STRATEGIC MODELS TO COUNTER LOAN DEFAULT: A CASE STUDY OF FAULU MICROFINANCE BANK LTD.

BY

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UNITED STATES INTERNATIONAL UNIVERSITY-AFRICA

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A Report Project Report Submitted to the Chandaria School of Business in Partial Fulfillment of the Requirements for the Degree of Masters in Business Administration (MBA)

UNITED STATES INTERNATIONAL UNIVERSITY-AFRICA

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STUDENT’S DECLARATION

I, the undersigned declare that this is my original work and has not been submitted to any other college, institutions or university other than the United States International University in Nairobi for academic purposes and any resemblance is purely coincidental.

Signed: ____________________________ Date: ____________________________

Rita Gichema (ID 650538)

This thesis has been presented for examination with my approval as appointed supervisor

Signed: ____________________________ Date: ____________________________

Professor Amos Njuguna

Signed: ____________________________ Date: ____________________________

Dean, Chandaria School of Business
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ABSTRACT

The purpose of the study was to evaluate strategic models to counter loan default at Faulu Microfinance Bank Ltd. The study was guided by the following research questions: What models are available for accessing microfinance? What is the potential of the models in reducing defaults? Is there any improvement needed for the models to counter loan defaults?

This study used a descriptive research design. It was carried out in Faulu Microfinance, Head Quarters in Nairobi, Kenya. Questionnaires were given to Credit Control and financial experts for qualitative information. From the 40 questionnaires given only 30 responded resulting into a response rate of 75%. The collected data was cleaned for data irregularities, and the clean data analyzed using Statistical Package for Social Sciences (SPSS).

Analysis of group lending revealed that self-selected groups have slightly higher willingness to repay. Analysis of group lending reducing defaults revealed individuals are penalized if fellow group members fail to repay. Group meetings have facilitated education and training of clients. Analysis of individual lending indicates that it was considered important that guarantor exerts sufficient social pressure on the client to repay.

Analysis of relationship lending revealed that education level was not important in determining loan repayment. It was also revealed that loan repayment does not vary across gender and most findings revealed that most banks found it not important to use stress testing to determine loan risk management. Analysis of relationship lending reducing defaults revealed uncertainty of banks conveying private information to their retail investors to ensure greater demand for loans. Majority revealed that it was important for the retail customers who have a relationship with their savings bank have to have low default rate.

To determine improvements made in credit management of small businesses revealed uncertainty of the bank in monitoring loans through site visits and provide clients with incentives for timely repayment, it was however revealed that it was important for the bank to maintain close relationships with its clients thus enable banks to assess financial and credit risks crisis. It was also not clear if the bank profile and evaluates risks according to the customers’ age. Profile likelihood of default by sex of the customer was also not considered.
to be important. Respondents revealed that it was of importance to partake adequate monitoring of loans and they have put up, measures to mitigate loan default from high business failure.

It was concluded that Group lending models has been applied in the banking industry and self-selected groups have slightly higher willingness to repay. Despite this, education level is not considered in determining loan repayment. Analysis of group lending reducing defaults revealed that there exist penalties when fellow group members fail to repay. Group meetings have facilitated education and training of clients and this has helped in mitigating the risks associated with information asymmetry. It is important for the bank to maintain close relationships with its clients thus enable banks to assess financial and credit risks crisis. To check progress, the firms need to partake adequate monitoring of loans and they have put up, measures to mitigate loan default from high business failure.

The study recommended that banks need to assess groups in order to benefit from self-selected groups which have been found to have slightly higher willingness to repay. Group members should be encouraged to undertake more vetting of the individual in the group, this is because in case of defaults there is a penalty if fellow group members fail to repay. It is important for the bank to maintain close relationships with its clients thus enable banks to assess financial and credit risks crisis on a regular basis.

This study needs to be replicated in other micro financiers in order to establish what strategic models are available for accessing microfinance, what potential of the models in reduce defaults or any other improvement needed for the models to counter loan defaults. The study also suggests that another study be done in the banking industry in Kenya as a whole but by employing a different model and approach in order to test the determinants of loan defaults in the sector.
AKNOWLEDGEMENT

I would like to appreciate sincerely to all who have contributed in the undertaking of my project with intellectual support from Prof. Amos Njuguna, moral support from my family the Gichema’s, my husband Gathii and friends. Above all I thank the Almighty for the strength good health and giving me the ability and opportunity to do my project. I also want to thank Prof. Mutahi, my employer for giving me flexible hours during my studies and approving part financial sponsorship by The Eastern Africa Resilience Hub.
DEDICATION

Dedicated to my father Gichema, mother Agnes, brother Raymond and sister Stella for the continued support throughout my life and studies. I also dedicate this to my husband Gathii who has supported me as I advance my career as we start a new beginning together.
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# ABBREVIATIONS AND ACRONYMS

<table>
<thead>
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<th>Abbreviation</th>
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<tr>
<td>CBK</td>
<td>Central Bank of Kenya</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>MSMEs</td>
<td>Micro, Small and Medium Enterprises</td>
</tr>
<tr>
<td>SACCOs</td>
<td>Savings and Credit Cooperative Societies</td>
</tr>
<tr>
<td>SAT</td>
<td>Sinapi Aba Trust</td>
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<tr>
<td>SMEs</td>
<td>Small and Medium Enterprises</td>
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<tr>
<td>UK</td>
<td>United Kingdom</td>
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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Loan delinquency has been advanced as one of the major causes of economic stagnation in an economy as it is viewed as a mirror image of an ailing unprofitable enterprise. From this view reducing loan default is a necessary condition for improvement of economic status of a nation (Omitogun, Olanrewaju, & Alalade, 2016). Nonperforming loans are mainly caused by an inevitable number of wrong economic decisions by individuals and plain bad luck (inclement weather, unexpected price changes for certain products, etc. (Bloem & Gorter, 2001). Loan repayment and recovery of bad debts among small businesses has been observed as a worrying trend as the provision amount is growing for most financial institutions in Kenya (Ochieng, 2015).

It may be difficult to establish an optimal credit policy as the best combination of the variables that influence credit policy may be difficult to obtain. Firms will change one or two variables at a time and observe the effect. It should be noted that the firm’s credit policy is greatly influenced by economic conditions (Pandey, 2008). As economic conditions change, the credit policy of the firm may also change. Microfinance Institutions and other finance institutions must develop a credit policy to govern their credit management operations (Pandey, 2008) and since microfinance institutions generate their revenue from credit extended to low income individuals in the form of interest charged on the funds granted (Central Bank Annual Report, 2010) the loan repayments may be uncertain.

The success of lending out credit depends on the methodology applied to evaluate and award the credit (Ditcher, 2003) and therefore the credit decision should be based on a thorough evaluation of the risk conditions of the lending and the characteristics of the borrower. Numerous approaches have been developed in client appraisal process by financial institutions. They range from relatively simple methods, such as the use of subjective or informal approaches, to fairly complex ones, such as the use of computerized simulation models (Horne, 2007). Many lending decisions by Microfinance institutions are frequently based on their subjective feelings about the risk in relation to expected repayment by the
borrower. According to World Bank (2012) microfinance institutions commonly use this approach because it is both simple and inexpensive. While each company would have its own method of determining risk and quality of its clients, depending on the target group.

Across many developed nations, there has been an increased use of asset-based financing as a way of raising funds for SMEs. In Europe specifically, the prevalence of these instruments for SMEs is on par with conventional bank lending, and the financial segment has grown steadily over the last decade, in spite of repercussions of the global financial crisis on the supply side. Through asset-based financing, firms are able to obtain funding based on the value of specific assets rather than their credit standing. As such, it serves the needs of young and small firms that have difficulties in accessing traditional lending (Dean & Jonathan, 2010).

Other firms have utilized group lending which primarily involves a group of individuals, which becomes the basic unit of operation for MFIs. The group approach delegates the entire financial process to the group rather than to the financial institutions. All financial activities like savings, getting loans, repayment of loans and record keeping are managed at the group level (Priyadesh, 2010). In this case the amount of loan issued depends upon the total accumulated saving of the group. Kuntchev, Ramalho, Rodriguez-Meza and Yang (2013) added that for accountability the loans are granted to selected member(s) of the group first before the other members are offered. Most MFIs require a percentage of the loan that is supposed to be saved in advance and members decide the criteria of dividing the loan among the group members. Group members are jointly accountable for the repayment of the loans as such peer pressure and joint liability become the critical success factors. Failure to which an entire group is disqualified and will not be eligible for further loans. The creditworthiness is therefore determined by the members rather than by the MFI (IFC, 2010).

Another model that has been previously applied includes the Community Banking model which essentially treats the whole community as one unit, by the establishment of semi-formal or formal institutions through which microfinance is dispensed. Such institutions are formed by extensive help from NGOs and other related organizations, who offer training to the community members in various financial activities. Although despite such models being put in place the default rates are on the rise (Dethier, Hirn, & Straub, 2011).
In India, microfinance services are provided with different methods via 14 existing models which include associations, bank guarantees, community banking, cooperatives, credit unions, Grameen, group, individual, intermediaries, NGOs, peer pressure, ROSCAs, small business, and village banking models. Although in reality, the said models are related to each other, and most good and sustainable microfinance institutions have features of two or more models in their activities (Dinh, Mavridis, & Nguyen, 2012). The Microfinance lending models vary in their legal forms, in the channels and methods of delivery, in their governance structure, in their approach to sustainability and also in their approach to microfinance where their funds are sourced from, and how the money is governed.

The probability that financial institutions may not receive their money back from borrowers (plus interest) is the most common and often their most serious vulnerability (Warue, 2012). The constant problem of loan default comes to fore where loan delinquency among banks and MFI’s has been identified as a one of the reasons why commercial banks have little interest in financing Micro, Small and Medium Enterprises (MSMEs) (Addae-korankye, 2014). As stated by Shojai and Feiger (2009) failure to mitigate loan default is a problem as witnessed in the 2007 financial crises which was linked to inappropriate due diligence of mortgage borrowers by financial institutions and the over securitization of such loans by transferring ownership to those mortgaged loans to other investor companies without proper vetting. In order to make sound credit decisions, every creditor must have suitable instruments at their disposal. As such, credit risk models which make use of the clients’ historical financial information are fairly useful.

Another model used is relationship lending. Relationship lending is where a bank gathers information on their client and bases their onward lending of the loan from their findings. According to Bolton, Freixas, Gambacorta & Mistrulli (2013), relationship banking is an important mitigation factor of crisis as it helps profitable firms retain access to credit in times of crisis and this dampens the effect of credit crunch. Though relationship lending has higher cost as compared to transactional lending, the firms are able to access continuation-lending at more favorable terms than transaction banks (Bolton et al., 2013). According to Berlin & Mester (1995) continuing relationships have been associated with less stringent collateral requirements, lower loan rates and a less likelihood of credit rationing.
According to Evusa, Mudaki, & Ojala, (2015), there are two types of default: debt services default and technical default. Debt service default occurs when the borrower has not made a scheduled payment of interest or principal. Technical default occurs when an affirmative or a negative covenant is violated. Affirmative covenants are clauses in debt contracts that require firms to maintain certain levels of capital or financial ratios (Evusa et al., 2015). Access to credit for any enterprise is a contributing factor of the growth and expansion of the business. Loan default is a significant impediment to this access, as the financial institutions implement policies to reduce the loan default risk which is often unfavorable for the small and medium size enterprises. The increased probability of loan delinquency spreading from a handful of loans to a significant portion of the portfolio since most microloans are unsecured (Warue, 2012), prompts the financial institutions in their vigilance to reduce the rate of default. This has further been advanced through the strive to achieve the international accepted standard of portfolio risk of 3% (Addae-korankye, 2014).

According to Asantey and Tengey (2014) they listed 14 loan default determinants from the 17 determinants they studied. These include education, years of experience, number of dependents, availability of other income sources, business size, types of products/services, loan size, credit analysis, appropriateness of interest rate, length of time within which the loan was disbursed, inflation, regulation, exchange rate and political instability. (Hwarire, 2012) also analyzed “age, bank balance, relationships (personal, business and new customer), interest rate, loan size, loan term, product type, gender and race to determine their relationship and impact on default. Financial institutions are also known for their hidden charges and fees which accumulate over time that has also contributed to loan default in the long run.

