BUSINESS SPECIFIC FACTORS AND MICROFINANCE CREDIT RATIONING AMONG REGISTERED SMALL AND MEDIUM ENTERPRISES IN KAKAMEGA COUNTY, KENYA

Tangara Thomas Tobias

A Thesis Submitted to the School of Business and Economics in Partial Fulfilment of the Requirements of the Degree of Master's in Business Administration (Finance) of Masinde Muliro University of Science and Technology

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DECLARATION

This Thesis is my original work prepared with no other than the indicated sources and support and has not been presented elsewhere for a degree or any other award.

……..……. Date……

Tangara Thomas Tobias

MBA/G/01-70072/2021

CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance of Masinde Muliro University of Science and Technology of a Proposal entitled, ‘‘*Business Specific Factors and Microfinance Credit Rationing among registered Small and Medium Enterprises in Kakamega County, Kenya*.’’

……..……... Date…….

Dr. Bulla Dennis

Department of Accounting and Finance

Masinde Muliro University of Science and Technology.

……..……... Date…….

Prof Robert Egessa

Department of Business Administration and Management Science

Masinde Muliro University of Science and Technology

DEDICATION

This work is dedicated to my family, my supportive wife Immaculate Wanzetse Anyama and my son Terrence Tashvin that has always been close and supportive to me during study time.

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My utmost gratitude to almighty God, for health, strength of body, mind and soul throughout my life, without whom I couldn't have come this far.

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ABSTRACT

Most businesses limit credit in order to ensure accountability. Insufficient loan facilities from financial institutions limit the full potential of small and medium-sized businesses. According to Financial Sector Deepening, enterprises SMEs get about 23.4% of all loans in the world, while big businesses get more than 70% of all loans. National and county governments continue to give money to the Kakamega Trade Development Board. Nevertheless, only 1,200 small businesses being 16.5% of the 12,108 registered SMEs in Kakamega County have gained from the Ksh 28.1million from joint SMEs board as of 2022. According to this, the Kakamega Trade Development Board and the two states are still a long way from reaching their goals. The primary goal of the study was to look into the impact of business-specific determinants on microfinance credit rationing among registered small and medium-sized firms in Kakamega County, Kenya. The specific objectives were to determine the impact of business size, collateral, and repayment capacity on microfinance credit rationing among registered small and medium enterprises in Kakamega County, Kenya, as well as to investigate the moderating effect of profitability on the relationship between business specific factors and microfinance credit rationing. Credit rationing theory, information asymmetry theory, and Financial Accelerator Theory all contributed to the study's development. This study utilized a combination of causal and descriptive research designs. The study employed primary data, which were collected by questionnaires. Cronbach alpha was used to assess reliability, while content validity was examined. Descriptive analysis consisted of frequencies and percentages, and inferential analysis included Pearson correlation and regression analysis. Data was given in tables. The study discovered that firm size influenced credit award. The results showed that there is a direct association between firm size and credit rationing (R=0.689, P=0.000), as well as collateral and credit rationing (R=0.693, P=0.000). The findings indicated that there is a direct association between repayment capacity and credit rationing (R=0.701, P=0.000). The results revealed that there is direct relationship between profitability, business specific factors and credit rationing (R=0.729, P=0.001). This implies that profitability had a significant moderating effect. This led to rejection of hypotheses H_{01}-$H_{04:}$ The analysis concludes by deriving policy and practical suggestions based on the specified objectives. It was hypothesized in the study that management of the SMEs in the Kakamega County must establish a credit policy manual that would be used in recovering the debts, regardless of the size of the organization. The management of SMEs in Kakamega County should monitor the collateral base to enhance their power of borrowing. Management of Sacco should involve stakeholders in formulating the sensitivity to repayment capacity policies. Repayment capacity increase cost of credit and therefore impede ability of borrowers to service their credit. In regard to profitability SMEs in Kakamega County should strive to make profits that would make them easily access capital and avoid excessive credit rationing shocks.

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ABBREVIATIONS AND ACRONYMS

AMFI: Association of Microfinance Institutions

CBK: Central Bank of Kenya

DTM: Deposit Taking Microfinance

MBK: Micro-Finance Bank

NACOSTI: National Commission for Science, Technology, and Innovation

NSE: Nairobi Stock Exchange

ROA: Return on Assets

ROE: Return on Equity

ROSCA: Rotating Savings and Credit Association

TRWA: Total Risk Weighted Assets.

OPERATIONAL DEFINITION OF TERMS

Business Size: This refers to business growth components such as sales turnover, capital invested and business assets.

Collateral: This refers to basic components used as security to loan measured inform of monetary value and type of collateral.

Credit rationing: This to measures taken to regulate credit borrowing and its is explained through denied credit and partial award of credit.

Profitability: This how well a firm is doing measured financially by return on assets and Net income to Equity.

Repayment capacity: This refers to client's ability to make payment for loan awarded. This is measured by cash inflows and outflows.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Credit facilitates the expansion of small businesses by permitting them to implement cutting-edge technology that enhances efficiency and make strategic expenditures (Oliveira & Fortunato, 2016). Credit rationing is influenced by business-specific characteristics, including the size of the business and the capacity to repay collateral. Both business considerations and credit rationing are directly influenced by inflation.

SMEs in developing countries face a funding gap of 2.1 to 2.6 trillion British pounds (Stein, Ardic & Homes, 2015). According to the World Bank (2015) the average contribution of funding for SMEs to total loans globally is 23.4%. The average ratio of financing to total lending for large enterprises is more than 70%. According to the World Bank (2015), a mere 43% of loan applications are approved in full each year, which highlights the precarious financial position faced by SMEs in Kenya. The rest of the applications are either rejected outright or receive far less funding than requested.

Financial services that are both sustainable and enabling are essential for micro and small businesses, especially those in developing countries, so that they can make the most of resources and reach their full potential. Okurut and Botlhole (2016), on the other hand, argue that modest loan payback capacity are typical of financing in developing nations and do not encourage long-term company development. Credit rationing occurs when the demand for credit is higher than the availability of credit, taking into account the current ability to repay. Another definition of "credit rationing" is the practice of not extending

loans to those whose repayment capacities are far higher than the market rate (Freel, 2017). The growing demand for loans by SMEs has been met by informal financial institutions in many emerging nations, even if official financial institutions have restricted SMEs' access to loans, stunting their growth. Having said that, they do lament their limited means (Atieno, 2021). Thus, credit rationing has fallen prey to microfinance institutions. Enterprises (SMEs) seem to benefit most from shorter loan terms. But if their loan terms imply they can't or won't take advantage of an investment that would benefit society, they might face credit rationing (Hoque, Sultana, & Thalil, 2016). There has been a lack of thorough theoretical and empirical research on the financial constraints faced by SMEs. According to Atieno, (2021) credit rationing is the main reason why lenders and borrowers do not have access to the same amount of information is because of the information asymmetry. Interest rates and other price mechanisms fail to maintain a stable loan market because of this. It is also impossible to give a precise explanation of the issue of financing is difficult and expensive for SMEs.

