

**DETERMINANTS OF BUSINESS COLLATERALS AND LOAN PORTFOLIO
QUALITY OF COMMERCIAL BANKS' BRANCHES IN KISUMU
MUNICIPALITY, KENYA**

PRESENTED BY:

FREDERICK OMONDI OCHOLA

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DECLARATION

This management research project is my own original work and has not been presented for any academic award in any institution.

Signed.....

Date.....

Ochola Frederick Omondi

D61/74101/2012

This research project has been submitted for examination with my approval as the university supervisor.

Signed.....

Date.....

Mr. Nixon Omoro

Lecturer

Department of Finance and Accounting

School of Business

University of Nairobi

DEDICATION

To the Almighty God who provided strength and the most needed financial prowess to go through this course.

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In writing a paper of this magnitude, one incurs a debt to so many people that it is almost impossible to thank them all. First and foremost I wish to thank the Almighty God for the gift of life and wisdom in the quest for knowledge and making my dreams come true. This research project could not have been completed without help from my lecturers, family members and friends. I wish to express my sincere gratitude to Mr. Nixon Omoro, my supervisor. His search for inconsistent statements, mistakes and guidance throughout has been of utmost importance. Thank you Mr. Omoro. I would also like to acknowledge my family members who have been supportive throughout my studies. A special thank you to all my lecturers whose contribution cannot go unrecognized. Finally to all my colleagues who were with me at the times of need. May God bless you all.

ABSTRACT

The banking industry in Kenya is now characterized by increasing competition and innovation. This phenomenon has led to most banks adopting cutting edge technology to improve the quality of their loan portfolio. This paper tries to establish how determinants of business collateral impact on loan portfolio quality among the commercial banks within the banking sector. The study focuses on how loan portfolio quality of the commercial banks is affected by determinants of business collaterals. The main value of this study is to establish the relationship between determinants of business collaterals and loan portfolio quality from a Kenyan perspective. Relevant recommendations aimed at enhancing the banking sector based on the topic of the study are also made. The study is not only useful to the policy makers and academicians, but also to entrepreneurs interested in the banking sector. The study established the relationship between determinants of business collateral and loan portfolio quality. Survey of existing literature on the subject was done and interviews were held to 23 respondents to establish existing very significant existing determinants of business collaterals to loan portfolio quality. Data from 23 respondents was collected using questionnaire developed. Information obtained was analyzed. Regression and correlation analysis was used to determine relationships among variables. The research study found out that 84.21% of commercial banks in Kenya have existed for over 10 years, finding also showed that majority of the commercial banks are privately and publicly owned. The findings indicate that all commercial banks require collateral for any loan to be processed. Results of the study reveal strong relationship between legal environment, microeconomic uncertainty and firm and loan characteristics as determinants of business collateral to loan portfolio quality predicting 72.94% of changes in loan portfolio quality. Therefore from the results, these are the major determinants of business collateral and loan portfolio quality. The study also shows that decisions on what collaterals to be pledged are mainly guided by the board members of the commercial banks. This study had limitations. Some of the respondents did not return the questionnaires even after follow ups were done. Thirty questionnaires were issued but only twenty three were returned. There was difficulty in accessing the respondents due to their busy schedules and getting information, which they felt, was confidential. In addition to this the responses were based on the judgment of the interviewees and this could be subjective.

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ACRONYMS AND ABBREVIATIONS

ABC	African Banking Corporation
BOA	Bank of Africa
BBK	Barclays Bank of Kenya
CBD	Central Business District
CBK	Central Bank of Kenya
CBA	Commercial Bank of Africa
DTB	Diamond Trust Bank
FR	Federal Reserve
FSD	Financial Sector Deepening
HFCK	Housing Finance Corporation of Kenya
KCB	Kenya Commercial Bank
LPQ	Loan Portfolio Quality
MPT	Modern Portfolio Theory
NBK	National Bank of Kenya
NGO	Non Governmental Organizations
NPL	Non Performing Loans
NSE	Nairobi Securities Exchange
OLB	Outstanding Loan Balance
PAR	Portfolio at Risk
SME	Small and Medium-size Enterprise
US	United States
VAR	Value at Risk

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

There is widespread evidence regarding the massive use of collateral as a prominent feature of debt contracts. An impressive theoretical literature (Stiglitz and Weiss 1981) motivates collateral as arising from information gaps between borrowers and lenders. In European countries, Dayydenko and Franks (2005) observe that 75.7% of firm loans in France and 88.5% in Germany are secured whereas Gonas et al (2004) point out that 73% of loans are secured for US firm loans, which is similar to the order of magnitude provided by Berger and Udell (1990). In the wake of the recent financial crisis, it has become increasingly clear that significant declines in the value of widely pledged assets can amplify the business cycle through procyclical changes in credit availability (e.g., Bernanke and Gertler, 1989, 1990; Kiyatoki and Moore, 1997; Gan, 2007). For example as U.S housing prices began falling in the latter half of the 2000s, mortgage defaults rose substantially and the value of mortgage related collateral plummeted. As a result, households' ability to borrow against their homes and financial institutions' ability to pledge or sell mortgage backed securities became impaired and a global financial crisis ensued.

Banks use collateral as observed by Greenbaum and Thakor (1995) first; it allows a reduction of the loan loss for the bank in the event of the default of the loan. Indeed it provides to the bank prior title on specific assets. Second, collateral helps to solve the problem of adverse selection borne by the bank when lending, as it constitutes a signaling instrument providing some valuable information to the bank. Indeed, collateral helps the

bank to obtain private information owned by the borrower, as high quality borrowers are more induced to accept to provide collateral in compensation of a low loan rate than low quality borrowers. Third, collateral helps to solve the problem of moral hazard after the loan is granted: namely, the borrower is not inclined to provide the optimal effort or the optimal level of investment. The contractual relationship between borrowers and lenders may be hampered by the presence of asymmetric information, adverse selection and moral hazard, usually leading to credit rationing. As such, the risk of lending may be reduced by collateral. Empirical research on the determinants of the use of business collateral will provide a better understanding of how credit markets actually work and how macroeconomic conditions such as the business cycle affect the likelihood to use collateral in loan contracts. In general, when moral hazard risk shows up in the lending relationship, collateral may play a disciplinary role in the behaviour of the borrower. Consequently, stronger creditor protection from collateral would lead to better credit terms or even the approval of credit that otherwise would not be granted. According to Mann (1997a, 1997b), secured credit limits the firms' ability to obtain future loans from other lenders or reduces the risk of excessive future borrowing.

1.1.1 Business collaterals

Collateral can generally be described as a defined asset issued by the borrower to the lender, in a show of commitment towards repaying the loan advanced. If the counterparty fails to honor his repayments, the collateral is liquidated and the value of the loan recovered from such proceeds. Collateral involves contractual arrangements revolving around the defined asset which are generally difficult to implement in developing and

least developed countries that have diverse and weak legal and regulatory systems. Globally, there exist several forms of collateral accepted by banks for the purpose of guaranteeing the recovery of loans like personal guarantors, receivables, fixed deposit accounts among others (Rajan and Winton 1995). Collateral is a regular ingredient of risky lending. Accordingly collateral is part of many if not most (business) loan contracts in mature markets (Steijvers and Voordeckers, 2009). Due to opaque information and weak enforcement, theory suggests that the request for collateral is even higher in less developed markets (Bae and Goyal 2009, Behr et al. 2011, Hainz, 2003, Menkhoff et al., 2006). Collaterals are of two types namely outside collateral which refers to the case where the borrowing firm pledges assets not owned by the firm. Inside collateral refers to the case where the borrowing firm pledges assets it owns, such as machines and inventories (Rajan 1992).

The determinants of business collateral are empirically modeled as a function of borrower characteristics that reflect their relative propensity to substitute collateral for thorough screening such as credit quality, age, or wealth, and loan characteristics. The determinants include Legal environment, Macroeconomic uncertainty, Relationship banking, Business cycle, Bank ownership, Family ownership and Firm and Loan characteristics (Bigsten et al., 2000). Collateral decreases the riskiness of a given loan since it gives the lender a specific claim on an asset without reducing her general claim against the borrower. The lender can seize these assets if the borrower does not make the agreed-upon payments on the loan, so the lender has some protection if the borrower defaults. The use of collateral can make it easier for firms to obtain loans to finance their investments. Collateral provides incentives for the borrower to avoid default and also

reduces the loss to the lender if a borrower defaults on a loan: if the loan is not paid the lender can seize the collateral (Menkhoff et al 2006).

1.1.2 Loan- Portfolio Quality

The notion of diversification in finance, which is now known as Modern Portfolio Theory (MPT), was first presented by Harry Markowitz (1959). He presented an approach to measure the risk of securities, which could later be put in relation to its return. The intuition is that the more diversified ones portfolio is, the lower the total variance and thereby the total risk of the portfolio. The basic idea is that investors should rationally choose portfolios that offer the highest return for the least amount of risk. Although Markowitz focused on securities, his novel theories have found their way into many industries and environments including optimal credit selection in banking. Gollinger and John Morgan (1993) took Markowitz's portfolio theory to the banking sector and to the allocation and optimization of loan portfolio in particular.

Loan portfolio is typically the largest asset and the most predominant source of income to commercial banks. As such, it is one of the greatest of a risk to commercial banks. Lax credit standards, poor portfolio risk management, or poor internal controls can expose a commercial bank to excessive loss. Effective management of the loan portfolio and the credit function is fundamental to a commercial banks safety and soundness. Healthy loan portfolios are vital assets for banks in view of their positive impact on the performance of the banks. In the international literature, various indicators are used to describe loan portfolio quality, and they are also frequently used in comparisons between countries. The most common indicator to describe portfolio quality is the ratio of Non Performing

Loans (NPL) to total outstanding loans. In international practice, non performance typically means that a loan is overdue for more than 90 days. However, in some countries a shorter delay of more than 30 days or more than 60 days is also defined as non performance (Gambera 2000).