From a study done in Ghana of 25 MFIs, 60% have their default rates more than the internationally acceptable rate of 3% (Addae-korankye, 2014). In Tanzania, study on loan default recovery found out that about 17%, of MFIs clients recovered their loans through selling of their pre-existing properties, 60% by duress and 4% confiscation of peers’ properties respectively (Magali, 2013). The highest percentage shows that the recovery was by duress which means that the loan left the client worse off from the intended purpose economically. The need to reduce the loan delinquency has led to development various
credit rating models to improve assessing credit worthiness during the credit evaluation process (Paddy, 2012). A well-known credit rating model is classification using the 5 C's of good credit: character, capital, capacity, conditions and collateral (Kabir, Jahan, Chisty, & Hasin, 2010). About 49% of Ghana’s GDP in 2012 was generated from SMEs and they therefore have an impact on economic growth, income and employment (Price waterhouse Coopers, 2013). Additionally, the SMEs’ contribution to the gross domestic product of Uganda, Kenya and Nigeria is 20%, 19.5% and 24.5% respectively (Nahamya et al., 2013).

Kenya’s move to make finance more accessible and transparent led to the implementation of Banking Act 2016 that mandates the disclosure of all charges and terms relating to loan prior to granting the loan. The Act also capped interest rates to 4% above the Central Bank Rate (Republic of Kenya, 2016). CRB was also introduced that has helped reduce loan default in financial institutions (Kwambai & Wandera, 2013). Many of the SME businesses can rarely meet the borrowing conditions set by commercial banks, which see SMEs as a high risk. As a result, fewer than 20% of small to medium enterprises in Kenya have ever received credit from formal financial institutions (Financial Sector Deeping, 2010). Micro enterprises are constrained by limited access to credit, basic infrastructure issues and organizational problems (Nduba, 2010). This has led to high turnover of small enterprises where 2.2 million small enterprises closed shop in the last five years (business daily, 2017).

It was recent national survey on the sector carried out in 1999 estimated that SMEs accounted for 75 per cent of total employment in Kenya but contributed only 18 per cent of GDP (Kenya Institute for Public Policy Research and Analysis, 2013). A study done by Central Bank of Kenya and World Bank in 2015 shows that SME lending portfolio in December 2013 was estimated to be Ksh 332 billion which is 23.4% of commercial banks’ loan portfolio. This was an increase from an estimated Ksh 133 billion and Ksh 225 billion in 2009 and 2011 respectively representing a 19.5% and 20.9% of total lending portfolio of commercial banks (Central Bank of Kenya, World Bank, & FSD Kenya, 2015). SMEs play a key role in economic diversification and employment creation that contributes an average of 49% of GDP in high income countries and 29% in low income countries (Ayyagari et al., 2007).
1.2 Research Problem

Lending is a risky enterprise because repayment of loans can seldom be fully guaranteed. The capability of borrowers to repay their microcredit loans is an important issue that needs attention. Borrowers can either repay their loan or choose to default. Borrower defaults may be voluntary or involuntary. According to Brehanu and Fufa (2008) involuntary defaults of borrowed funds could be caused by unexpected circumstances occurring in the borrower’s business that affect their ability to repay the loan.

Across developing countries, micro, small and medium enterprises are turning to microfinance institutions (MFIs) for an array of financial services, the most common being microcredit (Helmes, 2006). This is because microcredit is acknowledged as one of the prime strategies to achieve the 1st and 3rd millennium development goals, namely eradication of extreme poverty and hunger and promotion of gender equality and empowering women. The MFIs employ group lending mechanism to meet the demands of these entrepreneurs.

The emergence of innovative group lending models in the field of microfinance is notable as a contractual innovation that has achieved the perceptible miracle of enabling previously unbankable or marginalized borrowers to lift themselves up by their own bootstraps by creating “social collateral” to replace the missing physical collateral that excluded them from access to more traditional forms of financial services, like credit, savings, and so on (Conning, 2000).

The success of the microfinance industry is largely attributable to product simplicity, standardization, and the capacity to stimulate clients’ payment discipline (Armendariz and Morduch, 2010). The most widespread product, microcredit, has standardized features: short-term duration, small weekly installments starting right after loan disbursement, compulsory savings, progressive lending, and zero tolerance policy toward default. These features are indeed efficient for enhancing clients’ discipline.

In Kenya several studies have been conducted on loan delinquency where some look at elements of loan delinquency and others are specific on sample size e.g. a county, financial institution. Karani (2012) conducted on factors that influence loan default by SMEs owners a case study of Thika town where the researcher recommends further studies in other
Mugambi (2010)’s research was on the factors influencing loan defaults of small micro-enterprises financed by Co-op Bank. Muguchu (2013) performed a study to determine the effect of access to credit and financial performance of small and medium enterprises in Nairobi while Ochieng (2015) conducted a study to determine how modeling relationship impact loan default among small, micro and medium enterprises where the researcher concentrated on default in commercial banks.

Despite the listed studies, none has been done to establish how the various models used in loan allocation impact the rate of loan defaults towards micro finance institutions and it’s therefore on this benchmark that this study seeks to look at this gap and to evaluate models of accessing micro finance used to counter loan default. This study will also look at the potential of the models to reduce default and improvements needed for the models.

1.3 Purpose of the study
The purpose of the study is to evaluate strategic models to counter loan default at Faulu Microfinance Bank Ltd.

1.4 Research questions
1.4.1 What models are available for accessing microfinance?
1.4.2 What is the potential of the models in reduce defaults?
1.4.3 Is there any improvement needed for the models to counter loan defaults?

1.5 Importance of the Study
1.5.1 Policy makers
The findings of the study are helpful to the policy makers as it narrows down the various credit models used. This then helps them formulate policies and initiatives that are specific to the reduction of loan default and will help drive interventions to improve the decision making of MFI’s.
1.5.2 Practice
The study will be valuable to MFI’s as it assist’s them understand the contribution of the various models to loan default. This then helps them make decision from an informed point of view as they approve loans. It will also help them identify the mix of credit models that work so as to ensure more frequent repayments and increased liquidity for onward lending.

1.5.3 Academic and Researchers
This study can be used as a reference for future studies related to credit models and loan delinquency. As credit model contribution to loan default studies has not been sufficiently covered, this study will contribute to the researchers who seek to conduct researches on areas that have not been examined.

1.6 Scope of the study
In this study the data was collected from Faulu Bank Ltd on models used. Wecollected data from loan officers from the Faulu Bank Ltd Head office in 2018.Limitations of this study included quality of the response, willingness of the respondents to respond, as well as low response rate, however, this was mitigated through assurance to the management that the information offered is treated as private and confidential and was meant for the study alone.

1.7 Definition of Terms
1.7.1 Loan delinquency/default
Loan delinquency/default is the inability of the borrower to meet the repayment obligation within the repayment period (Bloem & Gorter, 2001).

1.7.2 Model
A model according to the business dictionary is a “graphical, mathematical, physical or verbal representation or simplified version of a concept, phenomenon, relationship, structure, system or an aspect of the real world.” It further states that the objectives of a model is to facilitate understanding, to aid in decision making and explain, control and predict events based on past observations(Bloem & Gorter, 2001).
1.8 Chapter Summary

This chapter highlights the overall research objective which is to determine credit models used to counter loan default. It further gives three research questions on the models used when giving loans that have attributed to loan default. It also highlights the significance of the study, the scope and finally defined the frequent terms used.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter seeks to review related studies done by scholars, experts, analysts and authors on the models used to access micro financing to counter loan delinquency. The main primary sources of literature review are thesis and reports while journal articles will be the main secondary source of literature review.

2.2 Models Available for Accessing Microfinance

2.2.1 Group lending Model

Today, MFI’s lending to groups has group sizes that range from 5 to 50 members. Abbink et al., (2002) have investigated the importance of group sizes for the repayment performance, with the help of a game theoretical model. Their findings suggest that both smaller and larger groups have good repayment performance. Large groups have slightly less solidarity than smaller groups but this is compensated by a large distribution of risk (Abbink et al., 2012).

The theoretical literature on group lending is quite substantial and there are a growing number of empirical papers on this topic as well. Credit rationing and collateral requirements are primarily responsible for the exclusion of poor borrowers from the credit market. As shown in the seminal paper by Carpenter and Peterson (2002), liberalizing interest rates, or using collateral requirements to loosen credit rationing results in adverse selection and moral hazard problems. Todaro et al., (2013) show how group lending can take advantage of the “inside” information that only borrowers have about each other to draw in relatively safer borrowers and thus mitigate the adverse selection problem. Khandler (2003) analyzes how borrowers mutually monitor each others' projects to ensure the success of financed projects and shows that group lending, via monitoring, alleviates the moral hazard issues involved in lending to those with no collateral.

Khandler (2012) show that the burden of the moral hazard problem between borrowers and the lender falls on the monitoring members who are responsible for repaying the defaulting
member's loan. They show that at an increasing effort cost, the monitor can impose higher penalties on a defaulting borrower. To avoid these penalties the borrower will choose a safer project equalizing the marginal costs of increased monitoring (higher effort) with its increased benefits (safer project). Another set of theoretical papers focuses on strategic default by group members. Savita (2007) focus on group lending under limited contract enforcement and the threat of official (seizure of assets) and unofficial penalties (social sanctions). This strand of the literature argues that without the threat of social sanctions group lending may add little if any superiority over individual lending.

A recent survey by Giné and Karlan (2010), discusses the potential weaknesses of many of the earlier empirical studies. First, in most of the studies the link between theory and empirics is rather implicit. They find that the joint liability payment amount has a negative effect on repayment rate. This finding supports the fact that higher joint liability under ceteris paribus conditions acts as an additional tax on success, as only the successful borrowers pay it.

Giné and Karlan (2010) also established that Education, a measure of productivity, improves repayment performance. They do not find screening to be a significant determinant of repayment. The authors find that the covariance of output is a significant predictor of good repayment which weakly favors the Stiglitz and Ghatak models. The monitoring variables show mixed results. The higher the percentage of group members living in the same village, the better their repayment performance while the opposite is true when the group has a higher percentage of relatives. Default penalties show positive and significant effect on repayment which are in line with the BC model's predictions. Outside credit options are negatively and significantly associated with repayment performance(Khandler, 2012).

The avalanche of studies on group lending is indicative of its popularity in the intellectual community. Results from a study conducted by Shu-Teng et al., (2015) show that through peer monitoring, the threat of group expulsion, and the safety net of intragroup credit insurance, group lending reduces some risky investment behavior that would otherwise occur under an individual borrowing contract. The credible threat of social sanctions against group members who misallocate borrowed capital further reduces instances of such behavior. Malhotra et al, (2006) shows that by lending to self-selected groups of borrowers and making
them jointly liable for each other’s loan repayment, a lender can achieve high repayment rates even when these borrowers cannot offer any collateral. Using empirical results from first-hand field research on Guatemalan borrowing groups, Bbink, Irlenbusch, and Renner (2006) develop a simple game-theoretic model of group lending. They investigate group size and social ties effects and observe robust high repayment rates. They conclude that group lending outshines individual lending. Self-selected groups exhibit high but less stable contributions.

According to Mpogole, Mwaungulu, and Mlasu (2012), the ability it provides for an institution to reduce asymmetric information problems in credit markets accounts for the success of group lending in developing countries. In his study, Wydick reports empirical tests on borrowing group data from Guatemala that indicate that peer monitoring significantly affects borrowing group performance by stimulating intragroup insurance. He finds group pressure to have a small effect in dissuading moral hazard, while the effect of social ties among members is statistically insignificant. Armendáriz and Morduch (2000) argues that group lending provides a possible means to relax rationing and improve efficiency when physical collateral is not available. He analyzes optimal size of groups as a function of social factors. He discovers that groups can be neither too small nor too large because in both cases the effectiveness of social sanctions on behavior is too low to counteract the negative effect on effort caused by profit sharing and free riding. Among his findings, Impavido notes that individual sensitivity to social sanctions is a crucial element in determining whether groups are formed.