1.1.1 Business Specific Factors

Business-specific aspects refer to the internal characteristics of SMEs that might have an impact on the credit amount granted when applying for credit (Collins, 2016). These factors pertain to the scale of the firm, the assets used as security, and the duration of the payback period. It refers to the internal characteristics of SMEs that can impact the credit amount granted in a credit application (Collins, 2016). Haro, Jayaraman, and Ismail (2013) assert that credit officers consider these business-specific characteristics while deciding the loan amount for SMEs.

A major factor that determines the financial struggles encountered by businesses is their size. According to Zott and Amit (2017), large companies have more resources to cater to emerging products or activities. When such efforts are successful then they can be carried out on a much greater scale and yield profits by increasing the availability of large markets. Cerqueiro, Ongena & Roszbach, (2014) believe that SMEs are more flexible and that managers are at a closer proximity to the operational levels, which makes them take decisions in a more dynamic style. Cerqueiro et al. (2014) have found out that there is a positive association between the smaller size of business and the probability of having rationing.

Beck, Demirguc-Kunt and Maksimovic (2010) show that small firms are more disadvantaged in their operations and growth than large companies and accessibility to financial services is a major disadvantage. Beck et al. (2016) note that small firms are constantly experiencing greater difficulties in securing finance than large and medium-sized companies. Small businesses do not only face greater challenges in getting finances, but are also affected more by these limitations. Demirguckunt et al (2010) opined that the effect of funding hurdles on the development of small firms is almost twice that on large firms. As claimed by Yang (2012), credit rationing is the major challenge that SMEs encounter when seeking loans.

Collateral plays a major role in the nature of the debt contracts, facilitation of credit accessibility, and influence the lenders to monitor debtors. An increase in interest rates and stricter lending restrictions can also be gained because of the changes in legislation which diminish the value of collateral (Cerqueiro, Ongena & Roszbach, 2014). According to Gama and Duarte (2015), lenders use guarantees as a popular method of credit risk

management since the agreement between the borrower and the lender is anchored on inaccurate information.

The capacity or European power of the borrower to repay the credit on the terms of the credit agreement is known as repayment capacity. It shows chances of repaying the credit successfully. Munguti (2013) states that the possibility of reimbursement can be established through the evaluation of the income of the business and any other unforeseen sources of income that the owner can use to compensate her salary. Ngugi and Nasieku (2016) also state that when assessing small and medium-sized enterprises (SMEs), one should not only be focused on the cash flows, but on the net gain that remains in the business after adjusting family expenses.

1.1.2 Profitability

Profitability is a financial performance of a firm as measured by the evaluation of returns of the firm on assets and net income to equity. Kagondu (2022) discussed credit rationing determinants by commercial banks in Kenya. The analysis has found that there is a high and significant correlation between credit rationing and profitability. A research carried out in Kenya by Mwobobia (2012) established that most of the Kenyan financial institutions ask small enterprises to present huge amounts of collateral to access financial credit. This has led to women owning SMEs not being able to acquire loans to expand their company. Thus, most of the SMEs run by women have collapsed in their initial stages of market penetration owing to the fact that they also encounter stiff competition with other SMEs, particularly those run by men, who already have a strong presence in the market (Chu, Benzing, and McGee, 2007). The majority of financial institutions in Kenya demand the collaterals before the loans are given. Women are most often subjected to

serious difficulties when it comes to collateral as they own only one percent of registered land in the world. The researchers found that profitability and credit rationing are significantly and substantially correlated..

1.1.3 Credit Rationing

The practice of partially granting or completely rejecting loan applications from small and medium firms is known as credit rationing. Bank credit and trade credit are both said to be scarce in Canada by Cunningham (2005). Since it is tough to redirect inputs and providers have a leg up when it comes to monitoring input use, suppliers can extend credit even when banks won't. Since it is not feasible to reroute the particular things acquired on credit, he argues that trade credit is more easily accessible than bank credit. Inadequate paperwork and a lack of collateral make it difficult for SMEs in Malaysia to get loans. Without a proven track record of financial success, Malaysian SMEs have a significant challenge when trying to secure capital.

Both metric and non-metric indicators can be used to evaluate credit rationing, according to Cheng, Degryse, and Hans (2010). According to Ahiawodzi and Sackey (2013), metric measures can be obtained by comparing the exogenous credit limit to the desired loan volume or by taking the difference between the natural logarithm of the amount applied and the amount awarded; on the other hand, non-metric measures include partial loans and rejected credit applications. Because they allow for extensive econometric analysis, measures rationing of credit (Cheng, Degryse & Hans, 2010). Additionally, as Domeher, Musah, and Poku (2016) point out, metric measures may not be practical for enterprises (SMEs) in developing countries with low data resources due to a lack of easily available

data. This possibility is why the research will employ credit rationing indicators that are not metric in nature. This means that if SMEs are rejected or only given partial credit, they will be regarded as being credit rationed.

According to Bebczuk (2004), Argentinean lending institutions evaluate loan eligibility using criteria like profitability, liquidity, debt ratio, overdraft credit utilization, and increased investment in exports. You can get a loan in Japan with a complete guarantee of up to 100%. Nigrini and Schoombee (2002) referenced Levitsky and Prasad (1987). Only in settings where loan defaults are anticipated to substantially affect future credit and business opportunities is this setup acceptable, since it creates a strong incentive not to default. However, developing countries do not have the same challenges as Japan. As a result, Mazanai and Fatoki (2019) stress the need of banks being cautious with guarantee schemes and taking on some of the risk themselves. According to IFC (2015), credit restriction is a global concern, although it is more prevalent in developing countries. Borrowers in South Africa may face credit rationing if they don't have sufficient collateral, are unwilling to put their own assets up as security, haven't made a sizable personal investment, are on a blacklist, or haven't taken the time to review promising financial documents and business proposals (Angela & Motsa, 2014). According to Deakins (2018), most business failures in South Africa are caused by insufficient capitalization.

According to a report by CSO in 2008 on Botswana, companies are facing constraints in trying to access formal credit. In the report, a lack of the financial resources or equipment required to obtain loans is mostly identified. According to Ahiawodzi and Sackey (2013), the key factors that have an effect on credit rationing in Ghana include value of security, ability to repay, value of assets, value of collateral, gender, experience, age, education, net

profits, maturity, and purpose of loan application. In their research, Okurut, et al. (2016) established a relationship between the creditworthiness or the capability of borrowers to repay or the ability to repay of a loan, and credit rationing behavior of lenders in the Uganda credit markets.