1.1.3 Commercial Banks

Banking occupies one of the most important positions in the modern economic world. It is necessary for trade and industry. The role of the bank in an economy is paramount because they execute monetary policies and provide means for facilitating payments for goods and services in the domestic and international trade (Kwan and Eisenbeis 1994). A commercial bank is a profit-seeking business firm, dealing in money and credit. It is a financial institution dealing in money in the sense that it accepts deposits of money from the public to keep them in its safe custody. Commercial banks also deal in credit, i.e. it creates credit by making advances out of the funds received as deposit. In Kenya, commercial banks are licensed and regulated under the Banking Act, Chapter 488 and the prudential guidelines issued thereunder. Currently there are 43 commercial banks operating in the country. With an aggregate asset base of Kshs 1.9 trillion, deposits of ksh 1.4 trillion, loans and advances of ksh 1.1 trillion and an industry profit before tax of kshs 40.8 billion as at 30th June 2011, the Banking industry plays a major role in development of the Kenyan economy form a large composition of players in the Kenyan banking industry (<http://www.centralbank.go.ke>). Commercial banks branches within Kisumu municipality were chosen for the study because of the uniqueness of how they perceive

and view certain issues differently even though the regulator is common to all. Different commercial banks branches have different limits when it comes to loan approvals.

1.1.4 Kisumu Municipality

Kisumu municipality is located in Kisumu County. Due to the local climate there is maize farming, sugarcane and fish farming as the main economic activities. It is cosmopolitan with the dominant community being Luos. In addition to this there are many NGOs operating within the county. The major economic activities include sugarcane farming, maize farming, fishing and some poultry keeping. Kisumu is well served with financial institutions that provide banking microfinance services to the local population. The banks that currently operate in the central business district within the municipality include: Co-operative Bank of Kenya, BOA, KCB, BBK, NBK, CBA, DTB, Equity bank Ltd, Post bank, Family bank, Giro bank, Prime bank, Credit bank, K-rep bank, ABC bank, I&M bank, Eco bank, HFCK, First community bank, Bank of Baroda, Chase bank, Guardian bank, NIC bank, CFC bank, StanChart, and Fina bank (Guide to Kenya, 2012). Kisumu municipality was chosen for the study because of the availability of the many commercial banks branches operating there and this will make the study and data collected to be more representative of the national outlook.

1.2 Research Problem

Many businesses post collateral as security for loans. Collateral protects the lender if the borrower defaults. Berger and Udell (1990) found in their paper that net charge offs (the amount of a loan the bank cannot collect) are likely to be higher when a loan is secured.

They also found out borrowers who post collateral are more likely to be late on their payments. Their findings suggested that secured loans are riskier for the banks. Berger and Udell (1990) used the Federal Reserve (FR) survey of terms of bank lending data and documented a positive relationship between collateral and risk. Klapper (1999) investigated the use of accounts receivable and inventory as collateral by large firms, while Carey, Post, and Sharpe (1998) found that commercial finance companies who specialize in asset based lending (Collateralized lending) tended to lend to riskier firms than do commercial banks. Both papers found a positive relation between collateral and risk in the context of both small and large firms. The only theoretical paper to obtain a positive relation between borrower risk and collateral pledged is by Boot, Thakor, and Udell (1991), who examined collateral in the presence of both moral hazard and adverse selection.

Inderst and Mueller (2007) found out in their study that one will observe a higher likelihood of collateral for loans to borrowers with ex ante credit risk than for loans to borrowers with low credit risk. They also showed that the proportion of loans with ex post default will be higher among loans with no collateral. Jimenez, Salas and Saurina (2006) provide empirical evidence that supports the first prediction, and Jimenez and Saurina (2004) confirm that collateralized loans are post riskier than non- collateralized loans.

Kenyan banks, like other financial institutions rely heavily on collateral lending which is a traditional instrument of providing security against loan advances. Although collateral lending gives lender some confidence, it has serious shortcomings. Notably, it hampers

competition and limits lending activities especially if the banking sector demonstrates over-reliance on it [Financial Sector Deepening-Kenya (FSD-Kenya 2009)]. Owuor (2008) did a survey of credit default prediction factors of commercial banks in Kisumu. Awuor (2008) also did a survey of the use of financial ratios by commercial banks in Kenya. Karumba and Wafula (2012) in their study on banks over reliance on collateral lending used time series data, deploying co- integration and error correction techniques to identify a long run model for determining bank lending behaviour in Kenya. They found evidence of over-reliance on collateral lending by banking sector in Kenya which they said can be attributed to less attention given to other credit mitigation measures by banks.

However, not much has been studied by the papers on how determinants of collateral affect the loan portfolio quality of the commercial banks leaving a gap that forms part of my study. It is from the above observation that this research work is skewed at developing a regression model with the specific purpose of providing an optimal solution to loan portfolio quality vis a viz Determinants of business collaterals. There is a lot of scholarly literature, philosophical and empirically tested theories, on the subject of business collaterals. However, this literature generally does not tell us much about the relationship that can be expected between the determinants of collateral and loan portfolio quality in commercial banks. This research is undertaken to fill this gap by undertaking this survey to establish the determinants of business collaterals on loan portfolio quality in commercial banks. This study therefore seeks to answer what is the relationship between the determinants of business collaterals and loan portfolio quality of commercial banks branches in Kisumu municipality?

1.3 Research Objectives

The research objectives of the study were:

- i. To establish the determinants of business collateral on loan portfolio quality.
- ii. To determine the relationship between determinants of business collateral and loan portfolio quality.

1.4 Value of the Study

The study will prove important in providing information to scholars and academicians who may wish to conduct further study on this subject area and other related aspects of this study. The research will also add to the stock of existing body of knowledge, arguments and findings concerning the relationship between determinants of business collaterals and loan portfolio quality. The management of commercial banks will be able to use it as a benchmark to know what collateral to ask for from their customers to help mitigate the problems of adverse selection and moral hazard hence make informed lending decisions. It will also help them in closely monitoring the asset quality (Loan portfolio). Investors may need to know what to offer as collaterals any time they are seeking a loan facility from the banks. CBK as a Regulatory body may also need the findings to help it come up with proper prudential guidelines that will cover the gaps on the diverse and weak legal and regulatory systems concerning business collaterals in relation to loan portfolio quality.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

After stating the problem and setting of study objectives in chapter one, this chapter present a review of the literature on the determinants of business collateral and portfolio quality. It gives an overview of the underpinning theories and evidence of collateralization, theories relating to non-performing loans, the determinants of business collaterals, empirical studies and a summary of the chapter.

2.2 Theoretical Underpinnings of the Study

This study is premised on a number of studies. Throughout the years, several theoretical contributions attempting to explain the wide spread use of collateral have been developed (e.g. Chan and Kanatas 1985, Stulz and Johnson 1985). Lenders must value and monitor collaterals. Both parties have to resolve the conflicts of interest between secured and unsecured claimants created through the use of collateral (Leeth and scott 1989, Mann 1997a, 1997b). Some of the theories are well discussed below.

The lender based theory as stipulated by Inderst and Mueller 2007 explain why loans would be secured with collaterals as a consequence of the heterogeneity of lenders in the same credit market. On the contrary, the borrower based theory explains collateral as a function of information asymmetries between borrowers and lenders about the credit risk of the loan. Secured debt also limits possible claims in bankruptcy and as a consequence creates shareholder wealth (Scott 1977). In liquidation, pledged collateral allocates resources away from unsecured to secured creditors. Under conditions of perfect

information, security protection lowers the interest rate of secured creditors. If due to incomplete information, some unsecured creditors do not react to this decrease in legal protection, then firms can expropriate wealth from these unsecured claimants by offering collateral to lenders (Leeth and Scott 1989). In minimizing information asymmetry, the borrower receives in exchange for collateral the advantage of a lower interest rate but incurs the risk of losing collateral when the return of the project turns out to be too low (Chan and Kanatas 1985, Bester 1985, Besanko and Thakor 1987, Chan and Thakor 1987). Thus, collateral serves to convey indirectly information between the two parties.

The signaling argument states that good companies should provide more collateral so that they can signal to the banks that they are less risky type borrowers and then they are charged lower interest. Meanwhile the reverse signaling argument states that banks only require collateral and or covenants for relatively risky firms that also pay higher interest rates (Chodechai, 2004; Ewert and Schenk, 1998). However, Stiglitz and Weiss (1981) show that collateral may introduce an adverse selection problem that associates higher levels of collateral with higher average borrower risk. Collateral can be used as a signaling instrument providing banks with valuable information about the borrower's quality that would not be available otherwise. Therefore, high quality borrowers are more willing to pledge collateral in compensation of more favorable contract terms than low quality borrowers. Hence, collateral helps reduce adverse selection by signaling (Stiglitz and Weiss, 1981; Bester, 1985; Chan and Kanatas, 1985; Besanko and Thakor, 1987).

A model of neoclassical credit market postulates that the terms of credits clear the market. If collateral and other restrictions (covenants) remain constant, the interest rate is

the only price mechanism. With an increasing demand for credit and a given customer supply, the interest rises and vice versa. It is thus believed that the higher the risk failure of the borrower, the higher the interest premium. Therefore with an increasing demand for credit and a fixed supply of the same, interest rates will have to rise (Ewert et al, 2000). The theory creates the impression that collateral has no effect on lending rate, and if a risky borrower would wish to face the same lending rate as a borrower with a lower risk, then all that is required is to pledge more collateral to lower his risk profile and therefore enjoy a lower risk premium (Karumba and Wafula 2012).

