comments*. Government Press.

Central Bank of Kenya Act. Cap 491. (2014). *Keny*a https://centralbank.go.ke/images/docs/The_Central_Bank_of_Kenya_Act_1st_January_2014.pdf

Central Bank of Kenya, (CBK) (2017). *Bank Supervision report; Kenyan banking Sector for the period ended December 2017*. www.centrabank.go.ke/downloads

Cooper, D. R., & Schinder, P. S. (2014). *Business Research Methods* (12th ed.). McGraw-Hill.

Cowan, C. D., & Cowan, A. M. (2006). *A survey-based assessment of financial institution use of credit scoring for small business lending in Canada*. SBA Office ofAdvocacy.

Cronbach, L. J. (1951). Coefficient and Internal Structure of Tests: *Journal of Psychology*, 16(1), 297-334. https://link.springer.com/article/10.1007/BF02310555

Diamond, D. W. & Rajan, R. G. (2001). Liquidity risk, liquidity creation, and financialfragility: A theory of banking. *Journal of Finance*, 109(2), 287-327. https://www.journals.uchicago.edu/doi/abs/10.1086/319552

Esteve-Perez, S. & Mainez, J. A. (2008). The resource-based theory of the firm and firm survival: *Journal of Small Business Economics*, 30(3), 231-249: DOI: 10.1007/s11187- 006-9011-4

Fofack, A. D., Temkeng, S. D., & Oppong, C. (2021). On the asymmetries created by the Great Recession in the US real estate market. *Journal of Economic and Administrative Sciences*. 1(1), 341-358. dio.org/10.1108/JEAS-12-2020-0218

Freimer, M., & Gordon, M. J. (1965). Why bankers ration credit. *The Quarterly Journal of Economics*, 79(3), 397-416, https://doi.org/10.2307/1882705

Freixas, X., Parigi, B. M., & Rochet, J. C. (2000). Systemic risk, interbank relations, and liquidity provision by the central bank. *Journal of money, credit and banking*, 32(3), 611-638, https://doi.org/10.2307/2601198

Gardeva, A., & Rhyne, E. (2011). Opportunities and obstacles to financial inclusion: Survey report. *Center for Financial Inclusion, Publication*, 12(1), 12-49. *https://centerforfinancialinclusionblog.files.wordpress.com/2011/12/opportunities-and-obstaclestofinancial-inclusion_110708_final. pdf.*

Garson, G. D. (2012). *Testing statistical assumptions*. Asheboro, Statistical Associates Publishing. http://www.statisticalassociates.com/assumptions.pdf

Gatuhu, R. N. (2013). *The effect of credit management on the financial performance of microfinance institutions in Kenya* [Master's Thesis, University of Nairobi]. http://erepository.uonbi.ac.ke/handle/11295/60220

Geitangi, D. M. (2015). *The relationship between credit risk management practices and the performance of loan portfolio of commercial banks in Kenya* [Master's, Thesis, University of Nairobi]. http://erepository.uonbi.ac.ke/bitstream/handle/11295/94747

Giesecke, K. (2014). Credit Risk Modeling and Valuation: An Introduction. *Electronic Journal,* 2(3),1-67, http://10.2139/ssrn.479323

Hardin, W. G., Hill, M. D., Kelly, G. W. & Washamiv J. O. (2010). The market value of real estate investment trust (REIT) liquidity. *Journal of real estate's finance and economics*, 1(2), 1-33. Doi: 10.1.1.614.5092&rep=rep1&type=pdf

Hodgman, D. R. (1960). Credit risk and credit rationing. *The Quarterly Journal of Economics*, 74(2), 258-278. https://doi.org/10.2307/1884253

Humphrey, C. (2015). *Infrastructure Finance in the Developing World* (Working paper series), National Development Banks and Infrastructure Provision: A Comparative Study of Brazil, China, and South Africa https://www.greengrowthknowledge.org/.

Jaffee, D. M., & Modigliani, F. (1969). A theory and test of credit rationing. *Journal of American Economic Review*, 59(5), 850-872. https://www.jstor.org/stable/1810681

Jappelli, T., & Pagano, M. (2010). Information sharing, lending and defaults: Cross-country evidence. *Journal of Banking & Finance*, 26(10), 2017-2045. https://doi.org/10.1016/S0378-4266(01)00185-6

Jeffrey, D., John, W. & McArthur, J.W. (2018). *Technological Advancement and Long-Term Economic Growth in Asia. R & D Structural Transformation and the distribution of income*. https://books.google.co.ke/books?