Padachi (2016) says that the most prevalent problem is the lack of collateral, particularly in cases where an entrepreneur is asking operating cash. Other conditions that affect the provision of financial assistance are the placement on black list as well as lack of financial documentation. The study concluded that, on an international basis, there were a very large proportion of unsuccessful applicants whose application was justified. Padachi (2016) contend that start-ups are highly prone to the occurrence of information asymmetries and this makes it difficult to access finance and puts the start-up at a competitive disadvantage. Okurut and Botlhole (2016) claim that not all people are able to take a loan because of the affordability of the cost of credit in the institutions. Rather, they use non-price mechanisms to restrict credit they supply. These studies give a base of the reason why the study needs to be carried out with specific attention to Kenyan perspective.

The fact that small businesses in the developing countries, such as Kenya, find it very difficult to access loans is an issue Darlberg (2011) raises. Cases of defaults on financial institutions are evident in Kenya owing to lack of responsibility in lending money and poor credit management systems. This fear of default has always created credit constraint amongst many financial institutions in Kenya. Kagondu (2018) argued that the aim of the study was to investigate the causes of credit rationing. This paper concluded that the main variables that influence credit rationing involve the perceived credit risk due to the inadequate and reliable information about the creditworthiness of borrowers. The

insufficient number of profitable investment possibilities and the orientation to the determination of the balance between the assets and the liabilities were both of high importance.

The credit rationing behavior of most banks, especially in relation to historical credit rationing and the firm's level of financial gearing, is affected by qualities of a potential borrower. The age and size of the firm were significant determinants as well. Credit is being preferentially granted to larger and more established companies. This suggests that banks do not provide loans to all individuals who are capable of affording the cost of credit, but instead employ certain methods to limit the amount of credit extended, such as non-price mechanisms (Okurut & Botlhole, 2016). Loan rationing can lead to the forfeiture of certain advantages associated with prospective ventures. Both the limited allocation of credits and the enterprises that are restricted in accessing credit are unable to contribute to the creation of jobs and the reduction of poverty. However, these features are not suitable for long-term business development (Okurut & Botlhole, 2016).

1.1.4 Small and Medium Businesses

SMEs include natural person enterprises as well as legal person businesses which are small in terms of production, small workforce and assets. This group consists of small businesses, micro-businesses, family workshop businesses and individual industrial and commercial houses. Padachi (2016) explains that small and medium business (SMEs) refer to productive activities or services that are majorly performed in the informal sector. In Kenya, the government defines the classification of MSMEs on the basis of various factors in which the classification depends on the sector that the business is in, number of

employees, size of the firm and the capital invested. A micro business consists of an organization that has less than 10 employees, on the other hand, a medium business has an employee count of 50 to 99.

SMEs also play an essential role in the economic society since they play a major role in job creation, raising the well-being of people, and promoting the economy. The core activity of the company administration is financing. Laying down, sustaining, and developing of any company requires financing. However, monetary constraints hampered the performance of the firms and deterred its growth. The first hindrance to business financing is credit rationing. It arises when loans are given to a group of applicants of the loan who are otherwise identical. The ones who cannot obtain loans will not be able to borrow even when willing to pay larger repaying capacities. On other occasions there exists the scenario of borrowers who find it impossible to borrow money despite the existence of the supply of loans as well as the ability to repay them. In the Kakamega County Register of Traders, 12,108 SMEs or small and medium-sized businesses were registered in Kakamega County (2022). These SMEs mainly fall into general traders/retail services; and agricultural processors/ dealers/ exporters.

According to Mbugua and Moronge (2016), the Kakamega County Ministry of Trade has been instrumental in helping enterprises (SMEs) grow and succeed. A lending environment that supports SMEs offers credit programs with lower interest rates, as pointed out by Mwololo (2013). Grants from both the federal and county levels are still going to the Kakamega Trade Development Board, according to the Kakamega Trade Development Office (2022). The joint SMEs board in Kakamega County loaned out a total of 28.1 million Kenya shillings. As of 2022, only 2001 SMEs, or 16.5 percent of the

12,108 registered SMEs in the county, have benefited from this loan. This indicates that the various governments and the Kakamega Trade Development Board have a long way to go before they achieve their targeted aims. Previous studies on the topic of credit constraints experienced by SMEs in Kakamega County have shown that, even though there are a lot of banks in the region, the quantity of credit that banks lend out is far lower than what SMEs need. The lack of available finance is a major obstacle to the development and expansion of SMEs in the country (Itibe, 2016).

1.2 Statement of the Problem

Microfinance institutions have facilitated the achievement of financial inclusion by extending loan services to a wide range of individuals. However, the majority of financial institutions encounter capital inefficiency, which consequently leads to operational challenges in obtaining loans to achieve their objective of profitability. Many companies face credit rationing in order to ensure financial responsibility. IFC (2015) states that credit restriction is a global issue, although it is particularly prevalent in developing nations. The lack of adequate loan facilities from financial institutions hampers the ability of small and medium-sized firms to reach their full potential (Financial Sector Deepening-Kenya, 2016). The Financial Sector Deepening (2015) report states that, on average, SMEs account for 23.4 percent of overall lending worldwide, whereas major firms receive more than 70 percent of the total credit. As per the Kakamega Trade Development Office (2022), the Kakamega Trade Development Board continues to receive financial assistance from both the national and county governments. Only 16.5 percent of the entire Ksh 28.1 million are loaned by SMEs board in Kakamega County had profited as of 2022. This amounts to 2001 SMEs, which is a minuscule proportion compared to the 12,108

registered SMEs in Kakamega County. This suggests that the desired goals of the Kakamega Trade Development Board and the various governments are still a long way from being accomplished.

In a study conducted by Nyaga (2020), influence of specific business factors on loan rationing for small medium enterprises basically in Kiambu County, Kenya.

The findings revealed that the loan repayment capacity and size of the business had a positive and significant influence on credit rationing trends. However, the presence of collateral did not have a significant effect. Kagondu (2019) identified credit rationing as a significant factor, but Mutai (2020) concluded that credit rationing was not important. A study is being done to address this inconsistency. Additionally, Kagondu (2019) recommended additional research on credit rationing in microfinance in Kenya, following the completion of a study on commercial banks. The present study seeks to address the existing gap. The study aims to determine the impact of microfinance credit rationing on the financial credit rationing of small and medium-sized enterprises in Kakamega County.

1.3 Research Objectives

1.3.1 General Objective

To establish the influence of business specific factors on microfinance credit rationing among registered small and medium enterprises in Kakamega County, Kenya.