2.2.2 Relationship Lending Model

The relationship-lending model is based on qualitative information with an emphasis on the character and reliability of business owners gathered from informal sources such as suppliers and community leaders (Malhotra et al., 2006). This is different from transactions lending approach which is based primarily on hard quantitative data that can be observed and verified at the time of credit origination like: financial ratios calculated from audited financial statements, credit scores assembled from data provided by credit bureaus, or valuation of hard collateral hence relationship lending plays a vital role in lending.
The most commonly applied proxies for relationship lending are the duration of a bank–borrower relationship, the exclusivity of a bank relationship, the number of banks, the scope of the relationship, the geographical distance between the bank and the firm, and social interaction measures (Behr et al., 2011). The empirical is however mixed evidence is mixed, with some studies finding a positive association between relationships lending and loan contract terms, and others finding the opposite or no correlation between the two phenomena. Consequently, it is not clear which proxies should be used for relationship lending. Yet, it seems important to understand when a bank will engage in relationship lending, and which borrowers choose to have a relationship lender. This has raised a host of interesting theoretical and empirical questions, the exploration of which has begun to shape the modern literature on relationship banking (Shu-Teng et al., 2015).

Banking relationships reduce the information asymmetries between borrowers and lenders and thus ameliorate credit rationing that can occur due to these frictions. The longer the relationship, the greater the ability of the lender to accumulate information capital about the borrower (Intrater, 2002). Longer relationships may also signal a long-term implicit contract between the bank and the borrower, in which the banks provide liquidity insurance. This measure has been commonly used in the literature to capture how relationships affect credit supply (Mpogole, Mwaungulu, & Mlasu, 2012). The empirical evidence on the effects of the length of credit relationships is rich. Longer relationships seem to improve firms’ access to credit not only in normal times but also during a crisis period (Asantey & Tengey, 2014).

However, their effects on the cost of credit are mixed. Morduch (2009) and Rosenzweig & Wolpin (2008), find that relationship banks charge a lower interest rate than transactional banks, while Giné and Karlan (2010) show that interest rates increase with the duration of the relationship. de Mel, McKenzie, and Woodru (2008), focus on crisis times and find that borrowers with longer relationships pay lower interest rates after the Lehman shock.

2.2.3 Individual Lending Model

Under individual lending, loan officers bear principle responsibility for loan decisions; they screen, and monitor their clients as well as come up with mechanisms of enforcing repayment. Individual lending programs use a variety of incentives such as collateral
requirements, co-signers and guarantors to promote repayment and repayment discipline is created by strict enforcement of contracts.

Individual lending programs also present several benefits. For instance, Armendáriz and Morduch (2000) find that the guarantor exerts sufficient social pressure on the client to repay MFI loans in Russia and Eastern Europe. However, Laure and Baptiste (2007) argue that the guarantee mechanism, especially personal guarantees, is only meaningful if the borrower has assets that can be pledged as surety, if the institutional framework permits the actual transfer of ownership of the pledge from the borrower to the creditor easily and if the pledged assets are not very liquid. The duo contends that these three conditions are not met in many developing countries. In particular, Kenya has a rigid judicial system with a large number of pending cases which may hinder timely transfer of pledge and most MFI borrowers may not even have “that small collateral” (Maria, 2009). Another benefit of individual lending is that it spares borrowers the negative effects such as time spent in group meetings and loss of privacy when they discuss their financial situation and investment projects with the peers who could oppose such projects in the process impeding their individual growth (Giné & Karlan, 2010).

Microfinance lenders vet individual borrowers more heavily than group borrowers and this is a pointer to the fact that individual borrowers are generally regarded to be of higher risk than group borrowers. In both cases, however, the finding that extreme importance is attached to this factor appears to suggest that MFIs would be hesitant to extend huge amounts of credit to their borrowers in general (Armendáriz & Morduch, 2000). The age of loan applicant is also generally regarded as a key variable in the screening exercise (Laure & Baptiste, 2007). Because of their higher default probabilities, individual borrowers are generally charged a higher default premium. Thus, MFIs place extreme importance on individual borrowers’ ability to pay interest rate. From another perspective, the higher interest rates on individual lending translate into potentially higher average returns which may make individual lending more attractive to MFIs than group lending. This may explain the preference for individual lending among MFIs (Kadongo & Kendi, 2013).
2.3 Potential of Models in Reducing Defaults

2.3.1 Group Lending and loan Default

Access to credit has long been identified as a necessary component of poverty alleviation (Morduch 2009; Rosenzweig & Wolpin 2008). In response, micro lending-giving small loans to the poor - has become increasingly prominent in the past twenty years (Morduch 2008). Micro lenders often use group liability, whereby loans are made to a group of individuals who are all liable if any borrower defaults, to overcome information asymmetries and to encourage group cooperation. Such group liability programs have been credited with increasing the poor access to credit worldwide; there are now over 70 million microfinance clients worldwide, and microfinance has become the most common source of credit for household enterprises (de Mel, McKenzie, and Woodru2008).

Despite its popularity, some have argued that group liability may in fact increase default rates compared to individual liability. In particular, group liability may create incentives for "strategic default" whereby group members purposefully default on their own loans despite being able to repay in order to avoid liability for other group members loans (Besley & Coate 2005). Empirical evaluations of microfinance lending have been unable to disentangle the effects of group liability from other common components of such lending programs, such as more intensive monitoring (Ghatak& Guinnane, 1999). One notable exception is Giné and Karlan (2008), which randomly remove the group liability provision in existing borrowing groups, finding no evidence of increased default rates, suggesting that group liability has no advantages over individual liability once borrowing groups have formed.

The current debate on the merits of group liability relative to individual liability has thus far ignored a third possibility: partial group liability. With partial group liability, individuals are penalized if fellow group members fail to repay, but are not responsible for the entirety of their group members loan. While partial group liability may exist as a de facto policy in certain lending situations (such as when loan officers make "exceptions" to the full group liability), there has been no rigorous examination of the benefits of such leniency.

Armendáriz and Morduch (2000) observe that group meetings facilitate education and training useful for clients with small experience and improve financial performance of
their businesses. Other researchers like Godquin (2004); Madajewicz (2011) argue that group lending helps mitigate the risks associated with information asymmetry: for instance, because group borrowers are linked by joint liability, if one of them switches from safe to risky project (moral hazard), the probability that her partner will have to pay the liability rises. This gives group members the incentive to monitor each other. The reduction in group members’ default through peer pressure and social ties has also been discussed by scholars like Guttman (2007); Dixon et al., (2007); Al-Azzam et al., (2011). However, Maria (2009) points out that group monitoring may be rendered ineffective where social ties are loose, and the cost of monitoring each other high.

Paxton et al. (2000) using data of 140 groups from a group-based lending programme in Burkina Faso established that homogeneity of the group in terms of their ethnicity, occupation and income, reduces its repayment performance. This may indicate that if members are more homogeneous they have lower incentives to screen, monitor and enforce each other and may start to collude against the programme. They also show that social pressure within groups is positively related to repayment performance. Similarly, Hermes et al (2005) offered an empirical analysis of the impact of monitoring and social ties within group lending programs on moral hazard behavior of its participants, based on data from 102 groups in Eritrea. They discovered that peer monitoring by and social ties of group leaders did assist in the reduction of moral hazard behavior of group members.

Cull et al (2006), comparing institutional profitability of 124 institutions in 49 countries, find positive correlations between interest rate yield and sustainability, but at particularly high rates they find default problems begin to occur for individual lending programs, but not for group lending programs(Scott, 2004). This suggests that the classic models of information asymmetries are indeed salient for individual liability, but that group liability has helped to mitigate the key factors driving the information asymmetry problems. Advocates of group lending not only argue that in fact it does mitigate information asymmetries, but typically offer an explanation as to how: by taking advantage of the social networks and relationships.
2.3.2 Relationship Lending and Loan Default

The access to information is inherently linked to relationship banking and may point to a comparative advantage of banks (Boot 2000). Puri and Rocholl (2008) find that banks convey private information to their retail investors to ensure greater demand for better issues. Using a unique, comprehensive dataset of loans by savings banks in Germany, Puri, Rocholl and Steffen (2012) study the role of relationship information in loan application and default prediction. They find that retail customers who have a relationship with their savings bank prior to applying for a loan, default significantly less than customers without such a prior relationship. Relationships of all kinds have inherent private information and are valuable in screening, monitoring, and reducing consumers’ incentives to default. Agarwal et al. (2010) and Agarwal et al. (2011) find that consumer-lender relationships help predict the default behavior of credit card accounts in the United States, and that for credit card customers, monitoring and thus the availability of information on the changes in customer behavior results in an advantage for relationship banking.

Qian, Strahan, and Yang (2011) study the reform of a Chinese bank that led to a delegation of credit risk assessment to the individual loan officer. The authors find that the predictability and performance of credit rating metrics improves. Berg, Puri, and Rocholl (2012) study a bank where loan decisions are based solely on hard information input by loan officers into a scoring system. They find that loan officers’ discretion even plays a role in hard information lending, since loan officers can make a judgment on the data they collect. The authors show that loan officers use more scoring trials for loan applications that do not pass the cut-off rating in the first trial.

Herzberg, Liberty, and Paravisini (2010) and Fisman, Paravisini and Vig (2012) examine the role of relationships by looking at loan officer turnovers. Additional supportive evidence for the adverse selection channel comes from papers that relate the strength of the borrower-bank relationship with loan outcomes: Using data on Belgian small businesses, Degryse and Van Cayseele (2000) find that interest rates are positively associated with the duration of the firm’s banking relationship. Chakravarty and Shahriar (2010) find the probability of extending credit to Bangladeshi cooperatives is positively associated with the strength of their relationship with MFIs. Using the unexplained variance in credit scoring models as
A proxy for the amount of soft information, Agarwal (2010) finds it has significant predictive power for default rates on new loans from a U.S. bank. Similarly, Chang et al. (2010) use empirical evidence from China to show that relationship lending can be used as a substitute for hard information in credit scoring models and can also be used to predict loan defaults.

Banking relationships reduce the information asymmetries between borrowers and lenders and thus ameliorate credit rationing that can occur due to these frictions. The longer the relationship, the greater the ability of the lender to accumulate information capital about the borrower (Boot, 2000). Longer relationships may also signal a long-term implicit contract between the bank and the borrower, in which the banks provide liquidity insurance (Elsas and Krahnen, 1998). This measure has been commonly used in the literature to capture how relationships affect credit supply (Degryse, Kim and Omen, 2009; Sette and Gobi, 2015).

The empirical evidence on the effects of the length of credit relationships is rich. Longer relationships seem to improve firms’ access to credit not only in normal times (Harhoff and Körting, 1998) but also during a crisis period (Sette and Gobi, 2015). However, their effects on the cost of credit are mixed. Berger and Udell (1995), Brick and Palia (2007), Bharath et al (2011) find that relationship banks charge a lower interest rate than transactional banks, while Degryse and Ongena (2005); and Ioannidou and Ongena (2010) show that interest rates increase with the duration of the relationship. Sette and Gobbi (2015) focus on crisis times and find that borrowers with longer relationships pay lower interest rates after the Lehman shock.

2.3.3 Relationship Lending Model
The relationship-lending model is based on qualitative information with an emphasis on the character and reliability of business owners gathered from informal sources such as suppliers and community leaders Malhotra et al, (2006). This is different from transactions lending approach which is based primarily on hard quantitative data that can be observed and verified at the time of credit origination like: financial ratios calculated from audited financial statements, credit scores assembled from data provided by credit bureaus, or valuation of hard collateral hence relationship lending plays a vital role in lending.
A study done by Shu-Teng et al., (2015) on determinants of microfinance repayment performance; evidence from enterprises in Malaysia was prompted by the percentage increase of non-performing loans of microfinance in Malaysia. The researcher sought to find out whether age, gender, level of education, business experience, amount of loans, loan tenure, monitoring, total sales and training are predictors of loan repayment performance. Repayment of loans given by government and non-government agencies were compared. For government agencies education level, business experience, amount of loan, loan tenure and monitoring were significant determinants of loan repayment performance while gender, age, total sales and training were not.