Jin, G. Z., & Leslie, P. (2003). The effect of information on product quality: Evidence from restaurant hygiene grade cards. *The Quarterly Journal of Economics*, 118(2), 409-451. http://hdl.handle.net/10.1162/00335530332167542 8

Khole, J. J. (2014). *The effects of unsecured lending on loan performance of commercial banksin Kenya* [Unpublished Master's Thesis], University of Nairobi.

Kimani, M. W. (2015). *Credit reference bureau strategy and loan performance at the Commercial Bank of Africa in Kenya* [Unpublished Master's Thesis] University of Nairobi.

Kipkirui. E., & Omagwa, J. (2018). Credit Management Practices and Financial Performance of Microfinance Institutions in Nairobi Central Business District, Kenya. *International Journal of Scientific and Education Research*, 2(5), 64-80. http://ijsernet.org/handle/123456789/18685

Kirui, S. (2014). *The effect of non-performing loans on profitability of commercial banks in Kenya* [Unpublished Master's Thesis] University of Nairobi.

Kumar, R. (2014). *Research Methodology: A step-by-step guide for beginners*. (4th ed). Sage publications.

Kumlachew, Y. M. & Isayas, Y. N. (2020). Firm specific and macroeconomic determinants of financial institutions profitability: evidence from banks and insurances in Ethiopia. *Journal of economics and business*, 3(3), 1136-1147: Doi:10.31014/airo.1992.03.03.269

Lloyd, B. T. (2006). *Money banking and financial markets*. (9th ed). Kansas University Publishers.

Maina, A. N. (2016). *Effect of lending practices on financial performance of commercial banksin kenya: a survey of selected banks within Nairobi* [Unpublished Master's Thesis]United States International University-Africa.

Miller, W. B. (1958). Inter-institutional conflict as a major impediment to delinquencyprevention. *Journal of human organization*, 17(3), 20-23. https://doi.org/10.17730/humo.17.3.05658782m057175g

Moffat, L. (2017). *The Relationship between Technological Advancements and Operational Efficiency of Commercial Banks in Kenya* [Master's Thesis, University of Nairobi].

http://erepository.uonbi.ac.ke/handle/11295/102077

Morsman, E. (2003). *Commercial loan portfolio management*: Robert Morris associates: Philadelphia.

Mugenda, O. & Mugenda, A. (2009). *Research methodology: Quantitative approaches*. ACTS Press.

Mullei, A. (Ed.). (2003). *Growth and Transformation of Small Manufacturing Firms in Africa: Insights from Ghana, Kenya, and Zimbabwe*. African Centre for Economic Growth.

Muthee, N. W. (2016). *Management Practices of Unsecured Loans in Commercial Banks in Kenya: A Case Study of CFC Stanbic Bank Limited* [Master's Thesis, United States International University-Africa]. http://erepo.usiu.ac.ke/11732/2559

Mutua, R. K. (2016). *Impact of credit risk management on financial performance of savings and credit co-operative societies in Kitui County* [Master's Thesis, South Eastern Kenya University]. http://repository.seku.ac.ke/handle/123456789/1097

Mwendwa, N.R. (2016). Influence of Technological Innovation on Bank Performance in Meru Town, Kenya. *International journey of Economics, Commerce and Management United Kingdom,* 4(11) 481-496. *https://ijecm.co.uk/wp-content/uploads/2016/11/41132.pdf*

Myers, S. C., & Brealey, R. A. (2013). *Principles of Corporate Finance*. McGraw-Hill, Irwin Series in Finance.

Nakajima, M., Corbae, D., Ríos-Rull, J. V. & Chatterjee, S. (2006). A quantitative theory of unsecured consumer credit with risk of default. *Econometrica*, *75*(6), 1525-1589. https://doi.org/10.1111/j.1468-0262.2007.00806.x

Nangila, L. O. (2013). *The effect of unsecured personal loans on household welfare of secondary school teachers in Bungoma County, Kenya* [Master's Thesis, University of Nairobi]. http://erepository.uonbi.ac.ke/handle/11295/62286

Nanyuki, L. M. & Omar, N. A. (2016). Effects of mortgage costs on the performance of mortgage lending by commercial banks in Mombasa County. *Imperial journal of interdisciplinary research*, 2(1), 341-363. https://oa.mg/work/2732510379

Ngugi, K., & Karina, B. (2013). Effect of innovation strategy on performance of commercial banks in Kenya. *International Journal of Social Sciences and Entrepreneurship*, 1(3), 158-170. https://www.ijsse.org/articles/ijsse_v1_i3_158_170.pdf.