1.3.2 Specific Objectives

i. To establish influence of business size on microfinance credit rationing among registered SMEs small and medium enterprises in Kakamega County, Kenya.

ii. To determine influence of collateral on microfinance credit rationing among registered SMEs in Kakamega County, Kenya.

iii. To investigate influence of repayment capacity on microfinance credit rationing among registered SMEs in Kakamega County, Kenya.

iv. To investigate moderating influence of firm profitability on the relationship between business specific factors and microfinance credit rationing among registered SMEs in Kakamega County, Kenya.

1.4 Research Hypotheses

H_{O1}: Business size has no significant statistical influence on microfinance credit rationing among registered SMEs in Kakamega County, Kenya.

H_{O2}: Collateral has no significant statistical influence on microfinance credit rationing among registered SMEs in Kakamega County, Kenya.

H_{O3}: Repayment capacity has no significant statistical influence on microfinance credit rationing among registered SMEs in Kakamega County, Kenya.

H_{O4}: Firm Profitability has no significant statistical moderating influence on the relationship between business specific factors and microfinance credit rationing among registered SMEs in Kakamega County, Kenya.

1.5 Significance of the Study

The study can be useful to all stakeholders of microfinance organizations especially when it comes to credit rationing issues. Loan rationing to SME borrowers could also be available with reference to their capacity to repay future loans.

Managers of microfinance institutions can be advantaged to learn about the best ways of establishing credit rationing criteria. With an understanding of different opinions on the impact of firm factors on loan rationing, the microfinance firms may identify other opportunities to exploit. This discussion highlighted the successes, existing gaps, and needs that can be addressed through redesigning the way of doing business and products range of the Microfinance institutions otherwise; they would not be relied on as a tool of developing small business in future.

The study benefits the government by providing stability in the financial aspect of the Microfinance Institutions which is one of the main factors in realizing the objectives of vision 2030. SMEs can also understand the idea of credit rationing and hence plan their funds in the event of being restricted in credit access.

1.6 Scope of the Study

This research was on SMEs registered in Kakamega County. Kakamega County SMEs Report of 2022 reports that the number of registered SMEs in the county is 12,108. According to Kakamega Trade Development Office (2022), both the national and county governments are still contributing to the development of the Kakamega Trade Development Board financially. The total loan of 28.1 million Kenya shillings that was offered by the joint SMEs board in Kakamega County has only benefited 2001 SMEs which is an accounting of 16.5 percent of the entire loan amount as of 2022. This is a low percentage of the registered SMEs 12,108 in Kakamega County. The criteria that were studied were business specific, such as business size, collateral and repayment capacity. This was evaluated compared to credit rationing and profitability. The research was done

during the 2022-2023 academic year. The research focused on the business owners of SMEs therefore 12,108.

1.7 Limitations of the Study

The respondents targeted were exclusively registered SMEs in Kakamega County in Kenya. This can limit the generality of the study results. As a result, the research suggested that future research should be done in other regions in Kenya. Some respondents were found to be hesitant in answering questions. The researcher guarantees them that the findings would be used on an academic basis.

The above three business specific factors including business size, collateral, and repayment capacity can be used to explain the credit rationing phenomenon. However, the variables are not completely explaining credit rationing. Empirical studies have indicated that credit history is among the business factors, which has an impact on credit rationing. The research indicates through the study that further research using alternative dimensions of business factors should be carried out.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter has reviewed the available literature on issue under investigation as provided by various authors. Some of the features that the study examined specific to businesses were their size, collateral, ability to repay, profitability, and credit rationing. It is divided into subsections, i.e.: theoretical review and empirical reviews.

2.2 Theoretical Review

The research was based on three theories. These theories include credit rationing theory, information asymmetry theory and financial accelerator theory. The major theoretical model that is used in the study is the credit rationing hypothesis.

2.2.1 Credit Rationing Theory

The idea of credit rationing became popularized by Stiglitz and Weiss in 1981. The concept is premised on the existence of imperfect credit markets which are characterized by information asymmetry. This imbalance raises the expenses of the financial institutions to get the accurate details about the borrowers and to manage their behaviour. The credit rationing hypothesis assumes that there are many financial institutions, which maximize their profits by choosing the interest rate and the collateral and that there are also many potential borrowers, which maximize their profits by choosing the projects.

The financial institution does not know the probability of success of the projects and the enterprises have this knowledge since there is information asymmetry. Borrowers sometimes choose to change to venture investments that are considered secure where loans were given to venture investments which have high degree of risk, but which promise large rewards, although the probability of success is low. In this case, the banks normally have no control over the actions of the borrowers. When there is a failure all the projects are equally valuable (Banerjee, 2008).

Banerjee (2008) argues that lending institutions will compete by choosing borrowers according to their repayment capabilities and this will act as a screening mechanism to filter out high and low-risk individuals. It is assumed that the borrowers seek loans of fixed values to finance projects that are expected to give the same returns. In this situation, high risk profile borrowers will be ready to provide a higher repayment ability to obtain a loan. However, an increase in interest rates may lead to a reduction of the expected profits due to adverse selection effect and incentive effect. According to Banerjee (2008), the predicted profit maximized by the corporation at the repayment capability is equilibrium with credit rationing.

Lapar and Graham (1988) characterize credit rationing behaviour into three levels which are the screening stage, the assessment stage and the quantity rationing stage. At the screening phase, the manager will interview the potential borrower to determine his or her creditworthiness. Guido (2008) states that credit rationing may arise where the lending party cannot properly determine the level of risk of loan applicants particularly in the new technology. The asset base is very important in credit rationing because the power of the assets is directly related to the power to repay.

The criticism of credit rationing theory is that it primarily focuses on the allocation of existing resources by enterprises and neglects the internal generation of money (Piegay, 1999). Wolfson (1996) was among the pioneers who initially combined these two principles. According to Wolfson, financial institutions would respond to any request for credit by making appropriate adjustments to their reserves. However, the demand of the borrowers that banks attempt to fulfil is distinct from the need of the borrower. Banks will prioritize serving borrowers who are deemed creditworthy. The disparity between this particular form of demand, referred to as 'effective' demand by Wolfson, and the initial demand is understood as credit rationing. Any variable that influences banks' view of borrowers' future creditworthiness has the potential to alter the effective demand curve and thus impact loan rationing.

Credit is regulated and awarded basing on a number of factors such as ability to pay. In this context credit history is sought, stock strength and even the willingness of the borrower is assessed. It is on this basis that rationing arise. Equally size of business would tell the strength of the client as size would articulate the stock capacity, assets and even number of workers. On the other hand, profits made would tell how much to lend as it explains amount the client would manage from profits towards loan repayment and lastly collateral explains strength and safety of loan award hence explains rationing.