Non-government agencies’ predictors of loan repayment performance included age, education level, amount of loan and loan tenure while gender, total sales, business experience, monitoring and training were not predictors of loan repayment performance. From the analysis of the default group, age, business experience, amount of loan, loan tenure, monitoring and training were significant towards determining loan repayment performance, contrary, gender, education level, total sales are not predictors of loan repayment performance. Analysis of the non-default group shows that education level, amount of loan, loan tenure and monitoring have a significant relationship towards loan repayment performance while gender, age, total sales, business experience and training were not. Findings from the study point out that the higher the level of education, the better the loan repayment performance. This is because borrowers with higher level of education possess the understanding of how business operates leading to higher profit margins. This findings were supported by Mpogole, Mwaungulu, and Mlasu (2012) where the results indicated the level of education influence the number of loans that led to loan default while Asantey and Tengey (2014)attested to level of education being a contributing factor to loan delinquency.

Another important element of credit management is stress testing. This involves identification of possible events or future changes that could have a negative impact on the institution’s credit portfolio and the bank’sability to withstand the changes. CBK Risk management Guidelines, (2005). The areas to examine critically are: economic or industry changes, market – risk events and liquidity conditions which are the major challenges within the small business sector. Banks use stress testing because traditional types of risk
management, which examine the portfolio for expected losses, provision levels, criticized classified loans, and distribution across industries or geographies, don't give full picture of how the portfolio could be affected by unexpected events (Intrater, 2002).

2.4 Improvement Needed for the Models to Counter Loan Defaults

2.4.1 Credit Management

Credit risk monitoring refers to incessant monitoring of individual credits inclusive of off-balance sheet exposures to obligors (debtors) as well as overall credit portfolio of the bank. Banks need to enunciate a system that enables them to monitor quality of the credit portfolio on day-to-day basis and take remedial measures as and when any deterioration occurs (SBP, 2003). According to Malhotra et al, (2006) banks need to monitor loans through site visits timed to coincide with clients’ repayment schedules and provide clients with incentives for timely repayment. Close relationships with its clients enable banks to weather the financial and credit risks crisis relatively well and hence continue to provide loans to its existing and new clients.

Research conducted by (Mokhtar, Nartea, & Gan, 2012) on determinants of microcredit loans repayment problem among microfinance borrowers in Malaysia. The borrowers characteristics studied were age, gender and type of business while the microcredit loan characteristics were mode of repayment and repayment amount. The findings indicated a significant probability of loan repayment problem in males than in females as males were less responsible and disciplined in repaying their loans than females that has been supported by Adem, Gichuhi, and Otieno (2012) where the study also showed that 18-25 years and 46-55 years had a higher probability of having a problem in repaying loans. This was due to the inexperience, which resulted to lower income of the younger age group. The older age group though they are responsible, they may have many financial commitments to family and business which make them vulnerable to default. This is contrary to (Mugambi, 2010) where age group of 30-40 years had the highest default rate followed by under 30 years.

Study done by Hwarire (2012) conducted research on loan repayment and Credit Management of Small Businesses; A case study of a South African Commercial Bank. Loan
default rate was at 28%. The research analyzed factors that include; “age, bank balance, relationships (personal, business and new customer), interest rate, loan size, loan term, product type, gender and race were analyzed to determine their relationship and impact on default.” The study revealed that race, gender and negative bank balance are statistically significant in relation to loan delinquency and credit management. The study shows that females have a low risk appetite as compared to males that has also been supported by (Mokhtar, Nartea, & Gan, 2012). The study revealed a statistical significant negative relationship between business owned by both sexes and likelihood of default. This indicates that male and female partnerships are ideal in running businesses as they reduce the risk appetite and combine different managerial skills. The male and female collaboration neutralizes the males’ appetite for risk thus a good strategy is to use male/female collaboration to develop a profitable and sustainable business. However, results from a study done by (Shu-Teng, Zariyawati, Suraya-Hanim, & Annuar, 2015) indicate that gender is not a significant factor for loan performance.

A research conducted Kofi and Portia (2015) on determinants of loan default in businesses in loans in Ghana. The study classified the factors into four that include owner-specific, borrower-specific, loan specific and lender specific. The findings showed a that the “owners’ extra income (owner’s characteristics), multiple borrowing, diversion of loan purpose (borrower characteristics), loan price, loan purpose, loan age, repayment plan (loan characteristics) and underfunding (lender characteristics) significantly determined the probability of business loan default.” The study highlighted three borrower characteristics that contributed to loan default; size of the business where 52% of the businesses involved were small scale types that show significant positive relation with probability of default.

The second borrower characteristic is multiple borrowing where the pressure of loans from multiple institutions, leads to the option of default. High default rates due to multiple loans has also been supported by Mpogole, Mwaungulu, and Mlasu (2012). The third borrower attribute is diversion of loan from its intended purpose which reduces the motivation of borrower to repay loan hence leading to default. A similar study carried out in Ghana indicated the self-employed clients defaulted more than salaried clients Paddy (2012) while findings by Ntiamoah, Oteng, Opoku, and Siaw (2014) showed a significant positive relationship between problem of loan recovery and overdue of loans and profitability.
Research by Paddy (2012) on the Credit Risk Management in Banking Industry using historic data on payments, demographic characteristics and statistical techniques to identify the important demographic characteristics related to credit risk. The study was carried out in Ghana on the credit risk due to lack of honoring payments by customers which is a major problem in the banking industry in Ghana. He highlights that credit risk doesn’t occur in isolation because financial risk is not mutually exclusive. This means that the same source that endangers credit risk for institution may also expose it to other risk e.g. a bad portfolio risk may lead to liquidity problem. The clients’ age, sex, occupation, number of dependents, marital status and amount of loan collected was used. The results indicated that more men than women accessed loans but default rates is higher in males than females that has been supported by findings by Adem, Gichuhi, & Otieno (2012). The results showed the age bracket with the highest default rate were 30-39 year olds, married clients defaulted more than their single counterparts while clients with high number of dependents also defaulted more. Study by Mugambi (2010) agree with these findings that the age bracket with the highest default rate is 30-40 years.

Research conducted by Ntiamoah, Oteng, Opoku, & Siaw (2014) was on Loan Default Rate and Its Impact on Profitability in Financial Institutions. The purpose of the study was to investigate loan default rate and its impact on profitability and determining ways of reducing loan defaults in microfinance institutions that was done in Ghana. Findings from the research indicated a significant positive relationship between problem of loan recovery and overdue of loans and profitability. Project viability and profitability also had a significant positive relationship. The study also established a positive significant relationship between deficient analysis of project viability, overdue payment and reduced profitability. Findings on the demographic aspects of the respondents revealed that of the male respondents 55.2% defaulted in payments while the 47.5% of the female respondents defaulted. This shows there was no significant difference in loan default between females and males. This has been supported by Shu-Teng, Zariyawati, Suraya-Hanim, &Annuar (2015). With regards to age, the findings were 8.1% of the respondents who were above 50 years defaulted, 21.1% of the respondents between 41-50 years defaulted, 30.3% of the respondents aged between 31-40 years defaulted and the highest default rate was for the age group between 18-30 years that
was at 40.5%. Findings Paddy (2012) show that highest default rate is in the 30-39 age bracket.

2.4.2 Loan delinquency as a function of Industry

According to Mokhtar et al., (2012), on the research on determinants of microcredit loans repayment problem among microfinance borrowers in Malaysia, the determinants were classified into two. The two classifications are based on borrowers’ characteristics and microcredit characteristics. Borrowers’ characteristics’ that includes age, gender and type of business while the microcredit loan characteristics were mode of repayment and repayment amount. Business type variable was a significant determinant in loan default. Borrowers’ involved in small business activity in agriculture such as farming, animal husbandry and fisheries were more likely to default due to lower revenue cycles. The agricultural sector has also been attributed to high default rate by (Karani, 2012).

Research on determinants of loan default specifically the importance of borrower-level heterogeneity was done by Mccann and Mcindoe-calder (2012). The study analyses the finance ratios, length of time the borrowing firm’s owner has been with the firm, sector level effects, firm size, exposure and credit quality. The study analyzed agriculture, construction, finance, government, real estate, hotel and restaurant, information, manufacturing, service, transport and wholesale/retail. The findings indicate that the highest loan default rate is in real estate, construction and hotel and restaurant. Study by Hwarire (2012) links highest default rate to the manufacturing sector while Arko (2012)attributes it to the trading sector. This was however associated with the boom in the mid-2000 in Ireland where there were disproportionate amounts of credit allocated to the three speculative sectors which led to the sectors having the highest default rate. They are followed by manufacturing industry which also reported high default rates that suggests that the sector has high-volume defaulted loans. The researcher attributes the default probabilities based on the several factors including capital intensity that is positively correlated with dependence on external finance; variances in collateral depending on relative capital intensity and business models between sector.

Research done by Arko (2012) was on determining the Causes and Impact of Non-performing loans on the operations of Microfinance Institutions; A Case study of Sinapi
AbaTrust (SAT). Respondents from the research included branch managers, credit officers, recovery managers and credit risk managers. The study focused on the impact of Non-performing loans on operating profits, interest income and loanable funds that undermine the liquidity position of SAT. Other causes that were recognized by the respondents were ineffective/inadequate monitoring of loans, inadequate marketing avenues, business failure, poor credit appraisal methods. The researcher identified service, trading, manufacturing and agriculture are the four sectors where lending is mainly focused where 90% of loans portfolio is in trade and service industry. Forty three percent of the respondents highlighted trading sector as the sector that recorded the highest incidences of default while service sector was highlighted by 40% of the respondents. This is contrary to findings by Hwarire (2012) where the service industry reported the least default rate at 35% while manufacturing reported the highest rate at 68%. The manufacturing and agricultural sector incidence of default was supported by 12% and 5% of the respondents respectively. This is mainly backed by the fact that the service and trading sector record a high volume of loan hence the high probability of default and vise-versa for manufacturing and agricultural sector. However, the ranking helps in identifying that trading sector is more prone to default as compared to service sector while agricultural sector has higher probability of default as compared to manufacturing.

Research was carried out by Wambugu and Karanja (2013) on factors contributing to loans delinquency in Agribased Small and Medium enterprises in Kenya, a case study of the Agricultural Finance Corporation. There was a substantial increase in non-performing loans that resulted to high default rate necessitating a reduction in credit extension to Agribased Small and Medium Enterprises and adoption of more stringent measures. Findings from the study indicated that the type of business, project supervision and managerial skills contributed to loan default among Agribased Small and Medium Enterprises financed by Agricultural Finance Corporation. The study also established that credit worthiness evaluation of Agribased Small and Medium Enterprises contribute to loan default. The unpredictability of the agricultural sector that makes farmers highly reliant on weather conditions has led to the conclusion from the results of the research carried out by Mokhtar et al., (2012)and Karani (2012) that the vulnerability of agricultural sector to weather conditions leads to high default rate.
A study on Factors affecting loan repayment in Microfinance Institutions in Kenya was done by Hwarire (2012). Findings from the study indicated that loan default range differently across the sectors. The manufacturing sector had the highest cases of default 67.9% followed by service industry at 64% then by agricultural industry at 58.3% while trade sector recorded the least cases of loan repayment default at 34.9%. Although Service industry recorded high cases of default, borrowers who borrowed more and had training in their business had lower probabilities of defaulting. The findings from research done by Mccann & Mcindoe-calder (2012) indicate that the highest loan default rate is in real estate, construction and hotel and restaurant while Arko (2012) reported the least default in manufacturing and agricultural sector.

2.4.3 Educationinfluence Loan Delinquency
Karani (2012) research on factors that influence loan default by in Kenya: A case study of businesses operating within Thika Township in Kiambu County. From the study, all business owners were educated from which, 80.6% of the had college/university level of education. 72.9% of the respondents attributed education to the ability to manage loans while 27.1% disagreed. Key informants stated that the level of education showed the logic analysis an individual makes as a business owner with high level of education are said to make more informed business decisions while obtaining a loan. This was supported by Shu-Teng et al. (2015) as people with a higher level of education are able to drive the firm to profitability due to their better understanding of business.