The classic theory is the “moral hazard” hypothesis, which attributes excessive risk-taking behaviour to a situation where another party bears part of the risk and cannot easily charge for or prevent this risk taking (Stiglitz and Weiss, 1981). Guttentag and Herring (1984), argue that disaster myopia arises when it is impossible to assign a probability to a future event. Such an event might be the result of a change in the economic regime, a change in the regulatory framework or either a natural or man made disaster. If managers cannot discount the effects of a future negative event, then they may be more prone to credit expansion and, when the event happens, it drastically cuts lending.

Under the “bad luck’ hypothesis, external events (e.g. a local plant closing) may precipitate an increase in problematic loans for banks (Gambera 2000). Alternatively, under the “bad management” hypothesis, low measured cost efficiency is a signal of poor

senior management practices, which apply to both day-to-day operations and to loan portfolio management (Kwan and Eisenbeis 1994).

2.3 Determinants of Business Collateral

The determinants or drivers of business collaterals has been explained in terms of legal environment, Macroeconomic uncertainty, Relationship banking, business cycle, Bank ownership, Family ownership and Firm and Loan characteristics.

2.3.1 Legal Environment

Haselmann and Wachtel (2006) empirically found that differences in the legal environment are an important determinant of bank portfolios' composition. Better legal systems are associated with less lending to low asymmetric information customers, such as large and government owned enterprises. Similarly, when bankers have a positive perception of the legal environment, there tends to be relatively more lending to information opaque borrowers, such as SMEs and mortgage borrowers. Consequently a better legal environment not only fosters a bigger credit market but also shifts the composition of lending towards capital formation.

The legal environment in which banks operate may influence their lending composition. The "lending infrastructure of a country" (Berger and Udell, 2006) determines to what extent certain lending technologies can be used and, thus, to what extent banks are limited to certain types of lending. La Porta et al (1997, 1998) show that such legal institutions differ markedly between countries and are an important determinant of the amount of external financing that is available for the business sector. Legal institutions

may also affect the composition of bank lending. For instance, asset-based lending technologies, where the value of collateral is more important than the financial ratios of the borrower, are used by many large banks to lend to relatively opaque SMEs (Berger and Udell, 2006). Weak commercial laws on security interests (such as movable and immovable assets) and the enforcement of such collateral rights may make asset-based lending (for example to SMEs) less attractive. Similarly, weak restrictions on the sharing of information and the unavailability of credit bureaus may limit the use of credit-scoring technologies

2.3.2 Macroeconomic Uncertainty

The close relationship between macroeconomic cycles and boom and bust cycles in bank lending and asset prices has been described as a stylized fact by several authors dealing with financial stability. Borio (2002) provided about the cyclical co movements between credit, asset prices and macro economy. Goodhart et al., (2004) analyzed this dependency in the context of banking system liberalization and banking regulations. Macroeconomic factors considered would relate to the general state of the economy, the conditions of price stability, the cost of servicing debt, the debt burden, financial and real wealth and the out for economic growth.

2.3.3 Relationship Banking

Boot (2000), in his summary paper on relationship banking, argues that banks develop close relationships with borrowers over, as they gather information about the borrowers. There are two types of information: “hard” information (for example, accounting numbers, financial ratios, etc) which can be passed on easily within the organization,

while “soft” information (for example, a character assessment, and the degree of trust is much harder to rely on (Degryse et al.2008). The proprietary information about borrowers that banks obtain as part of their relationships may give them an information monopoly (Greenbaum et al. 1989). This happens because the information advantage of inside banks, compared to outside banks, may imply that firms face informational switching costs when they are willing to borrow from outside banks or other finance providers (Degryse et al. 2008). In this case, the bank extracts a higher profit or higher interest rate from captured and lock-in (opaque) borrowers than from those borrowers who have ready access to other financing alternatives (Ausubel 1991). Most studies find that relationship borrowers have better access to credit. A bank that has a strong relationship with a firm is more likely to extend credit to the firm in response to its financial deterioration, than a non-relationship lender (Peek and Rosengren 2004, Kobayashi et al. 2002).

2.3.4 Business Cycle

Vennet et al. (2004) argue that the value of collateral is likely to be procyclical; asymmetric information will be relatively high in business cycle downturns and relatively low in booms. This implies that bank intermediation becomes riskier during downturns through a reduction in the value of collateral attached to outstanding loans, and an increase in the degree of asymmetric information. Furthermore, markets for collateral goods are very illiquid, due to strong insider-control (Berglof 1995, and Belyanova and Rozinsky 1995).

2.3.5 Bank Ownership

Given that the knowledge foreign banks have of local markets is relatively limited, they may prefer to grant credit only to large and foreign owned firms that are viewed as being most transparent and less risky. Domestic banks on the other hand may have a deeper understanding of the local business sector and will be able to base credit decisions on soft and more qualitative information that is available on local and smaller firms. Small domestic banks may be better suited to collecting such information over time when dealing with smaller clients (Berger and Udell, 1995, 2002). They may also have a greater commitment to local prosperity (Collender and Shaffer, 2003).

2.3.6 Family Ownership

Family firms would also be characterized by a cohesive management structure, self-regulation and personal contacts with external parties (Bopaiah, 1998). However, recent studies concluded that especially private family firms could be very vulnerable to agency problems. First, a family is not necessarily a homogeneous group of people with congruent interests (Sharma et al., 1997). Secondly, Schulze et al. (2003) suggest that parents' altruism will lead them to be generous to their children even when these children free ride and lack the competence or intention to sustain the wealth creation potential of the firm. Since the replacement of inefficient family members/managers is more difficult, family involvement can create a decrease in economic performance. This would threaten the long term performance and even continuity of the family firm, which has also implications for bondholders. Personal collateral or commitments could bring about potential agency problems between individual partners in small firms due to unequal risk

sharing and free-riding among the partners. When partners pledge personal collateral or guarantees, the actions of one partner can place the wealth and personal assets of all other partners at risk (Ang et al., 1995). Because of the stronger social ties in family firms, this potential agency problem is expected to be less prevalent in these firms. Hence, family firms are expected to be less opposed to personal commitments (Voordeckers and Steijvers, 2006).

2.3.7 Firm and Loan Characteristics

Chan and Kanatas (1985) argue that newer and smaller firms will offer more collateral in order to signal project quality when lenders have less information concerning a firm's operations. According to Altman et al. (1977), debt expenses for small firms may be reduced to a larger extent by collateral because of their higher probability of bankruptcy. Empirically, this negative relationship between firm size and collateral usage was confirmed by Dennis et al. (2000), Lehmann and Neuberger (2001) and Menkhoff et al. (2006). None of these studies differentiate between business and personal collateral. However, more recent studies by Ang et al. (1995), Avery et al. (1998), Voordeckers and Steijvers (2006) and Brick and Palia (2007) make the distinction. Avery et al. (1998) argue that firm size is expected to be negatively related to the costs incurred by lenders, partly due to the availability of more business assets that can be pledged as business collateral compared to smaller firms. Larger firms also tend to be larger borrowers, generating scale economies in screening, contracting and monitoring the firm as well as the business collateral pledged. Therefore, one could expect that larger firms use less personal commitments than smaller firms. Given these arguments, Jackson and Kronman

(1979) conclude that larger loans should be more frequently secured, as was empirically confirmed by Cressy (1996). Loan size is also linked to the probability of default, since a firm that receives more credit attains a higher leverage level and so increases the risk of non payment (Leeth and Scott, 1989; Avery et al., 1998; Jimenez and Saurina, 2004).

2.4 Loan Portfolio Quality

Portfolio theory is the most frequently applied to analyses of financial assets. Markowitz approach of 1959 applies on a commercial banks' credit portfolio. Black and Scholes (1973), provided banks with a strategy on how to diversify their loans and investments. Before this, banks had no real investment strategy and their only option was to obtain as much collateral as possible and make default unattractive option. The principle behind the Black-Scholes model is to diversify your equity so that your lowest risk bond produces the same risk as your highest risk investment. When your investment has reached this equilibrium, then risk minimization has been achieved. Banks portfolio is managed in such a way that banks get the capital to purchase debt from other institutions within the bank, such as what it takes in from deposits, fees on the various services it renders, and even from outside sources. The firm must manage this portfolio in such a way that return is high, while risk is kept to a minimum. The debt the bank has acquired has value. The value contributed by the rest of the bank should be equal to the excess of the market value of its borrowing.

2.5 Linking Determinants of collaterals and Loan Portfolio Quality

The risk attributable to loan default leads to high effective borrowing rates, through a risk premium that varies with the exposure to default. This is because a bank has to undergo

costs to carefully evaluate and closely monitor the risk, especially in an environment where probability of default is high using the determinants of business collaterals (Parlour and Winton, 2008). Steijvers and Voordeckers (2009) argues that banks are in a good position to evaluate the future prospects of new investment projects and that collateral will weaken the bank's incentive to do so. On the other hand, if the loaning company maximizes profits the bank indirectly gains credit security. With this in mind, a bank will want to extend credit to the company with the lowest risk of default. Which company has the lowest risk of default? Companies that maximize profit, therefore the more profit a company makes, thus lower the VAR (Value at Risk is the highest possible loss within a certain time period and confidence interval) Bessis, (1998).