This theory is pertinent to the present study as it unveils business-specific characteristics that influence loan rationing, such as business size, collateral, and repayment capacity. This approach facilitated the study in comprehending the dependent variable by

examining the impact of firm-specific factors on credit rationing, therefore elucidating the rationale behind it. This theory is the most exceptional.

2.2.2 Information Asymmetry Theory

Akerlof (1970) is credited with originating the theory of asymmetrical information. It is difficult to distinguish between a good borrower and a bad one, which leads to credit problems (Richard, 2016). Financial markets exhibit information asymmetry, where certain individuals possess superior information compared to others, resulting in a non-neutral process (Richard, 2016). Inexperienced individuals often make mistakes when assessing their creditworthiness and the strength of their collateral during the loan repayment procedure. This has intensified the practice of lending non-credit rationing for banks (Beste & Bofondi, 2003). Lenders should conduct monitoring or scrutiny of borrowers to assess their capacity to manage loans. Microfinance organizations utilize information received to implement credit rationing and make informed decisions regarding loan allocation. Additionally, information asymmetry aids in distinguishing between reliable and unreliable borrowers.

This hypothesis is subject to criticism because to the possibility that some information may falsely indicate that a client possesses high character, whereas in reality the business is not performing well. Consequently, if credit is extended to such a client, they may ultimately underperform. Hence, in order to differentiate between reliable and unreliable borrowers, microfinance organizations would assess the creditworthiness of individuals applying for loans prior to making a decision.

The information given about collateral would make the microfinance firm to lend SMEs owners hence depends on given information and if not accurate leads to problems. Information availed by client on his/her payment power would prompt loan amount award. Profits based information as well as size of firm information given would gauge loaning power. Therefore, information asymmetry applies as client's information would either assist or mess hence measures for credit rationing. Hence, the study variables of loan repayment capacity and collateral are guided by the information asymmetry Theory.

2.2.3 Financial Accelerator Theory

This was developed by Bernanke and Gertler in 1989, posits that economic shocks have a significant impact on the borrowing and lending activities inside an economy. Inflation is one of the causes of economic shocks. Inflation has an impact on the ability to borrow and can potentially extend the duration of loan repayment. It directly impacts loan repayments. In times of economic downturn, lenders become apprehensive about extending loans while borrowers are more likely to default on their obligations. The shocks therefore establish the complete theoretical perspective. According to this idea, when the borrower contributes less of their own income to the project, their interests will deviate further from the interests of the external fund supplier. This leads to the need to have credit rationing to help in the effective control of economic shocks.

As the financial accelerator theory postulates, borrowers are more prone to invest in riskier ventures which have a higher probability of paying off hugely but nothing less as compared to ventures that yield lesser returns (Bernanke, Gertler and Gilchrist, 2015). Due to the economic shocks, the theory considers the possibility of borrowers not being

able to borrow and will also tend to stop repayment of their debts which ultimately leads to credit rationing (Bernanke et al., 2015).

One criticism of the hypothesis is that when economic shocks affect borrowing, inflation also affects the liquid assets and makes them attractive to borrow. This theory is important as small and medium firms and the microfinance institutions must be cognizant of economic trends and make smart decisions in connection with credit rationing.

Situations in the economy would dictate on the strength and safety of collaterals at specific moment; inflationary tendencies would add fuel to the state of loaning. Microfinance companies evaluate the borrower repayment ability and at the conclusion makes decisions of providing directions to the borrowers on the optimal methods of credit rationing. Profitability opportunities would inform economic shocks therefore rendering them hard or easy to loans. This theory is concerned with variables analysis concerning profitability.

2.3 Conceptual Review

This part describes the specific business factors which comprise firm size, collateral, and repayment capacity. In addition, it clarifies the factors of business specifics and credit rationing. The section also contain particular metrics of all the variables under discussion.

2.3.1 Business Size

Firm size is used to define the firm as a small or a large firm, which is usually determined by the total of assets that the firm has. Size is associated with the size or the magnitude of a business and this means its size or its dimensions. Companies which are more powerful or have more resources will not be easily credit rationed. The innovativeness of the SMEs is in its size, the bigger the SMEs, the simpler the repayment of the credit and the better the collateral, the bigger the SMEs take the market and make more sales on which the loan can be repaid easily. The size of the SMEs is categorized as small and medium (Javaid, Anwar, Zaman and Gafoor, 2015).

Traditionally the firms in China were categorized by the production capacity instead of the revenue or number of employees like it is the practice in the Western countries. The measures used by Dang et al. (2018) to quantify the size of a corporation were the natural logarithm of total assets, total revenues, and market value of equity. Another measurement that Odalo, Achoki, and Njuguna (2016) employ to establish the magnitude of a company is employment, invested capital, and net assets. The size of the businesses assessed in this paper was in terms of sales turnover and capital used.

2.3.2 Collateral

A collateral is a security given as security in relation to a credit being given by a lender and handed over to the lender in case the borrower does not repay the loan. Collateral is always needed by both formal and informal financial organizations in the process of guaranteeing safety of loans (Odalo, et al, 2016). This is normally in the form of residential houses or legal documents that denote ownership of immovable properties. This requirement plays a significant role in the accessibility of loans and it is especially cumbersome to the female entrepreneurs, since they might not legally own such valuable

resources as land and houses. Even though most entrepreneurs recognize the importance of loans in improving the firms, the need of collateral is a tremendous barrier to access loans and hence expansion of businesses. The collateral value and collateral type (namely movable and immovable assets) have been employed as a tool of evaluating collateral in the study.

2.3.3 Repayment Capacity

Repayment capacity refers to the capability of the Small Medium businesses to pay off the loan in the stipulated terms of the loan agreement (Nyaga, 2020). Besides, capacity is also very important in influencing how much loan instalment should be raised, how disciplined the borrower will be in his repayments, the rate of interest charged and the payback period. This study will be evaluated on the basis of the money earned and profits generated as the ability to repay. Through the analysis of the earning and profits, it is possible to identify the ability of some SMEs to pay back through the microfinance institutions. The guide gives more details on credit rationing that depends on the abilities of the person borrowing the credit and the amount of credit required. Funding is needed to increase the capacity to pay back, which is the impetus of business expansion and sustainability.

2.3.4 Profitability of the Firm

Olutunla and Obamuyi (2008) explain that any company requires financing both internally and externally to enhance profitability, which is the driving force to the growth and sustainability of any business. Fluctuations in sales may influence the profitability of an organization, and it is known as operating leverage in some cases (Singh & Pandey, 2008). The ROA is found by multiplying the net profit margin with the turnover of the asset. Two financial ratios were used to evaluate the profitability that Return on Assets (ROA), which includes net income/total assets, and Return on Equity (ROE), which includes net income /shareholders equity.