Mrope and Mheehela (2015) argues that financial literacy helps to inculcate individuals with the financial knowledge necessary to create household budgets, initiate savings plans, and make strategic investment decisions. Proper application of that knowledge helps investors to meet their financial obligations through wise planning, and resource allocation so as to derive maximum utility. Mugambi (2010) asserts that financial knowledge appears to be directly correlated with self-beneficial financial behavior.

Hwarire (2012) examined the relationship between financial literacy and the influence of the factors that affect the investment decision. A modified Likert scale questionnaire was used and the results of the study indicated that the financial literacy was far from the needed level. The financial literacy level was found to have a significant effect on investment
decision making by the DTMFIs. Since these decisions are ongoing, requiring members to periodically monitor and evaluate the performance of their chosen fund and investment option, and decide whether to switch to another fund or investment option.

Olima (2013) investigated on the effect of financial literacy on saving practices and social security planning of Kenya Revenue Authority employees. The study findings indicated that financial literacy impacts to a great extent on the financial management because financial education programs guide program development and refinement. The study findings indicate that generally financial literacy to a great extent affects personal financial management among the respondents. However, most participants considered retirement planning less important, were less aware of the effects of estate planning, insurance planning and tax planning.

A study on multiple borrowing and loan repayment at Iringa, Tanzania was conducted by Mpogole, Mwaungulu, and Mlasu (2012) and the research was to evaluate the incidences of multiple borrowing, reasons for multiple borrowing and effects of multiple borrowing on loan repayment that lead to default. Findings from the research were that education level and number of dependents of the respondent significantly influenced the number of loans. Contrary to the researchers’ expectations, and Mugambi (2010)’s findings, results from the research portrayed that, the higher the level of education the higher the likelihood of multiple loans and age and sex were not significant determinants of the number of loans. Additionally, the higher the number of dependents the higher the likelihood of multiple loans which reflects on family obligations being the second most popular response as a reason for loans having multiple loans.

A study carried out by Mrope and Mhechela (2015) on challenges in Managing loan at Mbeya, Tanzania. The research examines the challenges faced by entreprenuers and the findings revealed that corruption during license registration, loan interest rates, lack of financial management skills, loan tax and loan divergence. They also analyzed the character of the borrower with regards to age, education, that corruption during license registration, loan interest rates and lack of financial management skills are among of the top challenges to MSEs in managing their loans. Sixty percent of the respondents had lower level of education that is secondary level and below while forty percent had post-secondary education. A major
challenge that the researcher highlighted is lack of financial management skills and loan governance skills where though some respondents have gone through some short courses, they still experience difficulties in managing loans. The researcher has highlighted the need for trainings so as to improve the clients’ management skills that will translate to lower default rate. Statistical results from study conducted by Mugambi (2010) and Hwarire (2012) show that loan default for above college level education is about 40% while those below is approximately 60%.

2.5 Chapter Summary
This chapter reviewed related literature in relation to the factors that influence loan delinquency in Small and Medium size enterprises. The literature was classified into the three research questions. The first section looked at literature related to models of loan disbursement. The second section looked at literature related to potentials of the model to minimize defaults. The third section looked at literature related to improvement needed in the models. The next chapter will cover the proposed research methodology to be used for the study.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction
This chapter describes the research design of the study; target population and its sample size; the methods and procedures that was used in the data collection and lastly the techniques that was used in the data analysis.

3.2 Research Design

Research design according to Cooper and Schindler (2014) “is the blue print for fulfilling objectives and answering questions.” The three main research design types according to Cooper and Schindler (2014) are exploratory, descriptive and causal where the main difference of the designs lies in the objectives. This study useda descriptive design where a survey was conducted on Faulu Bank Limited Kenya. A descriptive design has been defined as a research method that scrutinizes the situation, in its current state as it exist (Williams, 2007). A descriptive survey attempts to identify and explain variables that exist in a given situation and to describe the relationship that exists between these variables in order to provide a picture of a particular phenomenon (Cooper and Schindler, 2014).The dependent variable is countering loan default while the independent variables are the strategic models of accessing micro finance.

3.2 Population and Sampling design

3.3.1. Population
According to Cooper and Schindler (2014), the target population includes, people, events or records that contain the desired information and can answer the measurement questions. Population has also been defined by Mugenda and Mugenda (1999) as the entirety of the individuals, items, events or objectives, which possess some unique characteristics the researcher is interested in studying. The target population for this study included credit officers in Faulu Bank Limited who were 75 in number.
3.3.2 Sampling Design and Sample Size

3.3.2.1 Sampling Frame
Sampling frame is defined by Saunders, Lewis and Thornhill (2012); Cooper and Schindler (2014) as a complete list of all population cases from which a sample will be drawn. It also contains names of individuals, items or objects that can be sampled according to Mugenda, and Mugenda (1999). The sampling frame for this study comprised of 40 credit officers from Faulu Bank Ltd headquarters.

3.3.2.2 Sampling Technique
This study used probability sampling to ensure fair representation and generalization of findings to the population. Probability sampling gives equal chance or probability of each case being selected from the population (Saunders et al, 2012). According to Cooper and Schindler (2014), stratified random sampling is segregation of population into several mutually exclusive sub populations where sample includes elements from each of the segments. These sub populations are a representation of what the researcher’s desired representation of the population. Stratified sampling is advocated when different methods of data collection are applied in different parts of population (Cooper & Schindler 2014).

3.3.1.1 Sampling Size
The sample size according to Mugenda and Mugenda (2003), the choice of a sample size by a researcher should be by: the level of certainty that the characteristics of the data collected represents the entire populations’ characteristics, the size of the total population, the accuracy the researcher requires for any estimates made by the sample and the types of analysis used in the study. Population size of the study is a major factor that affects sample size as emphasized by Cooper and Schindler (2014). The sample size should be realistic and should not be too large or too small to give a confidence interval of desired width (Kothari & Garg, 2014). There are 75 credit control officers in Faulu Bank Limited. At confidence level of 95% with a margin of error of 5%, below is the calculation of sample size. N represent the population for this study is 75 while n represents the sample size which is 40 respondents.

Sample Size n = N ÷ [1 + N (e)^2]
3.4 Data Collection Methods

This study employed questionnaires as tools for data collection to collect primary data. Questionnaires include all methods of data collection in which different respondents are asked the similar questions in a preset order (Saunders, Lewis & Thornhill 2012). The questionnaire was structured based on the three research questions of the study. The questionnaire was structured in 5 parts, demographic information, models available for accessing microfinance, potential of the models in reduce defaults, improvement needed for the models and issues of loan defaults.

For the qualitative questions, this study used semi structured questions. The questions had key question linked to the objectives. For the qualitative approach, the Likert scale semi-structured questionnaires. We administered the research instruments to the respondents.

3.5 Research Procedures

Research procedure according to Mugenda and Mugenda (1999), is the process that a researcher undertakes while conducting a study. A research question is first identified following, sampling size, data collection tools and approaches. A pilot testing of the questionnaire was done to determine the reliability and accuracy of the questionnaire and to determine the relevance, length and precision of the questions. This aided the researcher to identify weaknesses of the questions, correct redundancies, reduce or increase the questions or rework the questions. The researcher then analyzed the data from the primary data collection.

3.6 Data Analysis

Descriptive analysis is a process that transforms a mass of raw data into tables, charts, with frequency distribution and percentages which helps in making sense of the data (McDaniel & Gates, 2001). Collected data was first checked for accuracy and completeness. Qualitative variables from the returns were coded so as to ease data analysis.

Collected data was entered into Statistical Package for Social Sciences (SPSS) for data analysis to visualize in percentage form the respondents’ response. A correlation and significance test were undertaken between the dependent variable (loan default) and independent variable (models available for accessing microfinance, potential of the models in
reduce defaults and improvement needed for the models to counter loan defaults) this was
done to test the relationship and the relevance of the variables. The results and findings from
the study were presented in frequency distribution tables, bar charts and graphs.

3.7 Chapter Summary
This chapter describes the methodology or approach that was used in carrying out the study
to answer the three research questions. The chapter started off with introduction, research
design, population and sampling design, sampling frame, sampling technique, sample size,
data collection model, research procedures and data analysis. In the next chapter the results
and findings are discussed.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the results obtained from the data analysis done. This includes results relating to the respondents’ demography and the specific research objectives of this study which aimed investigating the models applied to curb loan defaults of accessing micro finance used to counter loan default at Faulu bank.

4.1.1 Response Rate

A total of 40 questionnaires were issued. Out of these, 30 were filled and returned giving a response rate of 75%. This was sufficient for the study as indicated in table 4.1

Table 4.1: Response Rate

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filled and returned</td>
<td>30</td>
<td>75</td>
</tr>
<tr>
<td>Non-response</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

4.2 General Information

4.2.1 Gender

Analysis of gender of the respondents revealed that males were 53% while females represented 47%. This indicates a gender balance in the credit office department at Faulu Bank and therefore unbiased results as far as gender representations are concerned as shown in figure 4.1

Figure 4.1: Pie chart of study participants vs gender
4.2.2 Age of Respondents
Analysis of the respondent’s age was done and the finding show that majority were aged between 20-30 years representing 50% of the total, this was followed by 31-40 years who represented 36.7%, 41-50 were only 13.3%. There were no respondents aged between 18-20, and above 50 as shown in figure 4.2

Figure 4.2: Bar graphs showing the varied age of respondents

4.2.3 Education
Analysis of the education qualification revealed that respondents with Certificate and Vocational Training represented 6.7% respectively, Diploma holders represented 3.3% while Bachelor degree holders who were the majority had 73.3% response rate with masters following at 10%. No respondent had a PhD as shown in figure 4.3

Figure 4.3: Bar graphs showing the level of education of respondents
4.2.4 Duration in the Firm

Analysis of the duration in the firm revealed that respondents with below 2 years’ experience were 46.7%, those with 6-8 years represented 36.7% while those of 3-5 years had a 6.7% response rate with those of over 8 years representing 10%. This implies that the response received was vast as it covered various extremes in regard to experience in the institutions as shown in figure 4.4.

![Figure 4.4: Bar graphs showing the duration in the firm](image)

4.2.5 Loan Default Handled

Analysis of the defaults handled revealed that most respondents handle over 30 cases of default and this represented 70%, those who handle 11-20 cases represented 23.3% while those of below 10 cases and 21-30 representing 3.3% as shown in figure 4.5

![Figure 4.5: Bar graphs showing loan default handled per month](image)
4.2.6 Strategic Models Applied at Faulu bank

Analysis of the main model applied for accessing microfinance revealed that Relationship lending and Individual Lending had the highest response rate of 46.7% respectively while, those who indicated group lending represented 6.7% as shown in figure 4.6

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Lending</td>
<td>2</td>
</tr>
<tr>
<td>Relationship lending</td>
<td>14</td>
</tr>
<tr>
<td>Individual Lending</td>
<td>14</td>
</tr>
</tbody>
</table>

Figure 4.6: Bar graphs showing models applied

4.3 Models Available for Accessing Finance

The first objective set to establish how models enhance access to finance and the respondents were required to rate based on a scale where 1=not important at all, 2=not important, 3=neutral, 4=important and 5=very important.

4.3.1 Descriptive of Models Available for Accessing Finance

4.3.1.1 Group Lending

Analysis of group lending revealed that there was uncertainty of group size determining the repayment performance (m=3.34, sd=1.317) or the bank obtaining high repayment rates are obtained from group lenders (m=3.30, sd=.869). However, it was noted that self-selected groups have slightly higher willingness to repay (m=4.07, sd=.858) as shown in table 4.2

Table 4.2: Descriptive of Group Lending for Accessing Finance

<table>
<thead>
<tr>
<th>Group Lending</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group size determine the repayment performance</td>
<td>3.34</td>
<td>1.317</td>
</tr>
<tr>
<td>High repayment rates are obtained from group lenders</td>
<td>3.30</td>
<td>.869</td>
</tr>
<tr>
<td>Self-selected groups have slightly higher willingness to repay.</td>
<td>4.07</td>
<td>.858</td>
</tr>
</tbody>
</table>
4.3.1.2 Relationship Lending

Analysis of relationship lending revealed that education level was not important in determining loan repayment \((m=2.97, sd=1.586)\). It was also revealed that loan repayment does not vary across gender \((m=2.37, sd=1.377)\) and most findings revealed that most banks found it not important to use stress testing to determine loan risk management \((m=2.87, sd=1.137)\).