2.6 Empirical Studies

Berger and Udell (1990) investigate the relationship between collateral and credit risk on a sample of 1 million loans from US banks. In a first part, these authors test the hypothesis that adverse selection matters for the use of collateral by regressing risk premium on a set of loan characteristics including a dummy variable considering whether the loan is collateralized or not. The conclusion does not corroborate the adverse selection argument, as a positive and significant relationship is observed between collateral and risk premium. This result may be explained by the fact that banks require more collateral from riskier borrowers who are also charged with higher loan rates. In a second part, several ex post measures of risk, including net charge offs to loans and loan repayments past due to loans, are regressed on a set of borrower characteristics aggregating information by loan, so that this regression is performed at the borrowers

level. They observe that collateral is associated with credit risk. This work concludes in favor of a positive relationship between collateral and credit risk, which prompts banks to ask more collateral from riskier companies, and consequently to charge them with higher loan rates.

Panagopoulos and Spiliotis (1998) studied the determinants of commercial banks lending behaviour to commercial firms Greece by inferring on the Post-Keynesian notion that banks lend money for purposes of execution of production activities by firms. The study uses firm expenses as well as general macroeconomic monetary indicators to predict the level of loan advances to industrial, hand craft and trade companies in Greece. The loan predictor variables are last period loan amount, employment costs or wage bill, corporate tax expenses and deposits.

Jimenez and Saurina (2004) focus on the determinants of the probability of default of bank loans on a wide set of 3 million loans provided by Spanish banks. Probability of default is considered as an ex post credit measure. Therefore they test whether both arguments of the use of collateral based on information asymmetries are validated, namely whether the presence of collateral brings down the probability of default. The probability of default is explained by a set of loan characteristics including some information on the collateral. The three dummy variables depending on the collateralized share of the loan are jointly taken into account in the model. They find a greater probability of default for secured loans.

Finally the recent study by Jimenez et al. (2006) takes a broader perspective by analyzing a wide range of determinants of the presence of collateral. Tested determinants include

the characteristics of the borrower with credit quality, but also the characteristics of the lender, the competition on the loan market and the macroeconomic conditions. Credit quality is related to the theories of the use of collateral by banks. It is proxied by a dummy variable taking into account the fact that the borrower had recently a loan in default. The authors then observe that the credit quality of the borrower is the main determinant of the use of collateral. This survey on the empirical literature on the motives of the use of collateral can be summarized in three points. First, it appears that empirical evidence is rather in favor of the observed-risk hypothesis according to which riskier borrowers are required to provide more often collateral, in accordance with the common opinion of bankers.

2.7 Summary

Evidence from literature review show that there is massive wide spread use of collateral and factors like bank ownership, business cycle, relationship banking, legal environment and macroeconomic conditions affect collateralization. From the literature review, commercial banks must value and monitor collaterals. This will help reduce the risk that emanates from the probability that borrowers will default on terms of debt, subsequently putting its capital in jeopardy. Commercial banks will be able to mitigate this through collateralization if they are able to understand to what extent the determinants of business collateral affect the asset side of their books. In liquidation, pledged collateral allocates resources away from unsecured to secured creditors. This study seeks to establish the relationship between determinants of business collateral identified in the literature review and the loan portfolio quality.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter presents the methodology that is used in the study. It spells out the design, study population, sample and the techniques and method of data collection, processing and analysis that is employed.

3.2 Research Design

The descriptive cross sectional survey was used to provide answers to the phenomenon questions underlying the study. The research involved establishing the relationship between determinants of business collateral and the loan portfolio quality. This was done using correlation survey design. Cohen and Manion (1980), ascertains that the intention of survey research is to gather data at a particular point in time and use it to describe the nature of existing conditions. This was done in a descriptive nature, in the sense that the researcher sought to describe a phenomenon that in it is not totally unexplored, but not well enough elaborated on (Sekaran 1992).

3.3 Population of the Study

The total numbers of commercial banks branches within the CBD of Kisumu municipality are 30. Since the unit of analysis is 30, no sampling was done hence the entire population was studied. The study covered commercial banks branches within the CBD of Kisumu municipality. The institutions were chosen because there was evidence

of weakness in loan portfolio quality vis a viz determinants of business collaterals (Karumba and Wafula 2012).

3.4 Data Collection

Given the nature of the study, research assistants were used since this accelerated the rate of gathering information. The study made use of both primary and secondary data. Questionnaires were collected from the respondents after a week having given them enough time to fill the questionnaire. This helped minimize the leading effect described by Sekaran, (1992). The interviews were administered by the researcher to the respondents and their responses recorded.

3.5 Validity and Reliability

Validity is the accuracy and meaningfulness of inferences which are based on the research results. It is the degree to which results obtained from the analysis of the data actually represents the phenomenon under study. The purpose of validity is to standardize research. Without standardization one cannot compare and evaluate qualitative research. To maintain a high standardization level requires research honesty. In ensuring honesty the researcher was required to reveal how relevant the research is in the form of validity.

The instruments used in the study were developed by the researcher with the guidance of experts in research methodology and lecturers from the School of Business, University of Nairobi. This enabled the researcher to develop instruments that were used to yield face and content valid data.

Reliability implies that measuring instrument should be able to give reliable and stable results or the repeatability of the research. A high reliability means that different and independent measuring of the same phenomenon gives approximately the same result each time (Eriksson et al 2001). If it is reliable other researchers should be able to come to the same results if they use the same method. To determine the reliability a pre test was done in all the commercial banks branches within Kisumu municipality.

3.6 Data Analysis

The quantitative data was coded and analyzed using descriptive statistics such as mean, frequencies and percentages and the findings presented in tables, charts and graphs. Inferential statistics was also applied by the use of a paired sample t-test to test the difference of the determinant factors and loan portfolio quality. For qualitative data, the responses were grouped in themes and frequencies done and verbatim reporting used where it was applicable.

Descriptive statistics and regression model were used in the analysis of the data. The descriptive statistics method was used to explain the determinants of business collaterals. This involved the use of frequency tables and percentages. The regression model was used to identify the determinants of business collaterals on Loan portfolio quality by commercial banks. The empirical model applied for the study was expressed implicitly as;

$$LPQ = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + \epsilon_i$$

Where:

LPQ: Loan Portfolio Quality

a: intercept on the regression line

b: weights associated with the independent variables; X₁- Business cycle, X₂- Relationship Banking, X₃- Legal Environment, X₄- Macroeconomic Conditions, X₅- Bank Ownership, X₆- Firm and Loan Characteristics, X₇- Family Ownership, ϵ_i - Error term controlling for unit specific residual in the model

The significance of the above regression model was tested using the R² value. A higher percentage indicated that the coefficients explained well the dependent variable while a low percentage was the reverse. In this case therefore an R² value of more than 70% was significant to explain the dependent variable against the above dependent variables.

LPQ which is the dependent variable was also analyzed using ratio as follows;

$$LPQ = NPL/OLB$$

Where: LPQ- Loan Portfolio Quality

NPL- Non Performing Loans

OLB- Outstanding Loan balance

LPQ with Portfolio at Risk (PAR) of less than 1% was considered good quality as it also signified above 95% repayment rate (Gambera 2000).

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

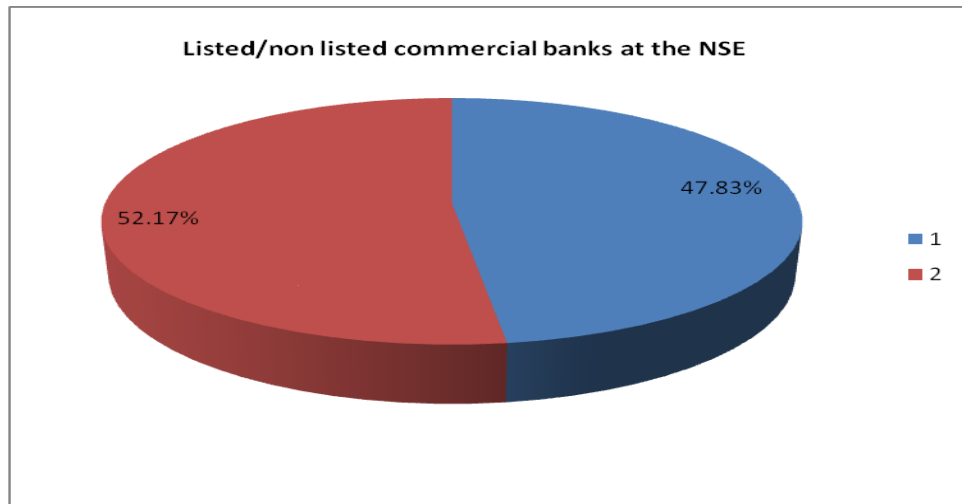
This chapter presents data analysis, results and discussions from the primary data gathered from the study respondents. Thirty commercial banks were targeted out of which 23 responded. This was a response rate of 77%. This response rate was excellent, representative and conforms to Mugenda and Mugenda (2003) stipulation that a response rate of 50% is adequate for analysis and reporting; a response rate of 60% is good and a response rate of 70% and over is excellent. The respondents were credit managers of the various commercial banks. All the data collection instruments used was edited for completeness and consistency.

4.2 Data Presentation and Interpretations

Discussions of the results, summaries of the data findings together with interpretations have been presented by use of tables, percentages, frequencies, charts and line and bar graphs.

4.2.1 Analysis of General Information

Figure 4.1: Listed and non listed commercial banks at the NSE



Source: Field data 2013

The pie chart above shows that according to the data collected, 52.17% of the commercial banks are not listed at the NSE while 47.83% are listed at the NSE.