2.3.5 Credit Rationing

The outcome of loan application is credit rationing where SMEs receive or do not receive credit. Credit restriction is the situation when the demands to lend exceed those of the supply. The loan is rationed when the lenders limit the quantity of credit they provide to borrowers who have committed to repay them. This is usually undertaken in order to eliminate the aspects of adverse selection and moral hazard. The term credit rationing denotes the planned limitation of the amount of extra loans that can be provided to the borrowers, despite their readiness to repay higher rates of interest (Ata et al., 2015). The credit rationing theory assumes that the lenders cannot tell the difference in level of risks among borrowers and secondly, the loan agreements have limited liability. It means that in the case the project revenues are insufficient to cover the loan obligations, the borrower cannot have to provide further payments, at his own expense. The cases of involuntary default only are analyzed, assuming that the only cases of default of borrowers are those when they cannot repay their loans. Rationing was therefore identified according to the availability of denied or partially availed credit.

2.4 Empirical Review

The study analysed previous patterns of study, focusing on the independent variables of business size, collateral, and repayment capacity, in relation to loan rationing. The study offered information on its methodology and findings. This eventually proved beneficial in substantiating the conclusions of the current investigation. The impact of profitability on the correlation between business-specific characteristics and the restriction of microfinance lending.

2.4.1 Business Size Factor and Credit Rationing

Ata, Korps, Ugulu, and Sahim (2015) looked at how banks-imposed credit restriction and what factors were considered. Manufacturing businesses from a variety of industries made up the sample size, and a 2013 corporate loan application served as the inclusion-exclusion criterion. To find out how business size affects credit rationing, the study used logistic regression and discriminant analysis. As the firm's total yearly net sales climbed, the chance of credit rationing fell dramatically, according to the data. This study added to the work of Ata et al. (2015) by extending the scope to include all conceivable small business categories and by incorporating a modifying variable into the logistic regression.

Angori, Aristei, and Gallo (2016) conducted research along similar lines, analysing how firm-bank relationships affect loan rationing and controlling for factors like company age and size. Through impacting the depth and quality of the firm's relationship with banks, the study found that the size of a corporation indirectly affects loan availability (as shown by a probit regression model). In contrast to the previous study, which used company size as a control variable, the present investigation included company size as a predictor

variable. Furthermore, the magnitude of the variables has been categorized into small, medium, and large in this study. Nonetheless, particular size metrics, particularly sales and capital employed, were the focus of the present investigation.

Demoussis, Drakos, and Giannakopoulos (2016) examined into how sovereign ratings affected the Euro Zone's policy of lending to enterprises (SMEs). The analysis used secondary data and a probit model to show that allocation of credit varies within the Euro Zone based on the distribution of company size. Credit allocation will remain a constant as the study found that integrating enterprise factors is impossible. In contrast to the current inquiry, which made use of both mandatory and voluntary data, the previous one only used auxiliary data. The present research also used a general and moderate logit model, rather than a probit relapse criterion.

Hoque, Sultana, and Thalil (2016) studied how enterprises (SMEs) in Chittagong, Bangladesh, distributed loans. There were three types of borrowers and non-borrowers in the study: hazard proportioned borrowers, unconstrained borrowers, and unconstrained non-borrowers. A utilization multinomial logit model was used to evaluate the data. The results showed that loan allocation was unaffected by the age of the organization. Although credit rationing was classified as a binomial variable in the present investigation, credit allocation was classified as a multinomial variable in the previous one. Furthermore, by incorporating hypothesis testing, the present investigation addressed the shortcomings of the previous investigation.

Wangige, Simiyu, and Atheru (2016) found that one of the business characteristic variables that influences credit rationing is company size, and that the two have a positive

link. According to the author, a company's financial credit rationing is heavily influenced by its size. An Ordinary Least Squares pooling model was used to evaluate secondary data culled from the annual reports in the study. We used the firm's size as a function of its assets' natural logarithm and ROE and ROA as ratios to assess the severity of financial credit rationing. Natural assets were found to have a favourable and statistically significant association with financial credit rationing. The size of the assets had a considerable positive influence on the financial credit rationing too. The size was measured in the logarithm of the asset.

The significance of firm scale has been emphasized by Wepukhulu and Nyabaga (2020) in the context of a firm. The financial credit rationing favors big SMSs because they are able to take bigger deposits as compared to small businesses. This too goes to show that SMSs should regulate deposits as a result of their disproportionate impact on credit rationing.

In order to calculate the size of the SMS assets, Sporta et al. (2019) used the natural logarithm of assets. The first step that they took was to create a list of SMS assets and then compute the figure of logarithm to cover small and large numbers. Despite the fact that bigger businesses might not receive as much credit rationing, this is not always true since small businesses tend to grow bigger burdens on their financial sides. The influence of the size of the company on credit rationing has therefore become an issue of conflicting research by the experts. The size of businesses does not impact on their access to financing as revealed in a study by Niresh and Velnampy (2014). Javaid, Anwar, Zaman, and Gafoor (2015) observed that the increased costs of large enterprises had a negative impact on credit rationing.

Nyabaga and Wepukhulu (2020) examined the eight-year period between 2010 and 2018 to determine the effect of firm characteristics on publicly traded businesses' NSE financial credit rationing. Organizational traits such capital structure, asset quality, size, capital sufficiency, and return on equity (ROE) were analysed. Credit rationing was found to be positively affected by all factors, including company size, according to the study. Without considering credit rationing, the aforementioned conclusions are based entirely on company characteristics. Therefore, the results given above do not take into account the dependent variables that I examined in my study, which are the size of the firm and how it affects credit rationing.

Researchers Mboi, Muturi, and Wanjare (2018) looked at how key NSE-listed companies' financial credit rationing was affected by firm characteristics. Using pre-existing data, we examined 60 well-known companies during a 6-year period, from 2011 to 2016. The firm's size and age were the attributes that were assessed. This research built on prior work in theoretical frameworks like cashflow theory, pecking order theory, and trade-off theory. A combination of descriptive and inferential statistics were used in the statistical approach. The use of Pearson's moment correlation and multiple regressions was also executed. Two aspects of credit rationing inside firms led to the rejection of the null hypothesis about the correlation between firm age and company size. Return on equity was the primary indicator for companies' access to finance. The correlation between company size and credit restriction is the main focus of this research. But the point of this research is to find out whether and how company size affects the influence of other variables.