Nguta, H. M. & Huka, S. G. (2013). Factors influencing loan repayment default in micro- finance institutions: The experience of Imenti North District, Kenya. *International Journal of Applied Science and Technology*, 3(3), 80-84. https://www.ijastnet.com/journals/Vol_3_No_3_March_2013/9.pdf

Ninga, E. M., Muchiri, J. N. & Muthii, S. W. (2019). Effect of unsecured commercial bank loans on financial performance of savings and credit co-operative societies in Kenya. *International journal of accounting, finance and risk management*. 4(1), 1-14. doi: 10.11648/j.ijafrm.20190401.11

Nkuah, E. (2013). *The effect of loan portfolio quality on the performance of banks in Ghana* (Doctoral dissertation, Kwame Nkrumah University of Science and Technology). http://dspace.knust.edu.gh:8080/jspui/handle/123456789/8668

Novak, J. D. & Gowin, D. B. (1984). *Learning 2how to learn*. Cambridge University

Nsiah, R (2014). *An Examination of the Credit Management Practices of Rural Banks: A Case Study of Asokore Rural Bank Limited*. http://dx.doi.org/10.2139/ssrn.2494259

Oballa, P. (2017). *Factors Influencing Performance of Unsecured Bank Loan Portfolios: a Case of Selected Commercial Banks in Nairobi County, Kenya* [Masters Project, University of Nairobi]. http://hdl.handle.net/11295/102099

Obara, V.A. (2018). *Technology Advancement, Strategy and performance of Nation Media Group.*

[Master's Thesis, University of Nairobi]. http://hdl.handle.net/11295/106390

Ochungo, K.O (2013). *Factors affecting loan repayment among customers of commercial banks in Kenya: A case of Barclays bank of Kenya, Nairobi City County*. [Master's Thesis,University of Nairobi]. http://erepository.uonbi.ac.ke/handle/11295/56493

Ongore,V.O & Kusa, G.B (2013). Determinants of Financial Performance of Commercial Banks in Kenya. *International Journal of Economics and Financial Issues*, 3(1), 237- 252 https://www.econjournals.com/index.php/ijefi/article/view/334

Peia, O., & Vranceanu, R. (2014). *Bank funding constraints and the cost of capital of small firms.* (ESSEC Working Paper 1403). http://dx.doi.org/10.2139/ssrn.2402136

Richardson, S. (2002). *Predicting earnings management: The case of earnings restatements. Social Science Research Network* (Working Paper Series 136). https://asset-pdf.scinapse.io/prod/2150201047/2150201047.pdf

Rogers, E.M. (1995). *Diffusion of Innovations* (4th ed.). The free press.

Salas, V., & Saurina, J. (2002). Credit risk in two institutional regimes: Spanish commercial and savings banks. *Journal of Financial Services Research*, 22(3), 203-224. https://link.springer.com/article/10.1023/A:1019781109676

Saunders, M. N. K., Philip, L., Thornhill, A. & Bristow, A. (2019). *Research Methods for Business Students* (8th ed). Pearson education

Spence, M (1973). Job Market Signaling: *The Quarterly Journal of Economics,* 87(3), 355-374. https://cies.org.pe/sites/default/files/cursos/files/spence_1973.pdf

Stieninger, M. & Nedbal, D. (2014). Impacts on the Organizational Adoption of Cloud Computing: A Reconceptualization of Influencing Factors. *Journal of technology*, 16(1), 85-93. https://doi.org/10.1016/j.protcy.2014.10.071

Stiglitz, J. E. (2000). Capital market liberalization, economic growth, and instability. *World development*, 28(6), 1075-1086. https://doi.org/10.1016/S0305-750X(00)00006-1

Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *The*

American economic review, 71(3), 393-410. https://www.jstor.org/stable/1802787

Wachira, E. W. (2013). *The Effect of Technological Innovation on the Financial Performance of Commercial banks in Kenya.* [Master's Thesis, University of Nairobi]. http://erepository.uonbi.ac.ke/handle/11295/58651

Waweru, N. & Kalani, V. M. (2009). Commercial Banking crises in Kenya: Causes and remedies. *African journal of Accounting, Economics, Finance and Banking Research*, 4(4), 12-33. http://globip.com/contents/articles/african-vol4-article2.pdf.