4.2.2 Year of establishment

Table A: Commercial banks years of establishment

1.	ABC, Equity Bank, Family Bank and K-rep Bank	1984
2.	BOA	2004
3.	Bank of Baroda	1908
4.	BBK	1953
5.	CFC Stanbic	1982

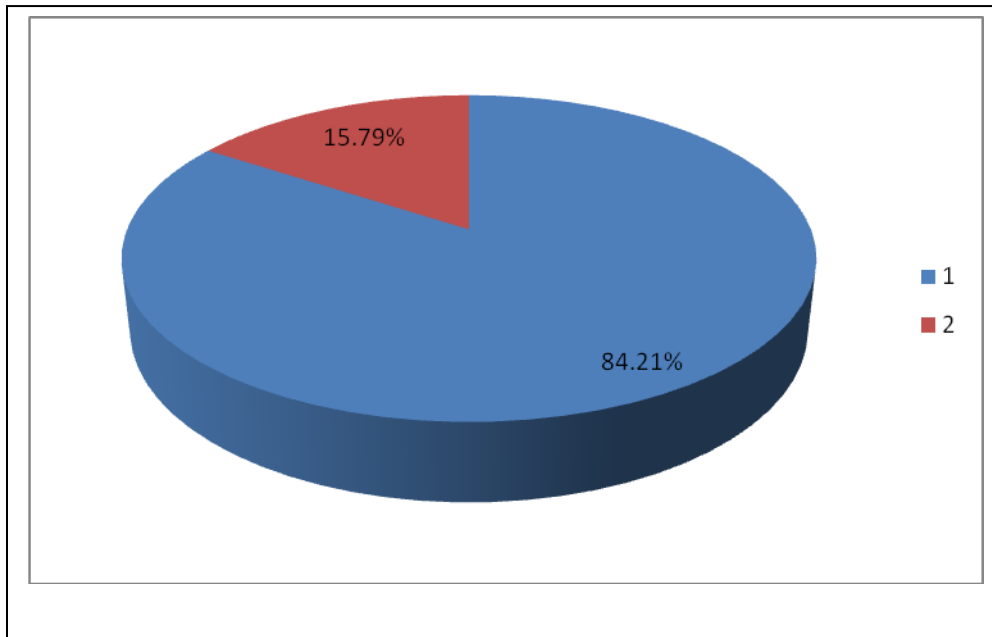
6.	Chase	1995
7.	CBA	1962
8.	Co-operative bank and HFCK	1965
9.	Credit Bank	1986
10.	Eco Bank	1985
11.	First Community Bank	2007
12.	KCB	1896
13.	National Bank of Kenya	1968
14.	NIC Bank	1959
15.	Standard Chartered Bank	1910

Source: Field data 2013

From the above table, KCB comes out as being the oldest in terms of year of establishment (1896) and First Community bank being the most recently established in the year 2007.

4.2.3 Existence of commercial banks in Kenya

Figure 4.2: Existence of Commercial Banks in Kenya

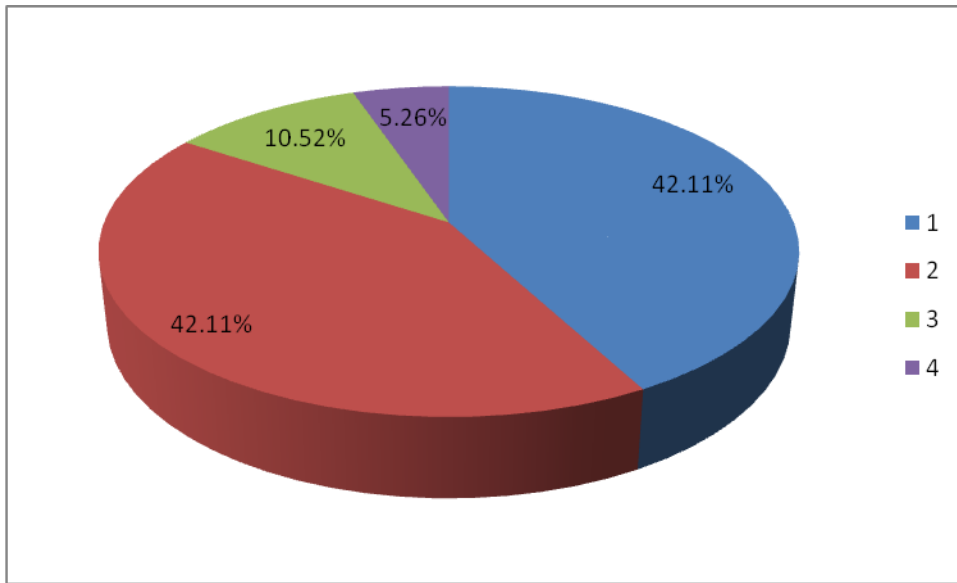


Source: Field data 2013

The findings also show that the earliest commercial bank to be established was in 1896 while the latest was in 2007. 84.21% of the target population (commercial banks) have existed in Kenya, for over 10 years and 15.79% between 5 years to 10 years.

4.2.4 Ownership

Figure 4.3: Ownership



Source: Field data 2013

In terms of ownership, 42.11% of the commercial banks are privately owned, 42.11% are owned publicly/locally, 10.52% are foreign owned and 5.26% cooperatively owned. We can therefore deduce that majority of the commercial banks are privately and publicly owned.

4.2.5 Business collateral

Globally, there exist several forms of collateral accepted by banks for purposes of guaranteeing the recovery of loans like personal guarantors, receivables, fixed deposit accounts among others. All commercial banks accept collateral for the guarantee of loans. From the data collected all the commercial banks require collateral to serve as security for any loan applied for.

Table B: Business collaterals required for different loan amounts

Loan Amount (Ksh)	Collateral	Banks
5,000 – 500,000	Personal guarantee and Chattels i.e. household items and business stock,	All the 23 commercial bank branches under study.
500,001 – 1,000,000	75% chattels and 25% formal security i.e. log books, title deeds, fixed deposits, shares, insurance policies.	All the 23 commercial bank branches under study.
1,000,001 – 2,000,000	Chattels 50% and formal security 50%	All the 23 commercial bank branches under study.
2,000,001 - above	Chattels 25% and formal security 75%	All the 23 commercial bank branches under study.

Source: Field data 2013

From the above table we can deduce that all commercial banks require security for any loan application. Security only varies with the amount of loan requested. For loans ranging between ksh 5,000 to ksh 500,000 what is required as security are only chattels. For loans ranging between ksh 500,001 to ksh 1,000,000 a mix of chattels (75%) and formal security (25%) is required. For loans ranging between ksh 1,000,001 to ksh 2,000,000 chattels (50%) and formal security (50%) is required. For loans ranging ksh 2,000,001 and above chattels (25%) and formal security (75%) is required.

4.3 Results for Questionnaire Analysis.

Table C: Year of Establishment and ownership.

Variable	Mean	Standard Deviation	Minimum	Maximum
Year of Establishment (YrEstab)	1967.4	30.68	1896.0	2007.0
Ownership (Owner)	4.75	3.77	1.00	8.00

Source: Field data 2013

The table above shows that the earliest commercial bank was established in the year 1896 while the most recent was established in the year 2007. The mean is 1967.4 implying that this was the peak year of establishment. We can therefore deduce that most commercial banks were established during this period. However, there is a high standard deviation of

30.68 indicating that there was a wide spread in the establishment of commercial banks between 1896 and 2007.

Table D: Interest Rate for Ksh.10, 000.

Variable (*000)	Mean	Standard Deviation	Minimum	Maximum
R3Mon10,	6.14	4.59	3.75	18.00
R6Mon10,	11.06	4.71	7.50	24.00
R9Mon10,	15.50	3.95	11.25	24.00
R12Mon10	19.57	4.25	8.30	24.00

Source: Field data 2013

The interest rate charged for loans amounting to Ksh.10, 000 for 3 months is averagely 6.1% with 3.75% being the minimum and 18% being the maximum. The standard deviation is 4.59, which means it deviates by this amount away from the mean. For loans amounting to 10,000, the interest rate charged for 6 months is averagely 12.7% with 7.5% being the minimum rate and 18% being the maximum rate. The standard deviation is 4.71. The interest rate charged for loans amounting to Ksh.10, 000 for 9 months is averagely 13.75% with 7.5% being minimum and 20% being the maximum. The standard deviation is 3.95. For loans amounting to 10,000, the interest rate charged for 12 months is averagely 21.8% with 8.3% being the minimum rate and 24% being the maximum rate. The standard deviation is 4.25. The standard deviation is generally high (ranging 4 – 4.7) for the loans amounting to Ksh.10, 000 for all the periods mentioned

above. We can deduce that this is because of the high cost of commercial borrowing. The organization charging the highest interest rate ranging between 6% and 24% is HFCK.

Table E: Interest Rate for Ksh.50, 000.

Variable (*000)	Mean	Standard Deviation	Minimum	Maximum
R3Mon50,	6.31	5.45	3.75	24.00
R6Mon50,	11.41	4.86	7.50	24.00
R9Mon50,	15.50	3.95	11.25	24.00
R12Mon50	19.18	4.68	8.00	24.00

Source; Field data 2013

Loans amounting to 50,000 have an average interest rate of 6.3% for 3 months, 11.4% for 6 months, 15.5% for 9 months and 19.2 for one year. The standard deviation is 5.45 for 3 months, 4.86 for 6 months, 3.95 for 9 months and 4.68 for 12 months. The minimum interest rate charged for loans amounting to Ksh. 50,000 are 3.75%, 7.5%, 11.25% and 8% for 3, 6, 9 months and 12 months respectively. The maximum interest rate charged for loans amounting to Ksh. 50,000 are 24%, for 3, 6, 9 months and 12 months. The standard deviation is high (ranging from 3.95 to 5.45) meaning that the dispersion between the interest rate is a bit high. For the same loan amount and duration, some commercial banks charge reasonable rates while others charge very high rates, causing the high dispersion. HFCK still remains the commercial bank that charges the highest interest rate.

Table F: Interest Rate for Ksh.100,000.