Khazenirazavi and Calcagno (2022) investigated how certain company traits affected credit rationing for SMEs in the European Union. Results showed a strong and statistically significant correlation between company size and lending restrictions. The effectiveness of self-rationing was investigated by Wernli and Dietrich (2021) in the context of struggling Swiss SMEs. For SMEs facing financing constraints, the chances of discouragement rather than outright rejection are six times higher. Major sources of depression include exorbitant collateral requirements, an arduous application procedure, and the dread of rejection. Using a feature of the Swiss banking domain, we discovered additional proof that a firm needs a solid relationship with its bank. The results show that discouraged borrowers are more like rejected borrowers than approved borrowers in terms of firm characteristics. Discouraged SMEs differ from their unconstrained counterparts in characteristics linked to corporate bank connection and business development, making them less similar to credit-constrained firms. Sixty percent of the disheartened companies would have been approved for a loan had they sought one, even if the conservative estimate is used. Banks and politicians should consider measures to increase SMEs' self-assurance so that they can apply for loans more easily, and the present ineffective self-rationing system should be replaced. The major reasons people get discouraged are because of the difficult application processes, the excessively stringent collateral criteria, and the fear of rejection. Credit rationing was discovered to be associated with knowledge asymmetry in a strong and statistically significant way.

Maina (2017) investigated the characteristics of businesses and the methods via which SMEs in Kirinyaga County, Kenya, were able to secure loans. Finding out which characteristics of businesses in Kirinyaga County, Kenya, are most associated with their

creditworthiness was the major motivation for the research. This research was done to investigate the impacts of access to loan by small and medium-sized businesses in Kirinyaga County on their location based on the firm location, firm size, firm age, and firm size. Theories that were applied in the investigation are some of the credit rationing theories, financial intermediation, information asymmetry and adverse selection theories. The method of research employed in the study was descriptive analysis. The literature review was mainly focused on the 356 SMEs in Kerugoya town and its surroundings. The sample consisted of 124 participants. Researchers used a purposive sample technique to pick SMEs (small and medium-sized business owners). The survey questions used in the study were closed-ended. As a pilot study, 12 owners of SMEs participated. Software such as STATA and SPSS Version 22 were used to analyse the data. Data were presented as means, standard deviations, frequencies, and percentages. Additionally, regression and correlation analysis were utilized as inferential statistics. SMEsin Kirinyaga County face challenges when trying to secure loans due to factors such as the firm's location, collateral, age, degree of compliance with government regulations, and size. Firm age, size, location, and collateral need are the variables that are examined in the study. This factor accounted for 42.2% of all factors affecting Kirinyaga County SMEs' access to financing. It is important to identify and analyse another component that accounts for 57.8% of the outcome.

Gebrekiros (2013) outlined the causes of credit rationing and how it affects micro and small businesses. Obtaining formal credit can be challenging for small and medium-sized firms (SMEs). This is because commercial banks and other financial institutions are hesitant to lend to SMEs because of concerns about information imbalance and the

inability to provide adequate collateral. The purpose of this research is to identify the elements that contribute to the fact that enterprises (SMEs) in Mekelle face difficulties obtaining loans. Using multinomial logistic regression and descriptive statistics, we analysed data from 200 businesses. The results show that microfinance groups were the source of funding for over 90% of the businesses. The interest rate that the bank has set for the businesses that have borrowed money from them is 10.85%. There were four types of credit rationing identified in the research. Of the total, 46% were people who could borrow money as much as they wanted, 26% borrowed money freely, 17% had their loan amounts limited, and 17% had their risk tolerance tested. According to the econometric study, credit rationing is unaffected by factors including gender, education level, business age, and collateral. The degree of social capital, the size of the organization, the initial investment, and the age of the owner all have a role in determining the extent to which credit is reduced. A robust and statistically significant relationship between information asymmetry and credit rationing was found in the study.

2.4.2 Collateral Factor and Credit Rationing

Nyaga (2020) also looked at the impact of company-specific variables on credit rationing of registered SMEs in the Kiambu County of Kenya. The study employed an explanatory study design and positivist research mentality. The study narrowed down to 41,115 small and medium-sized businesses operating in the Kiambu County in Kenya, but were registered. The data were evaluated using a combination of descriptive statistics and inferential statistics based on the results of a logistic regression analysis. The results of the correlation analysis proved that the company-specific attributes were independent variables that should be measured. As a result, the logistic regression analysis was

conducted with the aid of all the variables used in this study. There is statistically insignificant effect of collateral on credit rationing.

Gama and Duarte (2015) investigated how loans with collateral affected the incentives of both lenders and borrowers, and how this affected the correlation between interest rates. A closer look at the results from the UK study of SMEs shows that good borrowers choose loans with more collateral and cheaper interest rates. Clues like this show that collateral is a motivating factor in the loan market. Based on the results, it appears that personal protection is a more effective strategic instrument than commercial security, which is in accordance with signalling theory. As a long-term metric for credit distribution, the study compared legally-mandated interest rates to prime interest rates, an absolute amount. The allocation of credit in this new investigation was binary unlike the old one; thus, a value of zero (0) was used to signify a partial denial of credit and a value of one (1) was used to signify a partial provision of credit to the SME.

In the article by Hoque, Sultana, and Thalil (2016), the authors aimed to reveal the contributors of the loan rationing practice in Chittagong, Bangladesh, with particular focus on small and medium companies (SMEs). A sample of 200 businesses was in fact analysed using multinomial logistic regression and descriptive statistics. Based on the findings, 89 percent of the businesses used microfinance organizations to borrow funds. Sixty percent of the businesses obtained their loans at banks, and almost half of them obtained something smaller than they had expected. Those credit strained were separated into four categories by researchers: those (24%) who were not restrained at all, those (28%) who were constrained in some way, those (19%) who were quantity rationed, and those (29) who were risk rationed. The econometric analysis indicates that the credit rationing is not

influenced by such factors as education, age of the firm, marital status, initial outlay, the number of employees, and education. Conversely, credit rationing is also influenced by the age and sex of the people who own businesses and head of households, the luxury of the housing and working place, and the household size. The study established that there was a significant and statistically significant association between collateral and restrictions to accessing credit.

Kirschenmann (2010) has investigated the problem of loan rationing on relationships between small business banks and also discovered both positive and negative results. The report has indicated that lending to small businesses particularly the young and relatively small businesses when they first take loan with the bank is severely restricted. The rationing is worse to such companies compared to the open ones. The research also found out that the more the companies experience replenishment of loans, the less credit rationing is experienced. The study established that there was statistically significant negative association between collateral and access restriction to credit.

Okurut, Olalekan and Mangadi (2012) considered the impact of tight lending standards in Botswana on the growth of SMEs. This paper has examined the effects of accurate financial accounting and profitability on credit rationing by SMEs. The study established that there was a significant and statistically significant correlation between collateral and limitations to access to credit.