APPENDICES

Appendix I: Cover Letter

George Oundo Muchere

Kenya Methodist University,

Nairobi.

RE: A Request for Completion of Questionnaire Forms

Dear Respondent,

I am pursuing a degree program in Master of Business Administration at Kenya Methodist University. Currently am undertaking a thesis study on loans Portfolio Performance of commercial banks in Kenya for partial fulfillment as a requirement for the program.

I humbly wish to inform you that you are among the participants that have been selected at random to be one of respondent in the study. The questionnaires are simple with few questions, therefore won't take much of your time to complete. I solemnly depend on your participation for purpose of accomplishing my study. I give my assurance to you that information received from you will be strictly treated as confidential and will be availed only to authorized end user.It's my pleasure that you respond to the attached questionnaire enthusiastically.

Thank you,

I remain yours faithfully,

George Oundo Muchere

BUS-3-9143-2/2018

Appendix II: Thesis Questionnaire

Dear Respondent,

I am pursuing a degree program in Masters of Business Administration at Kenya Methodist University. Currently am undertaking a thesis study on loans Portfolio Performance of commercial banks in Kenya for partial fulfillment as a requirement for the program.

I request that you provide correct answer to the best of your knowledge.

PART 1: DEMOGRAPHIC FACTORS

1. Please tick your gender

Male [ ]

Female [ ]

2. Tick tour age:

18- 30 years [ ]

31-40 years [ ]

41 –50 years [ ]

51 years and over [ ]

3. Tick your highest education level.

Diploma level [ ]

Under graduate [ ]

Post graduate degree [ ]

Doctor of Philosophy (PhD) [ ]

Others (please specify) ------------------------

4. How long have you worked with a commercial bank?

Below 5 years [ ]

6-10 Years [ ]

11-15 years [ ]

16- 20 years [ ]

21-25 years [ ]

Over 25 years [ ]

Part 2: The Influence of Credit Management on loans Portfolio performance -Banks

(1) To what extent does Credit Management influence loans portfolio performance of commercial banks?

Very great extent [ ]

Great extent [ ]

Moderate extent [ ]

Little extent [ ]

Not at all [ ]

2) Using scale of 1 to 5 where, 1=Strongly Disagree, 2=Disagree, 3= Undecided, 4=Agree, 5=Strongly Agree: Rate the extent to which you agree or disagree on the following statement relating to Influence of Credit Management on loans Portfolio performance –Banks.

Statement	1	2	3	4	5
Loans Policies of Commercial Banks are reviewed to reduce default risks.					
All clients are appraised as per the loan policies and requirements.					
Loan delinquency is well managed through credit management system					
There are credit committees in place for loans processes and approval					
There are variety of loan products to satisfy different qualities of borrowers.					

Part 3: Unsecured Loans on Loans Portfolio Performance of commercial banks in Kenya.

1) To what extent does Unsecured Loansinfluence loans portfolio performance of commercial banks?

Very great extent [ ]

Great extent [ ]

Moderate extent [ ]

Little extent [ ]

Not at all [ ]

2) Using scale of 1 to 5 where, 1=Strongly Disagree, 2=Disagree, 3= Undecided, 4=Agree, 5=Strongly Agree: Rate the extent to which you agree or disagree on the following statement relating to Unsecured Loans on Loans Portfolio Performance of commercial banks in Kenya.

Rate your opinion against the statements by ticking (√) against each column.

Statement	1	2	3	4	5
All loans are given against securities					
Source of payment of personal loans are strictly based on monthly payslips.					
Only quality borrowers are granted unsecured loans					
Interest rates charged on unsecured loans are comparatively high					
Sometimes there is interference of external forces in loaning processes and payment.					

Part 4: Repayment characteristic on Loans Portfolio Performance of commercial banks in Kenya.

1) To what extent does Repayment characteristic influence loans portfolio performance of commercial banks?