The finding revealed that bank found it important to use qualitative information based on the character and reliability of owner \((m=4.07, sd=1.015)\). There was however uncertainty of qualitative information being gathered from suppliers and community leaders \((m=3.70, sd=1.343)\) as indicated in table 4.3.

<table>
<thead>
<tr>
<th>Relationship Lending</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education level determines loan repayment</td>
<td>2.97</td>
<td>1.586</td>
</tr>
<tr>
<td>loan repayment varies across gender</td>
<td>2.37</td>
<td>1.377</td>
</tr>
<tr>
<td>Banks use stress testing to determine loan risk management</td>
<td>2.87</td>
<td>1.137</td>
</tr>
<tr>
<td>The bank uses qualitative information based on the character and reliability of SME owner</td>
<td>4.07</td>
<td>1.015</td>
</tr>
<tr>
<td>Qualitative information is gathered from suppliers and community leaders</td>
<td>3.70</td>
<td>1.343</td>
</tr>
</tbody>
</table>

4.3.1.3 Individual Lending

Analysis of individual lending’s indicate that respondents were neutral that loan officers bear principle responsibility for loan decisions \((m=3.73, sd=1.143)\), and individual lending programs use a variety of incentives such as collateral requirements, co-signers and guarantors to promote repayment \((m=3.70, sd=1.264)\). It was however considered important that guarantor exerts sufficient social pressure on the client to repay \((m=4.03, sd=.964)\). There was however uncertainty that as a bank we vet individual borrowers more heavily than group borrowers \((m=3.57, sd=1.331)\) and the firm charging individual borrowers a higher default premium \((m=3.17, sd=1.147)\) as shown in table 4.4.
Table 4.4: Individual Lending

<table>
<thead>
<tr>
<th>Individual Lending</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>loan officers bear principle responsibility for loan decisions</td>
<td>3.73</td>
<td>1.143</td>
</tr>
<tr>
<td>Individual lending programs use a variety of incentives such as collateral</td>
<td>3.70</td>
<td>1.264</td>
</tr>
<tr>
<td>requirements, co-signers and guarantors to promote repayment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guarantor exerts sufficient social pressure on the client to repay</td>
<td>4.03</td>
<td>.964</td>
</tr>
<tr>
<td>As a bank we vet individual borrowers more heavily than group borrowers</td>
<td>3.57</td>
<td>1.331</td>
</tr>
<tr>
<td>We charge individual borrowers a higher default premium</td>
<td>3.17</td>
<td>1.147</td>
</tr>
</tbody>
</table>

4.4 Potential of Reducing Default

The second objective set to establish how models enhance access to finance and the respondents were required to rate based on a scale where 1=not important at all, 2=not important, 3=neutral, 4=important and 5=very important.

4.4.1 Descriptive of Potential of Reducing Default

4.4.1.1 Group Lending Reducing Defaults

Analysis of group lending reducing defaults revealed uncertainty that group liability programs have access to credit (m=3.50, sd=1.306). Despite this, respondents noted that individuals are penalized if fellow group members fail to repay (m=4.03, sd=1.217). Group meetings have facilitated education and training of clients (m=4.40, sd=.855). Group lending helps mitigate the risks associated with information asymmetry (m=4.10, sd=.712) and social pressure within groups is positively related to repayment performance (m=4.03, sd=1.066) as shown in table 4.6

Table 4.5: Descriptive of Group Lending Reducing Default

<table>
<thead>
<tr>
<th>Group Lending</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group liability programs have access to credit</td>
<td>3.50</td>
<td>1.306</td>
</tr>
<tr>
<td>Individuals are penalized if fellow group members fail to repay</td>
<td>4.03</td>
<td>1.217</td>
</tr>
<tr>
<td>Group meetings have facilitated education and training of clients</td>
<td>4.40</td>
<td>.855</td>
</tr>
<tr>
<td>Group lending helps mitigate the risks associated with information asymmetry</td>
<td>4.10</td>
<td>.712</td>
</tr>
<tr>
<td>Social pressure within groups is positively related to repayment performance</td>
<td>4.03</td>
<td>1.066</td>
</tr>
</tbody>
</table>
4.4.1.2 Relationship Lending Reducing Defaults

Analysis of relationship lending reducing defaults revealed uncertainty of banks conveying private information to their retail investors to ensure greater demand for loans (m=3.07, sd=1.388). Majority revealed that it was important for the retail customers who have a relationship with their savings bank have to have low default rate (m=4.17, sd=1.020). It was also of importance to have a Consumer-lender relationship which help predict the default behavior (m=4.20, sd=.961). There was also lack of certainty on whether loan officers’ discretion plays a role in loan default rate (m=3.53, sd=1.074) and the banking relationships reducing the information asymmetries between borrowers and lenders (m=3.47, sd=1.224) as indicated in table 4.7

Table 4.6: Relationship Lending Reducing Defaults

<table>
<thead>
<tr>
<th>Relationship Lending</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Banks convey private information to their retail investors to ensure</td>
<td>3.07</td>
<td>1.388</td>
</tr>
<tr>
<td>greater demand for loans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Retail customers who have a relationship with their savings bank have</td>
<td>4.17</td>
<td>1.020</td>
</tr>
<tr>
<td>low default rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Consumer-lender relationships help predict the default behavior</td>
<td>4.20</td>
<td>.961</td>
</tr>
<tr>
<td>4. Loan officers’ discretion plays a role in loan default rate</td>
<td>3.53</td>
<td>1.074</td>
</tr>
<tr>
<td>5. Banking relationships reduce the information asymmetries between</td>
<td>3.47</td>
<td>1.224</td>
</tr>
<tr>
<td>borrowers and lenders</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.4.1.3 Individual Lending Reducing Defaults

Analysis of the impact of individual lending on reducing defaults revealed a lack of importance on the organization providing loans only if material collateral is provided (m=2.50, sd=1.548) and it was also noted that clients do not required to build up savings before loans are advanced (m=2.83, sd=1.487). It was however not certain that savings is mandatory during the duration of the loan (m=3.30, sd=1.579). Majority found it necessary for loan officer or personnel visit the client’s business to check on whether it is operational (m=4.30, sd=1.179) as indicated in table 4.8

Table 4.7: Individual Lending Reducing Defaults

<table>
<thead>
<tr>
<th>Individual Lending</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>The organization provide loans only if material collateral is provided.</td>
<td>2.50</td>
<td>1.548</td>
</tr>
</tbody>
</table>
4.5 Improvement to Counter Loan Defaults

The second objective set to establish how models enhance access to finance and the respondent were required to rate based on a scale where 1=not important at all, 2=not important, 3=neutral, 4=important and 5=very important.

4.5.1 Descriptive of Improvement to Counter Loan Defaults

4.5.1.1 Improvements Made in Credit Management

An analysis to determine improvements made in credit management of small businesses revealed uncertainty of Faulu in monitoring loans through site visits and provide clients with incentives for timely repayment (m=3.23, sd=1.305) it was however revealed that it was important for the bank to maintain close relationships with its clients thus enable banks to assess financial and credit risks crisis (m=4.17, sd=.950). It was also not clear if the bank profile and evaluate risks according to the customer's age (m=3.27, sd=1.202). Profile likelihood of default by sex of the customer was also not considered to be important (m=2.62, sd=1.498).

Table 4.8: Descriptive of Credit Management to Counter Loan Defaults

<table>
<thead>
<tr>
<th>Credit Management of Small Businesses</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>We monitor loans through site visits and provide clients with incentives for timely repayment</td>
<td>3.23</td>
<td>1.305</td>
</tr>
<tr>
<td>Close relationships with its clients enable banks to assess financial and credit risks crisis.</td>
<td>4.17</td>
<td>.950</td>
</tr>
<tr>
<td>We profile and evaluate risks according to the customers age</td>
<td>3.27</td>
<td>1.202</td>
</tr>
<tr>
<td>We profile likelihood of default by sex of the customer</td>
<td>2.62</td>
<td>1.498</td>
</tr>
</tbody>
</table>

4.5.1.2 Loan Delinquency as a Function of Industry

The study sought to determine whether loan delinquency was a function of Industry and the findings indicated that business type was not a significant factor in determining loan default (m=3.87, sd=1.252). Similarly, majority of respondents were neutral when asked if they were aware of high loan defaulters across industries (m=3.53, sd=1.306). Respondents revealed that it was of importance to partake adequate monitoring of loans (m=4.17, sd=.950) and they
have put up, measures to mitigate loan default from high business failure (m=4.13, sd=.819). Also, there exist effective credit appraisal methods to mitigate loans (m=4.20, sd=1.064) as shown on table 4.13.

**Table 4.9: Loan Delinquency as a Function of Industry**

<table>
<thead>
<tr>
<th>Loan delinquency as a function of Industry</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business type is a significant determinant in loan default</td>
<td>3.87</td>
<td>1.252</td>
</tr>
<tr>
<td>We are aware of high loan defaulters across industries</td>
<td>3.53</td>
<td>1.306</td>
</tr>
<tr>
<td>We partake adequate monitoring of loans</td>
<td>4.17</td>
<td>.950</td>
</tr>
<tr>
<td>We have put up, measures to mitigate loan default from high business failure</td>
<td>4.13</td>
<td>.819</td>
</tr>
<tr>
<td>We ensure effective credit appraisal methods to mitigate loans</td>
<td>4.20</td>
<td>1.064</td>
</tr>
</tbody>
</table>

**4.5.1.3 Improvements Made on Individual Lending**

To analyze the improvements made on individual lending the findings show that most respondents were uncertain about reviewing loan interest rates to minimize defaults (m=3.27, sd=1.202). Similarly, there was uncertainty about the bank educating SME owners on how to manage loans (m=3.83, sd=1.053). It was also revealed that no effort was put on offering financial management skills to SME owners (m=3.77, sd=1.165) as shown in table 4.14.

**Table 4.10: Improvements Made on Individual Lending**

<table>
<thead>
<tr>
<th>Individual lending</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. We are reviewing loan interest rates to minimize defaults</td>
<td>3.27</td>
<td>1.202</td>
</tr>
<tr>
<td>2. We education SME owners on how to manage loans</td>
<td>3.83</td>
<td>1.053</td>
</tr>
<tr>
<td>3. We offer financial management skills to SME owners</td>
<td>3.77</td>
<td>1.165</td>
</tr>
</tbody>
</table>

**4.6 Regression Analysis of Loan Default and Co Factors**

**4.6.1 Model Summary of Loan Default and Co Factors**

The research analyzed relationship between loan default and co factors (Models available for accessing microfinance, potential of the models to reduce defaults and improvement needed for the models to counter loan defaults). The results showed that the R\(^2\) value was 0.628 hence 62.8% of the variation in default was explained by Models available for accessing microfinance, potential of the models in reduce defaults and improvement needed for the models to counter loan defaults in table 4.20.
Table 4.11: Model Summary of Loan Default and Co Factors

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.792a</td>
<td>.628</td>
<td>.585</td>
<td>.42753</td>
<td></td>
</tr>
</tbody>
</table>

Change Statistics

<table>
<thead>
<tr>
<th>R Square Change</th>
<th>F Change</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>.628</td>
<td>14.629</td>
<td>3</td>
<td>26</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Models available for accessing microfinance, potential of the models in reduce defaults and improvement needed for the models to counter loan defaults

4.6.2 Anova Summary of Loan Default and Co Factors

An ANOVA analysis was done between loan default) and co factors (Models available for accessing microfinance, potential of the models in reduce defaults and improvement needed for the models to counter loan defaults) at 95% confidence level, the F critical was 14.629 and the P value was (0.000) therefore significant the results are illustrated in table 4.19.