Variable (*000)	Mean	Standard Deviation	Minimum	Maximum
R3Mon100,	6.42	5.91	3.75	24.00
R6Mon100,	11.06	5.11	7.50	24.00
R9Mon100,	15.50	4.32	11.25	24.00
R12Mon100	18.98	4.31	8.00	24.00

Source: Field data 2013

Loans amounting to 100,000 have an average interest rate of 6.42% for 3 months, 11.06% for 6 months, 15.50% for 9 months and 18.98 for one year. The standard deviation is 5.91 for 3 months, 5.11 for 6 months, 4.32 for 9 months and 4.31 for 12 months. The minimum interest rate charged for loans amounting to Ksh. 100,000 are 3.75%, 7.5%, 11.25% and 8% for 3, 6, 9 months and 12 months respectively. The maximum interest rate charged for loans amounting to Ksh. 100,000 are 24%, for 3, 6, 9 months and 12 months. The standard deviation is generally high (ranging 4.31 – 5.91) for the loans amounting to Ksh.100, 000 for all the periods mentioned above. We can deduce that this is because of the high cost of commercial borrowing. The organization charging the highest interest rate which is 24% is HFCK.

Table G: Interest Rate for Ksh.200,000.

Variable (*000)	Mean	Standard Deviation	Minimum	Maximum
R3Mon200,	6.40	5.91	3.75	24.00
R6Mon200,	11.02	5.13	7.50	24.00
R9Mon200,	15.44	4.33	11.25	24.00
R12Mon200	19.12	4.68	8.00	24.00

Source: Field data 2013

Loans amounting to 200,000 have an average interest rate of 6.40% for 3 months, 11.02% for 6 months, 15.44% for 9 months and 19.12% for one year. The standard deviation is 5.91 for 3 months, 5.13 for 6 months, 4.33 for 9 months and 4.68 for 12 months. The minimum interest rate charged for loans amounting to Ksh. 200,000 are 3.75%, 7.5%, 11.25% and 8% for 3, 6, 9 months and 12 months respectively. The maximum interest rate charged for loans amounting to Ksh. 200,000 are 24%, for 3, 6, 9 months and 12 months. The standard deviation is high (ranging from 4.33 to 5.91) meaning that the dispersion between the interest rate is a bit high. For the same loan amount and duration, some commercial banks charge reasonable rates while others charge very high rates, causing the high dispersion. HFCK still remains the commercial bank that charges the highest interest rate. The mean of 6.40% for 3 months mean that most organizations charge around this amount for Ksh.200,000. For 6 months commercial banks charge around 11.02 (i.e. the mean), 15.44 for 9 months and 19.12 for 12 months.

Table H: Interest Rate for Ksh.300,000.

Variable (*000)	Mean	Standard Deviation	Minimum	Maximum
R3Mon300,	5.41	3.21	3.75	24.00
R6Mon300,	10.37	4.21	7.50	24.00
R9Mon300,	15.01	4.52	11.25	24.00
R12Mo300	18.69	4.78	8.00	24.00

Source: field data 2013

Loans amounting to 300,000 have an average interest rate of 5.41 % for 3 months, 10.37% for 6 months, 15.01% for 9 months and 18.69 for one year. The standard deviation is 3.21 for 3 months, 4.21 for 6 months, 4.52 for 9 months and 4.78 for 12 months. The minimum interest rate charged for loans amounting to Ksh. 300,000 are 3.75%, 7.5%, 11.25% and 8% for 3, 6, 9 months and 12 months respectively. The maximum interest rate charged for loans amounting to Ksh. 300,000 are 16%, 20%, 24% and 24% respectively for 3, 6, 9 months and 12 months.

The standard deviation is generally high (ranging 3.21 – 4.78) for the loans amounting to Ksh.300, 000 for all the periods mentioned above. We can deduce that this is because of the high cost of commercial borrowing.. The organization charging the highest interest rate which is 24% is HFCK.

Table I: Interest Rate for Ksh.400,000.

Variable (*000)	Mean	Standard Deviation	Minimum	Maximum
R3Mon400,	4.57	1.16	4.50	7.50
R6Mon400,	9.49	1.47	7.50	15.00
R9Mon400,	14.03	1.54	11.25	18.00
R12Mo400	17.86	3.30	8.00	24.00

Source: Field data 2013

Loans amounting to 400,000 have an average interest rate of 4.57 % for 3 months, 9.49% for 6 months, 14.03% for 9 months and 17.86% for one year. The standard deviation is 1.16 for 3 months, 1.47 for 6 months, 1.54 for 9 months and 3.30 for 12 months. The minimum interest rate charged for loans amounting to Ksh. 400,000 are 4.5%, 7.5%, 11.25% and 8% for 3, 6, 9 months and 12 months respectively. The maximum interest rate charged for loans amounting to Ksh. 400,000 are 7.5%, 15%, 18% and 24% respectively for 3, 6, 9 months and 12 months.

The standard deviation ranges from 1.2 to 3.3. As the duration increases the level of dispersion from the mean also tends to increase. For the same loan amount and duration, some commercial banks charge reasonable rates while others charge very high rates, causing the high dispersion. The commercial bank that charges the highest interest rate is HFCK. The mean of 4.57 for 3 months means that most organizations charge around this

amount for Ksh.400,000.For 6 months commercial banks charge around 9.49 (i.e. the mean),14.03 for 9 months and 17.86 for 12 months.

Table J: Interest Rate for Ksh.500,000.

Variable (*000)	Mean	Standard Deviation	Minimum	Maximum
R3Mon500,	4.73	0.73	3.75	7.500
R6Mon500,	9.46	1.47	7.50	15.00
R9Mon500,	13.99	1.53	11.25	18.00
R12Mo500	17.82	3.28	8.00	24.00

Source; Field data 2013

Loans amounting to 500,000 have an average interest rate of 4.73 % for 3 months, 9.46% for 6 months, 13.99% for 9 months and 17.82% for one year. The standard deviation is 0.73 for 3 months, 1.47 for 6 months, 1.53 for 9 months and 3.28 for 12 months. The minimum interest rate charged for loans amounting to Ksh. 500,000 are 3.75%, 7.5%, 11.25% and 8% for 3, 6, 9 months and 12 months respectively. The maximum interest rate charged for loans amounting to Ksh. 500,000 are 7.5%, 15%, 18% and 24% respectively for 3, 6, 9 months and 12 months. The standard deviation ranges from 0.73 to 3.28 for the loans amounting to Ksh.500, 000 for all the periods mentioned above. We can deduce that this is because of the high cost of commercial borrowing. The organization charging the highest interest rate which is 24% is still HFCK.

Table K: Significance of Determinants of business collaterals

Variable	Mean	Standard Deviation	Minimum	Maximum
Legal environment (LE)	5.45	0	5.00	5.00
Macroeconomic uncertainty (MU)	5.41	0.2	4.00	5.00
Firm & loan characteristics (FLC)	5.23	0.52	3.00	5.00
Relationship banking (RB)	5.02	0.66	1.00	5.00
Business cycle (BC)	3.80	1.37	1.00	5.00
Family ownership (FO)	3.41	1.43	1.00	5.00
Bank ownership (BO)	3.28	1.61	1.00	5.00

Source: Field data 2013

A five – point Likert scale was used to interpret the respondent extent. According to the scale, factors which were very significant were awarded 5, while those which were not significant at all were awarded 1. Within the continuum are; (4) for highly significant, (3) for moderately significant, and (2) for less significant. The findings therefore show that the legal environment as a determinant is very significant (5.45), and macroeconomic uncertainty (5.41), firm and loan characteristics (5.23) and relationship banking (5.02) are highly significant. Business cycles (3.80) are moderately significant. Family ownership (3.41) and bank ownership (3.28) as determinants of business collaterals are considered to be less significant. According to the findings the legal environment is very significant as a determinant of business collateral. This is because; better legal environment not only fosters a bigger credit market but also shifts the composition of lending towards capital

formation. Business ownership is considered as the least determinant of business collaterals.

Standard deviation shows the level of variation or dispersion among the respondents. According to the findings standard deviation ranges from 0 to 1.61 implying that there is no common agreement in the level of significance of each determinant of business collateral. This is because as much as most commercial banks consider legal environment to be the most significant determinant, others equally consider macroeconomic uncertainty and firm and loan characteristics as being highly significant.

Table L: Analysis of those involved in Deciding what collateral is to be pledged.

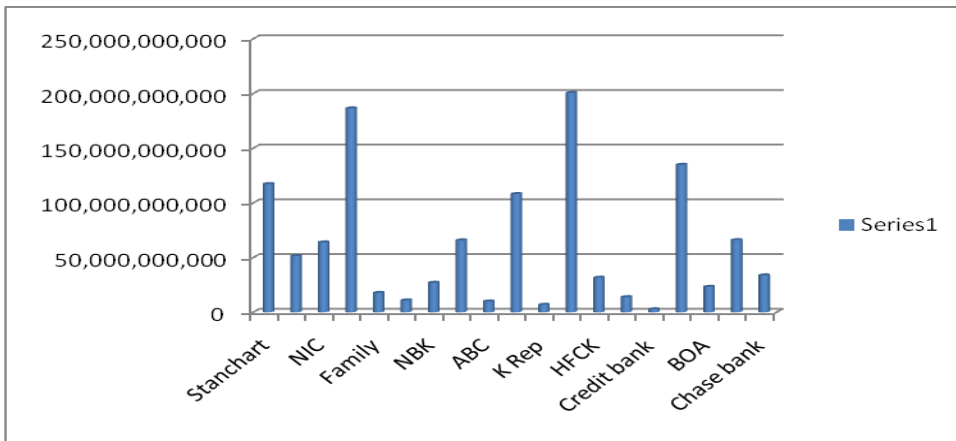
Variable	Mean	Standard Deviation	Minimum	Maximum
Board	0.73	0.45	0.00	1.00
Senior management (SM)	0.57	0.50	0.00	1.00
Branch managers (BM)	0.13	0.35	0.00	1.00
Others (IS)	0.17	0.378	0.00	1.00

Source: Field data 2013

The people involved in deciding on what collateral is to be pledged are mainly the board members with a mean of 0.73 .This is true for most of the commercial banks targeted. The other people concerned with deciding what collateral is to be pledged are senior management with a mean of 0.57, followed by others (not specified) with a mean of 0.17 and finally branch managers who are rarely involved with a mean of 0.13.