Very great extent [ ]

Great extent [ ]

Moderate extent [ ]

Little extent [ ]

Not at all [ ]

2) Using scale of 1 to 5 where, 1=Strongly Disagree, 2=Disagree, 3= undecided, 4=Agree, 5=Strongly Agree: Rate the extent to which you agree or disagree on the following statement relating to Repayment characteristic influence loans portfolio performance of commercialbanks?

Rate your opinion against the statements by ticking (√) against each column.

	Statement	1	2	3	4	5
	The Bank takes into account the repayment history of the applicant when advancing a loan					
	The Bank liaises with the credit reference bureaus to get information on borrowers in order to reduce default risk					
	The past history of a borrower's debt repayments helps the Bank to decide on access					
	The Bank considers the timing of the repayment when advancing a loan					
	The Bank considers the successful repayment of the loan through cash flow analysis when advancing a loan					
	Banks should monitor borrowers and select the clean borrowers from defaulters and monitor them to make sure that funds are utilized for the intended reason					

Part 5: Technological advancement on loans portfolio performance of commercial banks.

1) To what extent does Technological advancement influence loans portfolio performance of commercial banks?

Very great extent [ ]

Great extent [ ]

Moderate extent [ ]

Little extent [ ]

Not at all [ ]

2) Using scale of 1 to 5 where, 1=Strongly Disagree, 2=Disagree, 3= undecided, 4=Agree, 5=Strongly Agree: Rate the extent to which you agree or disagree on the following statement relating to Technological advancement influence loans portfolio performance of commercial banks?

Rate your opinion against the statements by ticking (√) against each column.

Statement	1	2	3	4	5
There is hacking into customers' accounts either internally or externally					
Internet sourced loans are volatile to default					
Short-term loans are costly to the bank					
There is manipulation in servicing loans through Online either by borrowers or by help of staffs					
Online loans are faster and customer friendly					

Using scale of 1 to 5 where, 1=Strongly Disagree, 2=Disagree, 3= undecided, 4=Agree, 5=Strongly Agree: Rate the extent to which you agree or disagree on the following statement relating Loans Portfolio Performance of Commercial Banks.

Part 6 loans portfolio performances

Using scale of 1 to 5 where, 1=Strongly Disagree, 2=Disagree, 3= undecided, 4=Agree, 5=Strongly Agree: Rate the extent to which you agree or disagree on the following statement relating Loans Portfolio Performance of Commercial Banks.

Statement	1	2	3	4	5
Sound investment policies in place enhances smooth operations					
Government policies and regulations affects operations of banks					
Previous history of a borrower's debt repayments helps the bank to decide on loaning					
Un-serviced loans has negative effects on Performance of Commercial Banks					
Technological advancement has increased customer responsiveness in loans payment.					
Variety of products offered by banks through technological advancement has an impact on Customers satisfaction					

Thank you

Appendix IV: List of Banks

Standard Chartered Bank Ltd,

HF Group Limited

Diamond Trust Bank,

NIC Group plc

KCB Group ltd

Absa Bank Ltd

National Bank of Kenya Ltd,

CO-Operative Bank of Kenya

CFC Stanbic Holdings Ltd,

I&M Holdings Limited

Equity Group

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **897299**

Date of Issue: **23/October/2020**

RESEARCH LICENSE

This is to Certify that Mr.. George Oundo Muchere of Kenya Methodist University, has been licensed to conduct research in Nairobi on the topic: FACTORS INFLUENCING LOAN PORTFOLIO PERFORMANCE OF COMMERCIAL BANKS IN KENYA for the period ending : 23/October/2021.

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Our ref: NAC/ MBA/1/2020/25

8th OCTOBER 2020

Commission Secretary,
National Commission for Science, Technology and Innovations,
P.O. Box 30623-00100,
NAIROBI.

Dear Sir/ Madam,

RE: GEORGE OUNDO MUCHERE (BUS-3-9143-2/2018)

This is to confirm that the above named is a bona fide student of Kenya Methodist University, undertaking masters in Business Administration. He is conducting a research titled: **FACTORS INFLUENCING LOAN PORTFOLIO PERFORMANCE OF COMMERCIAL BANKS IN KENYA.**

We confirm that this thesis proposal has been defended and approved by the university.

In this regard, we are requesting your office to issue a permit to enable him collect data for his masters dissertation.

Any assistance accorded to him will be appreciated.

Yours faithfully,

PROF. Evangeline Gichunge, PhD.
ASS DIRECTOR POSTGRADUATE STUDIES