Table 4.12: Anova Summary of Loan Default and Co Factors

<table>
<thead>
<tr>
<th>Model</th>
<th>ANOVAa</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>8.022</td>
<td>3</td>
<td>2.674</td>
<td>14.629</td>
<td>.000b</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>4.752</td>
<td>26</td>
<td>.183</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>12.774</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: loan default

b. Predictors: (Constant), obj3, obj1, obj2

4.7 Chapter Summary

This chapter has highlighted results and findings. The first section provided an analysis of demographic data of the respondents, the second part sought to determine theModels available for accessing microfinance. The third part was meant to determine potential of the models in reducing defaults. While the last part was aimed at establishing and improvement needed for the models to counter loan defaults. Descriptive statistics such as mean, standard deviation was analysed as well as inferential in the form of correlation and regression. In chapter five these results will be discussed and relevant conclusions and recommendations made with regard to models of accessing micro finance used to counter loan default.
CHAPTER FIVE

5.0 DISCUSSION CONCLUSION AND RECOMMENDATION

5.1 Introduction
The purpose of the study is to evaluate models of accessing micro finance used to counter loan default. This will be organized based on the specific research questions which what models are available for accessing microfinance, what is the potential of the models in reduce defaults and is there any improvement needed for the models to counter loan defaults.

5.2 Summary of the Study
The purpose of the study is to evaluate models of accessing micro finance used to counter loan default. The study was guided by the following research questions: What models are available for accessing microfinance? What is the potential of the models in reduce defaults? Is there any improvement needed for the models to counter loan defaults?

This study used a descriptive research design. It was carried out in Faulu Microfinance Limited, at the Nairobi Head Quarters in Kenya. From the 40 questionnaires given only 30 responded resulting into a response rate of 75%. The collected data was cleaned for data irregularities, and the clean data analyzed using Statistical Package for Social Sciences (SPSS).

Analysis of group lending revealed that there was uncertainty of group size determining the repayment performance or the bank obtaining high repayment rates are obtained from group lenders. However, it was noted that self-selected groups have slightly higher willingness to repay. Analysis of relationship lending revealed that education level was not important in determining loan repayment. It was also revealed that loan repayment does not vary across gender and most findings revealed that most banks found it not important to use stress testing to determine loan risk management. The finding revealed that bank found it important to use qualitative information based on the character and reliability of SME owner. There was however uncertainty of qualitative information being gathered from suppliers and community leaders. Analysis of individual lending’s indicate that respondents were neutral that loan officers bear principle responsibility for loan decisions, and individual lending programs use a variety of incentives such as collateral requirements, co-signers and guarantors to promote repayment. It was however considered important that guarantor exerts sufficient social
pressure on the client to repay. There was however uncertainty that as a bank we vet individual borrowers more heavily than group borrowers and the firm charging individual borrowers a higher default premium. The result established a positive relationship between the independent variables: Group lending model, relationship lending model, on the dependent variable (loan default).

Analysis of group lending reducing defaults revealed uncertainty that group liability programs have access to credit. Despite this, respondents noted that individuals are penalized if fellow group members fail to repay. Group meetings have facilitated education and training of clients. Group lending helps mitigate the risks associated with information asymmetry and social pressure within groups is positively related to repayment performance. Analysis of relationship lending reducing defaults revealed uncertainty of banks conveying private information to their retail investors to ensure greater demand for loans. Majority revealed that it was important for the retail customers who have a relationship with their savings bank have to have low default rate. It was also of importance to have a Consumer-lender relationship which helps predict the default behavior. There was also lack of certainty on whether loan officers’ discretion plays a role in loan default rate and the banking relationships reducing the information asymmetries between borrowers and lenders. Analysis of individual lending reducing defaults revealed a lack of importance on the organization providing loans only if material collateral is provided. Majority found it necessary for loan officer or personnel visit the client’s business to check on whether it is operational. The result established a positive relationship between the independent variables Group lending, relationship lending model, and individual lending \(r=0.469, p=0.009\), on the dependent variable (loan default).

An analysis to determine improvements made in credit management of small businesses revealed uncertainty of the bank in monitoring loans through site visits and provide clients with incentives for timely repayment, it was however revealed that it was important for the bank to maintain close relationships with its clients thus enable banks to assess financial and credit risks crisis. It was also not clear if the bank profile and evaluates risks according to the customers’ age. Profile likelihood of default by sex of the customer was also not considered to be important.
The study sought to determine whether loan delinquency was a function of Industry and the findings indicated that business type was not a significant factor in determining loan default. Similarly, majority of respondents were neutral when asked if they were aware of high loan defaulters across industries. Respondents revealed that it was of importance to partake adequate monitoring of loans and they have put up, measures to mitigate loan default from high business failure. Also, there exist effective credit appraisal methods to mitigate loans. To analyze the improvements made on individual lending’s the findings show that most respondents were uncertain about reviewing loan interest rates to minimize defaults. Similarly, there was uncertainty about the bank educating SME owners on how to manage loans. It was also revealed that no effort was put on offering financial management skills to SME owners. The result established a positive relationship between the independent variables credit management, loan delinquency, and individual improvement on the dependent variable (loan default).

5.3 Discussion

5.3.1 Models available For Accessing Microfinance

5.3.1.1 Group Lending
Analysis of group lending revealed that there was uncertainty of group size determining the repayment performance. This contradicts a study by Abbink et al., (2002) who investigated the importance of group sizes for the repayment performance, with the help of a game theoretical model. Their findings suggest that both smaller and larger groups have good repayment performance. Large groups have slightly less solidarity than smaller groups but this is compensated by a large distribution of risk (Abbink et al., 2012).

However, it was noted that self-selected groups have slightly higher willingness to repay. Similar findings were established by Khandler uses panel data at household level. In 1991/2 the World Bank surveyed 1769 households from 87 villages that were randomly chosen. They surveyed households within three different microcredit banks; BRAC (Bangladesh Rural Advancement Committee), Grameen Bank and BRDB’s (Bangladesh Development Board) RD-12 project and households that were not participants in any program. The findings show that self-selected groups have slightly higher willingness to repay. In
situations where the members of the group are able to verify the outcome of the economic activities of the other members and punish them if they cheat, incentives to cooperate are proven to be stronger.

5.3.1.2 Relationship Lending

Analysis of relationship lending revealed that education level was not important in determining loan repayment. A study done by Shu-Teng et al., (2015) on Determinants of Microfinance Repayment Performance; Evidence from Small Medium Enterprises in Malaysia was prompted by the percentage increase of non-performing loans of microfinance in Malaysia. Repayment of loans given by government and non-government agencies were compared. For government agencies education level, business experience, amount of loan, loan tenure and monitoring were significant determinants of loan repayment performance while gender, age, total sales and training were not. From the analysis of the default group, age, business experience, amount of loan, loan tenure, monitoring and training were significant towards determining loan repayment performance, contrary, gender, education level, total sales are not predictors of loan repayment performance.

The finding revealed that banks found it important to use qualitative information based on the character and reliability of SME owner. The relationship-lending model is based on qualitative information with an emphasis on the character and reliability of SME owners gathered from informal sources such as suppliers and community leaders Malhotra et al, (2006) adds that this is different from transactions lending approach which is based primarily on hard quantitative data that can be observed and verified at the time of credit origination like: financial ratios calculated from audited financial statements, credit scores assembled from data provided by credit bureaus, or valuation of hard collateral hence relationship lending plays a vital role in SME lending.

5.3.1.3 Individual Lending

It was however considered important that guarantor exerts sufficient social pressure on the client to repay. Individual lending programs also present several benefits. For instance, Armendáriz and Morduch (2000) find that the guarantor exerts sufficient social pressure on the client to repay MFI loans in Russia and Eastern Europe. However, Laure and Baptiste (2007) argue that the guarantee mechanism, especially personal guarantees, is only
meaningful if the borrower has assets that can be pledged as surety, if the institutional framework permits the actual transfer of ownership of the pledge from the borrower to the creditor easily and if the pledged assets are not very liquid.

5.3.2 Potential of the Models in Reducing Loan Defaults

5.3.2.1 Group Lending Reducing Defaults

Analysis of group lending reducing defaults revealed uncertainty that group liability programs have access to credit. Access to credit has long been identified as a necessary component of poverty alleviation (Morduch 2009; Rosenzweig & Wolpin 2008). In response, micro lending—giving small loans to the poor—has become increasingly prominent in the past twenty years (Morduch 2008). Micro lenders often use group liability, whereby loans are made to a group of individuals who are all liable if any borrower defaults, to overcome information asymmetries and to encourage group cooperation. Such group liability programs have been credited with increasing the poor access to credit worldwide; there are now over 70 million microfinance clients worldwide, and microfinance has become the most common source of credit for household enterprises (de Mel, McKenzie, and Woodru 2008).

It was also noted that individuals are penalized if fellow group members fail to repay. In particular, group liability may create incentives for "strategic default" whereby group members purposefully default on their own loans despite being able to repay in order to avoid liability for other group members' loans (Besley and Coate 2005). Empirical evaluations of microfinance lending have been unable to disentangle the effects of group liability from other common components of such lending programs, such as more intensive monitoring (Ghatak and Guinnane 1999). One notable exception is (Giné and Karlan 2008), which randomly remove the group liability provision in existing borrowing groups, finding no evidence of increased default rates, suggesting that group liability has no advantages over individual liability once borrowing groups have formed.

Group meetings have facilitated education and training of clients and similar findings have been expressed by Armendáriz and Morduch (2000) who observe that group meetings facilitate education and training useful for clients with small experience and improve financial performance of their businesses. Other researchers (Godquin, 2004; Madajewicz,
argue that group lending helps mitigate the risks associated with information asymmetry: for instance, because group borrowers are linked by joint liability, if one of them switches from safe to risky project (moral hazard), the probability that her partner will have to pay the liability rises. This gives group members the incentive to monitor each other. The reduction in group members’ default through peer pressure and social ties has also been discussed (Guttman, 2007; Dixon et al., 2007; Al-Azzam et al., 2011). However, Maria (2009) points out that group monitoring may be rendered ineffective where social ties are loose and the cost of monitoring each other high.

Group lending helps mitigate the risks associated with information asymmetry and social pressure within groups is positively related to repayment performance. Madajewicz (2011) argue that group lending helps mitigate the risks associated with information asymmetry: for instance, because group borrowers are linked by joint liability, if one of them switches from safe to risky project (moral hazard), the probability that her partner will have to pay the liability rises. This gives group members the incentive to monitor each other.

5.3.2.2 Relationship Lending
Majority revealed that it was important for the retail customers who have a relationship with their savings bank to have low default rate. Using a unique, comprehensive dataset of loans by savings banks in Germany, Puri, Rocholl, and Steffen (2012) study the role of relationship information in loan application and default prediction. They find that retail customers who have a relationship with their savings bank prior to applying for a loan, default significantly less than customers without such a prior relationship. Relationships of all kinds have inherent private information and are valuable in screening, monitoring, and reducing consumers’ incentives to default.

5.3.2.3 Individual Lending
Analysis of the impact of individual lending on reducing defaults revealed a lack of importance on the organization providing loans only if material collateral is provided. Charles and Mori (2016) study to determine effects of collateral on loan repayment in Tanzania revealed that movable assets increase the likelihood that borrowers perceived to be less creditworthy will obtain loans from informal sources and repay them. Majority found it necessary for loan officer or personnel visit the client’s business to check on whether it
is operational. Similar recommendations were done by Addae-korankye (2014) study to analyze the causes and control of loan delinquency/default in microfinance institutions in Ghana. Measures to control default were found to include training before and after disbursement, reasonable interest rate, monitoring of clients, and proper loan appraisal.

5.3.3 Improvement Needed for the Models to Counter Loan Defaults

5.3.3.1 Credit Management to Counter Loan Defaults
An analysis revealed that it was important for the bank to maintain close relationships with its clients thus enable banks to assess financial and credit risks crisis. According to Malhotra et al, (2006) banks need to monitor loans through site visits timed to coincide with clients’ repayment schedules and provide clients with incentives for timely repayment. Close relationships with its clients enable banks to weather the financial and credit risks crisis relatively well and hence continue to provide loans to its existing and new clients. Research conducted by (Mokhtar, Nartea, & Gan, 2012) on determinants of microcredit loans repayment problem among microfinance borrowers in Malaysia.