4.4 Loan portfolio quality

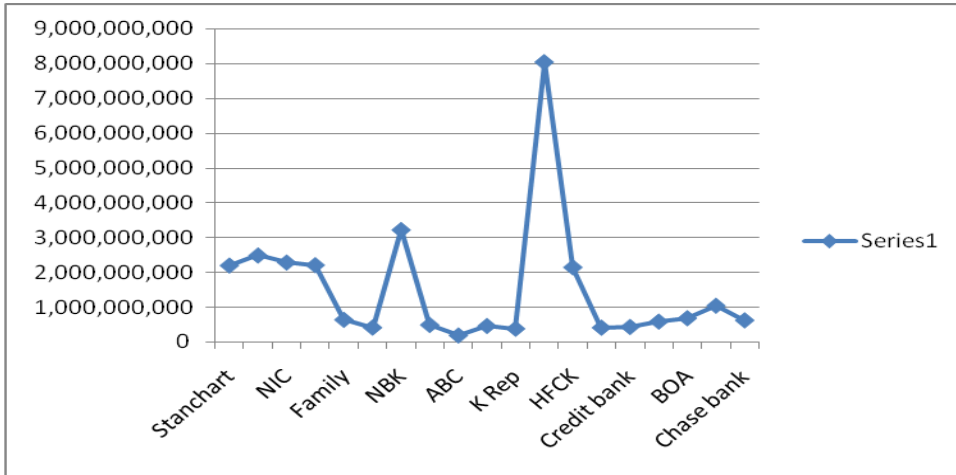
Figure 4.4: Loans and advances nationally



Source; Field data 2013

From the above figure cooperative bank has the highest loan portfolio (Ksh 200,588,000,000) and credit bank has the lowest loan portfolio of Ksh 2,883,261.000 nationally.

Figure 4.5: Non performing loans nationally

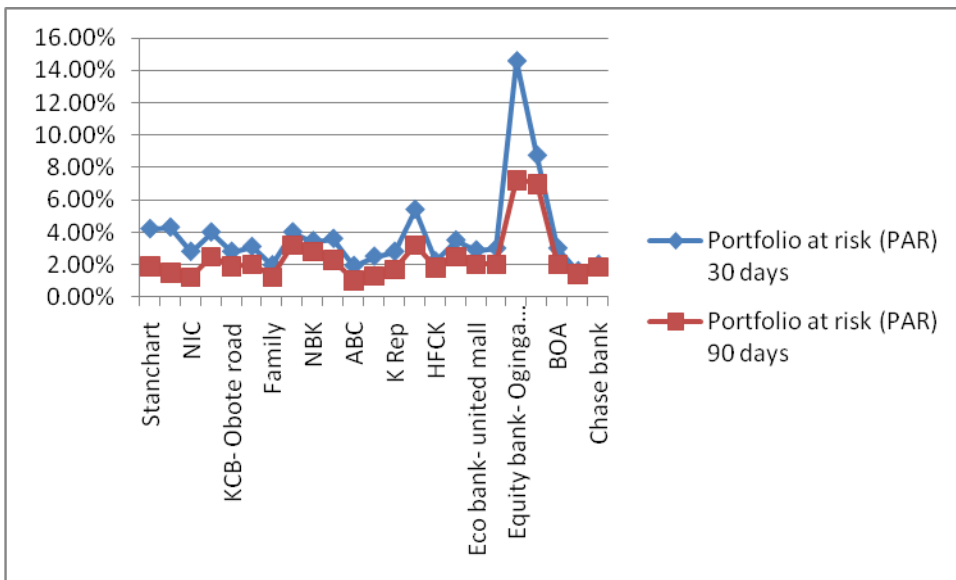


Source: field

data 2013

From the above figure cooperative bank has the highest non performing loan portfolio of Ksh 8,023,520,000 and ABC bank has the lowest non performing loan portfolio of Ksh 195,739.000 nationally.

Figure 4.6: Portfolio at risk for 30 days and 90 days



Source: Field

data 2013

From the figure above Equity bank Oginga Odinga branch has the highest exposure in term of non performing loans with PAR 30days of 14.6% and PAR 90 days of 7.25%. Consequently CFC stanbic has the lowest exposure at 1.6% PAR 30 days and both NIC bank and Familiy bank having there exposures at 1.2% 90 days respectively.

Table M: Significance of Determinants of business collaterals in relation to loan portfolio quality

Variable	Mean	Standard Deviation	Minimum	Maximum
Legal environment (LE)	5.45	0	5.00	5.00
Macroeconomic uncertainty (MU)	5.41	0.2	4.00	5.00
Firm & loan characteristics (FLC)	5.23	0.52	3.00	5.00
Relationship banking (RB)	5.02	0.66	1.00	5.00
Business cycle (BC)	3.80	1.37	1.00	5.00
Family ownership (FO)	3.41	1.43	1.00	5.00
Bank ownership (BO)	3.28	1.61	1.00	5.00

A five – point Likert scale was used to interpret the respondent extent of business determinants in relation to loan portfolio. According to the scale, factors which were very significant were awarded 5, while those which were not significant at all were awarded 1. Within the continuum are; (4) for highly significant, (3) for moderately significant, and (2) for less significant. The findings therefore show that the legal environment as a determinant is very significant (5.45), and macroeconomic uncertainty (5.41), firm and loan characteristics (5.23) and relationship banking (5.02) are highly significant. Business

cycles (3.80) are moderately significant. Family ownership (3.41) and bank ownership (3.28) as determinants of business collaterals are considered to be less significant. The above data gives the same results as the one in table K. This means that as much as the determinants of business collaterals are important for a bank so is the determinants of business collateral on loan portfolio quality. Standard deviation shows the level of variation or dispersion among the respondents. According to the findings standard deviation ranges from 0 to 1.61 implying that there is no common agreement in the level of significance of each determinant of business collateral. This is because as much as most commercial banks consider legal environment to be the most significant determinant, others equally consider macroeconomic uncertainty and firm and loan characteristics as being highly significant.

4.5 Regression Analysis

Table N: Model summary

Model	
R	0.789
R ²	0.889
Adjusted R ²	0.7294
Standard error of the estimate	0.23173

Source: Field data 2013

The adjusted R² is known as coefficient of determination and it shows the variations in relationship between determinants of business collaterals and loan portfolio quality. From

the above table, there was 72.94% variation in determinants of business collaterals and loan portfolio quality.

Table O: ANOVA

Model	Sum of Squares	Df	Mean square	F	Sig.
Regression	24.011	7	3.430	9.737	0.001
Residual	5.989	17	0.352		
Total	30.00	24			

From the table the significance was 0.001 meaning that the model was significant

Table P: Coefficient of results

Variable	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Constant- 1.45					
Legal environment	0.405	5.45	0.405	2.218	0.801
Macroeconomic uncertainty	0.404	5.41	0.404	2.207	0.789
Relationship banking	0.392	5.02	0.392	1.759	0.511
Business cycle	0.059	3.80	0.059	1.236	0.227
Bank ownership	0.023	3.28	0.023	1.088	0.101
Family ownership	0.025	3.41	0.025	1.188	0.292
Firm & loan characteristics	0.405	5.23	0.405	2.218	0.801

Source; Field data 2013

From the above table, it possibly points to the fact that legal environment, microeconomic uncertainty and firm and loan characteristics as determinants of collateral influence the quality of loan portfolio. The coefficient in table... was used to come up with the model below:

$$Y = 1.45 + 0.059X_1 + 0.392X_2 + 0.405X_3 + 0.404X_4 + 0.023X_5 + 0.405X_6 + 0.025X_7 + 0.23$$

Where Y- Loan Portfolio Quality, X_1 - Business cycle, X_2 - Relationship Banking, X_3 - Legal Environment, X_4 - Macroeconomic Conditions, X_5 - Bank Ownership, X_6 - Firm and Loan Characteristics, and X_7 - Family Ownership.

From the above regression equation the determinants would be 1.45. Unit increase in business cycle would lead to an increase in loan portfolio quality by a factor of 0.059, unit increase in relationship banking would lead to an increase loan portfolio quality by a factor of 0,392, unit increase in legal environment would lead to an increase in loan portfolio quality by a factor of 0.405, unit increase in macroeconomic uncertainty would lead to an increase in loan portfolio quality by a factor of 0.404, unit increase in business ownership would lead to an increase loan portfolio quality by a factor of 0,023, unit increase in firm and loan characteristics would lead to an increase in loan portfolio quality by a factor of 0.405, and a unit increase family ownership would lead to an increase in loan portfolio quality by a factor of 0.025.

4.6 Summary

In this chapter, data collected from commercial banks branches within the central business district of Kisumu municipality was analyzed and presented in form of tables

and graphs. The objective of the study was to determine the relationship between determinants of business collaterals and loan portfolio quality. The research design used was descriptive cross sectional survey. The results are consistent with other international studies on determinants of business collaterals on loan portfolio quality, for example legal environment, macroeconomic uncertainty and firm and loan characteristic came out as very significant determinants of business collateral and the same determinants also influenced loan portfolio quality very significantly.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents discussions of the key findings presented in chapter four, conclusion drawn based on such findings and recommendation. The objective of the study was to establish the relationship between determinants of business collaterals and loan portfolio quality of commercial banks. This chapter has three subsections, the first section introduced the summary result of the analysis and conclusion reached, the second section outlines the various limitations or constraints encountered during the study and the third section suggests the gray areas for future studies and recommendations.

5.2 Summary

The main objective of this study was to establish the relationship between determinants of business collaterals and loan portfolio quality using a survey of commercial banks within the central business district in Kisumu Municipality. The research study found out that majority of commercial banks in Kenya have been operating for over 10 years, finding also showed that majority of the commercial banks are privately and publicly owned. The findings indicate that all commercial banks require collateral for any loan to be processed. For loans ranging between ksh 5,000 to ksh 500,000 what is required as security are only chattels. For loans ranging between ksh 500,001 to ksh 1,000,000 a mix of chattels (75%) and formal security (25%) is required. For loans ranging between ksh 1,000,001 to ksh 2,000,000 chattels (50%) and formal security (50%) is required. For

loans ranging ksh 2,000,001 and above chattels (25%) and formal security (75%) is required. Cooperative bank has the highest loan portfolio (Ksh 200,588,000,000) and credit bank has the lowest loan portfolio of Ksh 2,883,261.000 nationally. Cooperative bank has the highest non performing loan portfolio of Ksh 8,023,520,000 and ABC bank has the lowest non performing loan portfolio of Ksh 195,739.000 nationally. Equity bank Oginga Odinga branch has the highest exposure in term of non performing loans with PAR 30days of 14.6% and PAR 90 days of 7.25%. Consequently CFC stanbic has the lowest exposure at 1.6% PAR 30 days and both NIC bank and Familiy bank having there exposures at 1.2% 90 days respectively. On the interest rates charged by commercial banks, results show that commercial banks generally charge high interest rates. According to Rosenberg, Gonzalez, & Narain (2009) over the past two decades, institutions that make loans to borrowers in developing and transition economies have focused increasingly on making their lending operations financially sustainable by charging interest rates that are high enough to cover all their costs. They argue that doing so will best ensure the permanence and expansion of the services they provide. The dispersion between the interest rates is a bit high because some organizations charge excessive interest rates compared to others.

5.3 Conclusion

From the findings, legal environment, microeconomic uncertainty and firm and loan characteristics as determinants of business collateral and loan portfolio quality are very significant. Therefore from the results, these are the major determinants of business collateral and loan portfolio quality. The study also shows that decisions on what

collaterals to be pledged are mainly guided by the board members of the commercial banks.

5.4 Recommendations

From the results obtained it is clear that collateral plays a significant role in the credit provision in Kenya. Legal environment, macroeconomic uncertainty and firm and loan characteristics have come out as the strongest determinants of business collaterals and loan portfolio quality. Land related assets (formal security) are the most utilized as collateral. Land system in Kenya has its unique challenges, making clearing of the said asset quite slow and costly. For example to create and perfect a building in the capital city of Nairobi as a collateral for a loan of ksh. 10,000,000, it will cost a total ksh. 577,995 or 5.78% of the loan amount and sixty working days (FSD-Kenya, 2009). This in turn erodes the value of the loan advanced against such collateral because lenders transfer all the related financial and time costs to borrowers. As such the regulatory authority (CBK) and other stake holders should create an enabling environment that removes all these inefficiencies to the policy concern of high cost of credit. The legal and regulatory environment should be more efficient and robust to serve as a major strategy for mitigating credit default rate and this will assist commercial banks reduce on non performing loans.

5.5 Limitations of the Study

This study like any other study is bound to have limitations. Some of the respondents did not return the questionnaires even after follow ups were done. Thirty questionnaires were issued but only twenty three were returned. Another limitation encountered during the study was that the literature review section heavily relied on research conducted in the developed economies. There was difficulty in accessing the respondents due to their busy schedules and getting information, which they felt, was confidential. In addition to this the responses were based on the judgment of the interviewees and this could be subjective.

5.6 Suggestions for further Studies

Future studies should attempt to explore how business collaterals can impact on commercial banks profitability. The study was only restricted to commercial banks in Kenya. There are other organizations like manufacturing companies that also give out credit facilities. The researcher recommends a further study that will capture organizations that are not commercial banks.

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APPENDICES

Appendix I: Questionnaire

Section A: General Questions.

1. Name of the financial institution.....
2. Type of Institution in terms of listing at the NSE (Tick as appropriate)
 - Listed []
 - Not Listed []
3. Year of establishment.....
4. Position of the respondent in the organization.....
5. How long has your organization been in existence in Kenya?
 - 1 – 5 years []
 - 5 - 10 years []
 - Over 10 years []
6. Ownership (kindly tick one below):
 - Government – related []
 - Privately owned []
 - Publicly/Locally owned []
 - Cooperatively owned []
 - Individuals []
 - Foreign Owned []

Section B: Determinants of business collaterals

7. Are there times you give out loans without a customer pledging any security? (Tick where applicable).

- Yes []
- No []

Give reason for your Yes or No answer.....

8. What interest rates do you charge for the loan amounts listed below (%)?

Amount	Interest Rates in (%)				
	3 Months	6 Months	9 Months	1 Year	Over 1yr
▪ Kshs. 10,000	[]	[]	[]	[]	[]
▪ Kshs. 50,000	[]	[]	[]	[]	[]
▪ Kshs. 100,000	[]	[]	[]	[]	[]
▪ Kshs. 200,000	[]	[]	[]	[]	[]
▪ Kshs. 300,000	[]	[]	[]	[]	[]
▪ Kshs. 400,000	[]	[]	[]	[]	[]
▪ Kshs. 500,000	[]	[]	[]	[]	[]
▪ Over Kshs. 1M	[]	[]	[]	[]	[]

9. What do you ask for as collateral when giving out the following amounts as loans?

Amount
▪ Kshs. 10,000

- Kshs. 50,000.....
- Kshs. 100,000.....
- Kshs. 200,000
- Kshs. 300,000.....
- Kshs. 400,000.....
- Kshs. 500,000.....
- Above Kshs. 1M.....

10. Please rate in terms of significance the following determinants of business collaterals for the bank .5-very significant, 4- highly significant, 3- moderately significant, 2-less significant, 1-not significant at all.

	5	4	3	2	1
▪ Legal Environment	[]	[]	[]	[]	[]
▪ Macroeconomic uncertainty	[]	[]	[]	[]	[]
▪ Relationship Banking	[]	[]	[]	[]	[]
▪ Business Cycle	[]	[]	[]	[]	[]
▪ Bank Ownership	[]	[]	[]	[]	[]
▪ Family Ownership	[]	[]	[]	[]	[]
▪ Firm & Loan characteristics	[]	[]	[]	[]	[]

11. Who is involved in deciding on what collateral is to be pledged by the customer?

- Board []
- Senior management []

- Branch managers []
- Others (kindly specify) []

Section C: Loan Portfolio Quality

12. What is your loan outstanding portfolio as:

- a) As a bank?.....
- b) As a branch?.....

13. What is your PAR;

- a) 30 days.....
- b) 90 days.....

14. What is your outstanding non performing loans as:

- a) As a bank?.....
- b) As a branch?.....

15. Please rate in terms of significance the following determinants of business collaterals for the bank in relation to loan portfolio quality .5-very significant, 4- highly significant, 3- moderately significant, 2-less significant, 1-not significant at all.

	5	4	3	2	1
▪ Legal Environment	[]	[]	[]	[]	[]
▪ Macroeconomic uncertainty	[]	[]	[]	[]	[]
▪ Relationship Banking	[]	[]	[]	[]	[]
▪ Business Cycle	[]	[]	[]	[]	[]
▪ Bank Ownership	[]	[]	[]	[]	[]

▪ Family Ownership [] [] [] [] []

▪ Firm & Loan characteristics [] [] [] [] []

16. Do you have any other information that you feel may be of importance to this study?

.....
.....
.....
.....
.....

Appendix II: Letter of Introduction

Dear Respondent,

This questionnaire is designed to gather information on “Determinants of business collaterals on Loan Portfolio Quality: A survey of Commercial banks in Kisumu County”. This study is being carried out for a project proposal paper in partial fulfillment of requirements of the award of Master of Business Administration, School of Business, University of Nairobi.

The information in the questionnaire will be treated with confidentiality and in no instance will your name be mentioned in this research. The information provided will not be used for any other purpose other than for this research.

Your assistance in facilitating the same will be highly appreciated.

Thank you in advance.

Yours sincerely

.....
.....

MBA Student

Supervisor

Nixon Omoro

Appendix III: List of commercial banks branches in Kisumu municipality within the CBD

1.	African Banking Corporation	16.	Family Bank
2.	Bank of Africa	17.	Fina Bank
3.	Bank of Baroda	18.	Giro Bank
4.	Barclays Bank of Kenya	19.	Guardian Bank
5.	CFC Stanbic	20.	Housing Finance Corporation of Kenya
6.	Chase	21.	I & M Bank
7.	Commercial Bank of Africa	22.	Jamii Bora Bank
8.	Co-operative Bank- Oginga Odinga Street	23.	Kenya Commercial Bank- Obote road
9.	Credit Bank	24.	Kenya Commercial Bank- Oginga Odinga Street
10.	Diamond Trust Bank	25.	Kenya Commercial Bank- United Mall
11.	Eco Bank- Oginga Odinga Street	26.	K-rep Bank
12.	Eco Bank- United Mall	27.	National Bank of Kenya
13.	Equity Bank- Oginga Odinga Street	28.	NIC Bank
14.	Equity Bank- Ang'awa Street	29.	Prime Bank
15.	First Community Bank	30.	Standard Chartered Bank

Source: (Karumba and Wafula 2012)