Profile likelihood of default by sex of the customer was also not considered to be important. Study done by (Hwarire, 2012) conducted research on loan repayment and Credit Management of Small Businesses; A case study of a South African Commercial Bank. Loan default rate was at 28%. The research analyzed factors that include; “age, bank balance, relationships (personal, business and new customer), interest rate, loan size, loan term, product type, gender and race were analyzed to determine their relationship and impact on default.” The study revealed a statistical significant negative relationship between business owned by both sexes and likelihood of default. This indicates that male and female partnerships are ideal in running businesses as they reduce the risk appetite and combine different managerial skills.

5.3.3.2 Loan Delinquency as a Function of Industry
Respondents revealed that it was of importance to partake adequate monitoring of loans and they have put up, measures to mitigate loan default from high business failure. Research done by Arko (2012) was on determining the Causes and Impact of Non-performing loans on the operations of Microfinance Institutions; A Case study of Sinapi Aba Trust (SAT).
Respondents from the research included branch managers, credit officers, recovery managers and credit risk managers. The study focused on the impact of Non-performing loans on operating profits, interest income and loanable funds that undermine the liquidity position of SAT. Other causes that were recognized by the respondents were ineffective/inadequate monitoring of loans, inadequate marketing avenues, business failure, and poor credit appraisal methods. The researcher identified service, trading, manufacturing and agriculture are the four sectors where lending is mainly focused where 90% of loans portfolio is in trade and service industry.

5.3.3.3 Improvements Made On Individual Lending

It was also revealed that no effort was put on offering financial management skills to SME owners. This contradicts previous research done by Mugambi (2010) on factors influencing loan default of small micro-enterprises financed by co-op bank. The study evaluated loan appraisal, bank factors, economic factors, business factors, borrower’s factors, interest rates and loan repayment. Findings from the research indicated that 11% of defaulters had primary level of education while the highest number of defaulters, 39% had secondary education. The number of defaulters then decreased to 28% who had diplomas and 17% had university degrees. This agrees with Hwarire (2012) results where default rate for the clients who had attained primary education was 9.76% while 62.93% had secondary level of education had defaulted, 47.71% of those with college level education defaulted while 0% of those with secondary education defaulted. This was supported by Mrope and Mhechela (2015) who indicated that lack of technical skills or management skills were significant factors that led to loan default.

5.4 Conclusion

5.4.1 Models available For Accessing Microfinance

Group lending models have been applied in the banking industry and self-selected groups have slightly higher willingness to repay. Despite this, education level is not considered in determining loan repayment. Findings revealed that loan repayment in group lending does not vary across gender. Bank has also been able to utilize qualitative information based on the character and reliability of SME owner. Analysis of individual lending’s indicated that that guarantor exerts sufficient social pressure on the client to repay. There was however a
positive relationship between the independent variables: Group lending model, relationship lending model, on the dependent variable (loan default).

5.4.2 Potential of the Models in Reducing Defaults

Analysis of group lending reducing defaults revealed that there exist penalties when fellow group members fail to repay. Group meetings have facilitated education and training of clients and this has helped in mitigating the risks associated with information asymmetry. In addition, the social pressure within groups has facilitated to repayment. For the retail customers having a relationship with their savings bank have led to a reduction in default rate. It is also of importance to have a Consumer-lender relationship which helps predict the default behavior. It is also very necessary for loan officer or personnel visit the client’s business to check on whether it is operational. Positive relationship between the models on loan default implies that all models have the potential of reducing loan defaults.

5.4.3 Improvement Needed for the Models to Counter Loan Defaults

It is important for the bank to maintain close relationships with its clients thus enable banks to assess financial and credit risks crisis. To check progress the firms, need to partake adequate monitoring of loans and they have put up, measures to mitigate loan default from high business failure. There also exist effective credit appraisal methods to mitigate loans. The result established a positive relationship credit management, loan delinquency and individual improvement thus implies that improvement in loan delinquency and individual improvement had a significant positive influence on loan default.

5.5 Recommendations

5.5.1 Recommendations for Improvements

5.5.1.1 Models available For Accessing Microfinance

Banks need to assess groups in order to benefit from self-selected groups which have been found to have slightly higher willingness to repay. Banks should also continue using qualitative information based on the character and reliability of SME owner. Guarantor also needs to exert sufficient social pressure on the client to facilitate repay. There is however a
need to vet individual borrowers more heavily than group borrowers as they are considered riskier.

5.5.1.2 Potential of the Models in Reducing Defaults

Group members should be encouraged to undertake more vetting of the individual in the group, this is because in case of defaults there is a penalty if fellow group members fail to repay. There is a need to continue undertaking regular group meetings in order to facilitate education and training of clients as well as aid in mitigating the risks associated with information asymmetry and input social pressure aiding prompt repayment. The bank also needs to encourage a good relationship with the retail customers to minimize default rate and aid in the prediction of default behavior. Loan officers must continue having personnel visit to the client’s business to check on whether it is operational to better access the chances of repayments.

5.5.1.3 Improvement Needed for the Models to Counter Loan Defaults

It is important for the bank to maintain close relationships with its clients thus enable banks to assess financial and credit risks crisis on a regular basis. There is also a need for regular visits which is important to partake adequate monitoring of loans and the measures put up to mitigate loan default from high business failure and there is a need to effective credit appraisal methods to mitigate loans. More effort should be put on offering financial management skills to SME owners.

5.5.2 Recommendations for Further Studies

This study need to be replicated in other micro finance institutions in order to establish what models are available for accessing microfinance, what potential of the models in reduce defaults or any other improvement needed for the models to counter loan defaults.

There is also need to carry out the same study in the banking industry in Kenya as a whole but by employing a different model and approach in order to test the determinants of loan defaults in the sector. The study also suggests that another study be done in the banking industry with the focus being on the customers in order to determine what factors influence loan defaults in the sector.
REFERENCES


APPENDIX I LETTER OF INTRODUCTION

Rita Gichema

United states international university

P.O BOX 14634-00800

Dear Sir/Madam,

RE: REQUEST TO PARTICIPATE IN A RESEARCH STUDY

This research project is part of my fulfillment of our clients MBA Finance programme in United States International University. Her study is to evaluate strategic models of accessing loans to counter loan delinquency, a case study of Faulu Micro Finance Bank Ltd.

The research will be conducted in Faulu Bank Head Office through filling of questionnaires by the personnel in Credit Control department. I will retain confidentiality of your views hence they will remain anonymous. Filling in the questionnaire will only take a few minutes of your time and your answers will not be judged or criticized all answers are important.

I hereby request your consent and support in answering these questions. The information from respondents will only be used for this research and other related research.

Yours Sincerely,

Rita Gichema
QUESTIONNAIRE
This section seeks some background information about you. It is important to obtain this information as it will have a bearing on the results of the survey. This information will be used for comparative purpose only. Please indicate your answer by filing in your most appropriate answer.

1. What is your gender?
   Male ( )             Female ( )

2. What is your appropriate age bracket?

   Below 20 ( )         20 to 30 ( )   31 to 40 ( )
   41 to 50 ( )         50 and Above ( )

3. What is your highest level of education qualification?

   Certificate ( )     Diploma ( )    Masters’ Degree ( )
   Vocational Training ( ) Bachelor’s Degree ( ) PhD ( )

4. How long have you been in the firm?

   Below 2 years ( )    3-5 years ( )  6-8 years ( )  Above 8 years ( )

5. How many cases of loan default do you handle per month

   Below 10 ( )         11-20 ( )      21-30 ( )      Above 30 ( )

6. What is the main model applied for accessing microfinance at Faulu bank

   Group lending ( )    Relationship lending ( ) Individual lending ( )
SECTION TWO: MODELS AVAILABLE FOR ACCESSING FINANCE

Indicate the extent to which the following models enhance access to finance. (Place a check mark in the appropriate square bracket. 1=not important at all, 2=not important, 3=neutral, 4=important and 5=very important)

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<th>Group lending</th>
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<td>7. Group size determine the repayment performance</td>
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<td>8. High repayment rates are obtained from group lenders</td>
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<td>9. Self-selected groups have slightly higher willingness to repay.</td>
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<td>10. Education level determines loan repayment</td>
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<td>11. Loan repayment varies across gender</td>
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<td>12. Banks use stress testing to determine loan risk management</td>
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<td>13. The bank uses qualitative information based on the character and reliability of SME owner</td>
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<td>14. Qualitative information is gathered from suppliers and community leaders</td>
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<td>15. Loan officers bear principle responsibility for loan decisions</td>
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<td>16. Individual lending programs use a variety of incentives such as collateral requirements, co-signers and guarantors to promote repayment</td>
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<td>17. Guarantor exerts sufficient social pressure on the client to repay</td>
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<td>18. As a bank we vet individual borrowers more heavily than group borrowers</td>
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<td>19. We charge individual borrowers a higher default premium</td>
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### SECTION THREE: POTENTIAL OF REDUCING DEFAULT

Indicate the extent to which the following models reduce loan defaults.
(Place a check mark in the appropriate square bracket). 1=not important at all, 2=not important, 3=neutral, 4=important and 5=very important

(Tick appropriately)

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<th><strong>Group lending</strong></th>
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<td>20. Group liability programs have access to credit</td>
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<td>21. individuals are penalized if fellow group members fail to repay</td>
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<td>22. Group meetings have facilitated education and training of clients</td>
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<td>23. Group lending helps mitigate the risks associated with information asymmetry</td>
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<td>24. Social pressure within groups is positively related to repayment performance</td>
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<td>25. Banks convey private information to their retail investors to ensure greater demand for loans</td>
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<td>26. Retail customers who have a relationship with their savings bank have low default rate</td>
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<td>27. Consumer-lender relationships help predict the default behavior</td>
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<td>28. loan officers’ discretion plays a role in loan default rate</td>
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<td>29. Banking relationships reduce the information asymmetries between borrowers and lenders</td>
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<tr>
<td>30. The organization provide loans only if material collateral is provided.</td>
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<td>31. clients required to build up savings before loans are advanced</td>
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<td>32. Savings is mandatory during the duration of the loan</td>
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<td>33. loan officer or personnel visit the client’s business to check on whether it is operational</td>
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SECTION FOUR: IMPROVEMENT TO COUNTER LOAN DEFAULTS

Indicate the extent to which the following factors counter loan defaults. (Place a check mark in the appropriate square bracket). 1=not important at all, 2=not important, 3=neutral, 4=important and 5=very important

<table>
<thead>
<tr>
<th>Credit Management of Small Businesses</th>
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<tr>
<td>34. we monitor loans through site visits and provide clients with incentives for timely repayment</td>
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<td>35. Close relationships with its clients enable banks to assess financial and credit risks crisis.</td>
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<td>36. We profile and evaluate risks according to the customers age</td>
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<td>37. We profile likelihood of default by gender of the customer</td>
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<thead>
<tr>
<th>Loan delinquency as a function of Industry</th>
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<tr>
<td>38. Business type is a significant determinant in loan default</td>
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<td>39. We are aware of high loan defaulters across industries</td>
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<td>40. We partake adequate monitoring of loans</td>
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<td>41. We have put up measures to mitigate loan default from high business failure</td>
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<td>42. We ensure effective credit appraisal methods to mitigate loans</td>
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<th>Individual lending</th>
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<tr>
<td>43. We are reviewing loan interest rates to minimize defaults</td>
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<td>44. We educate SME owners on how to manage loans</td>
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<td>45. We offer financial management skills to SME owners</td>
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**SECTION FIVE: LOAN DEFAULT**

Indicate the extent to which the following factors contribute to loan defaults. (Place a check mark in the appropriate square bracket). 1=not important at all, 2=not important, 3=neutral, 4=important and 5=very important

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<tr>
<td>46. Late disbursement of the loan</td>
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<td>47. Business failure</td>
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<td>48. Unfavorable payment terms</td>
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<td>49. Lack of training for the clients before and after disbursement</td>
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