Haque Sultana and Thalil (2016) tested the variables that contribute to the limitation of credit to enterprises (SMEs) in Chittagong, Bangladesh. The study explored several

features of outcomes based on their impact, such as education degree, firm age, marital status, capital injection, number of employees, gender and education of the business owners, family head, employment and residential situations, and the family size. The study concluded that there is a significant and statistically significant correlation between collateral and limitations to credit access.

Kimutai and Jagongo (2013) examined the influence of company characteristics, the loan characteristics, and observable characteristics on credit rationing. These criteria, according to their findings, are mostly used in credit rationing. Although this research does consider information asymmetry, collateral security as well as profitability, it did not exhaust all the factors on the previous research. The study concluded that there was a significant and statistically significant connection between collateral and limitations of access to credit.

Ahiawodzi and Sackey (2013) examined the issues affecting loan rationing by the Ghanaian private sector. The main variables analyzed were borrowers habits of repayment, the value of the assets that are under collateral security, the value of the net profits, the number of years the business is in operation, sex, and age. The two studies considered various factors of credit restriction and its causes. The study also established that there was a significant and statistically relevant connection between collateral and limitations on access to credit..

2.4.3 Repayment Capacity Factor and Credit Rationing

Kagondu (2022) examined into why Kenyan commercial banks rationed loans. Finding out how commercial banks in Kenya distribute loans to clients was the primary motivation

for the research. In order to avoid using a sample, the researchers performed a thorough census of all 45 banks. One thing that the study did was use new data. Data was collected by means of semi-structured questionnaires, which were personally distributed by the researcher. In order to identify which parts were most important, descriptive statistics and factor analysis were used in the data analysis. This was accomplished by means of the SPSS (Statistical Packages for the Social Sciences) program. The majority of banks (74%) chose to limit credit availability, even for customers who were considered creditworthy, according to the report. Most restrictions took the form of giving some borrowers unlimited credit while cutting off all others, regardless of their ability to repay, from receiving any credit at all. A quarter of the banks did not set limits on the total amount of loans they may provide. But these banks were cautious about lending money to people they didn't think could repay it, so they only did so to individuals they already knew were reliable. The research showed that banks limited loan availability due to credit risk, which originated from a lack of data needed to properly evaluate borrowers' creditworthiness, a dearth of profitable investment opportunities, and the possibility of harm to their financial position. The research further found that loan denial as a form of rationing was the primary mode of operation by commercial banks in Kenya, despite applicants demonstrating the willingness to repay more energetically, whereas other borrowers obtained all the credit. The study has found that limiting entry to credit is closely related to the capacity to repay loans.

The paper by Felix and Farinha (2014) refers to a research on credit rationing among SMEs in Portugal. They aimed at coming up with a model that will assist in making predictions on the likelihood of SMEs experiencing credit rationing. To ascertain the

probability of credit disbursement, the model was experimented between the years 2010 and 2012 and the estimated coefficients were applied. The results indicated that in 2010-2012 credit allocation influenced many Portuguese SMEs. The ability of SMEs to generate income and pay a loan was also a significant determinant of the loans.

Okurut, Olalekan, and Mangadi (2011) performed a worthwhile study on the topic of credit restriction and the growth of SMEs in Botswana. Research in this area is limited in Botswana, thus this study set out to fill that gap. Its primary objective was to identify the elements that affect SMEs' access to bank loans. Over the course of eight years, data was collected. In order to analyse the data, econometric and descriptive methods were employed. Experienced SMEs were better able to keep correct financial records, handle credit rationing in their bank accounts, and generate profits, according to the study. As a result, they were less likely to be exposed to bank credit restriction. Enterprises (SMEs) need to improve their company management skills if banks will deem them creditworthy. From the perspective of SMEs, FIs should prioritize streamlining the loan processing time and lowering the cost of borrowing, particularly in relation to repayment capability. Restricting access to credit is strongly correlated with the ability to repay loans, according to the study.

Kirschenmann (2016) examined the common practice of banks imposing lending access restrictions on small enterprises. The purpose of the research was to examine how bank borrower relationships have evolved to include credit rationing. The purpose of the study was to examine the link between the amounts requested by borrowers and the amounts given by the bank in order to identify the level of credit rationing. This would be done by analysing data from loan contracts and loan applications. From April 2003 through

September 2007, a single Bulgarian bank extended 99,000 loans to small businesses. This dataset contains all of these loans. Lending to small enterprises, especially those that are young or relatively tiny when they initially borrow from the bank, is severely limited, according to the report. When opposed to more open-book companies, these ones face stricter credit restrictions. The research also showed that the level of credit rationing drops dramatically after a few loan cycles. In addition, due to the compromise of sensitive information, the replacement of loan officers led to a tightening of credit standards. Reduced limits on credit distribution within bank borrower relationships led to a significant increase in the sanctioned loan amounts over time, according to the study. The research results identified that there was an important and strong correlation between ability to make repayments and policy of limiting credit.

Balogun, Agumba, and Ansary (2020) examined the application of loan rationing to small and medium-sized construction firms by banks. To examine this issue, we applied the deductive methodology. In order to get to know more about how they experience the loan rationing, we requested 179 medium and small construction companies to complete a standardized survey. The researchers used binary logistic regression to determine the influence of various demographic factors on credit rationing. The statistical software package that we had to use was SPSS, version 22, a social science statistical software. The findings of this research indicate that SMEs are not likely to face bank credit rationing in case they are experienced in this field. When assessing small and medium sized enterprises (SMEs), banks consider three aspects, how good the businesses are in monitoring their finances, how much they control their bank accounts and their profitability. To make SMEs appear to banks as creditworthy borrowers, it is important that their financial record

keeping be improved. Banks should enhance their efficiency by increasing the speed of loan processing and reducing the cost of borrowing by the enterprises (SMEs). This program will make it easier to access bank loans by the enterprises (SMEs) in the construction industry. As stated in South African Vision 2020, this will contribute to the growth of these companies that will result in the increase of jobs opportunities, diversification of the economy and poverty eradication. The authors concluded that the practice of restricting credit was significantly and strongly related to the capability of repaying the debts.

2.4.4 Profitability Moderation on the Relationship between Business Specific Factors and Credit Rationing

Nyaga (2020) looked at how the company-related factors influence the process of loan rationing in the Kiambu County in Kenya, and to be specific, registered SMEs. The study on logistic regression analysis reveals that profitability modulating effects on company-specific variables and credit rationing exists. Subsequent studies verified that inflation levels out the equivalent connection to the statistically significant extent.

Serrano and Sackey (2017) have studied the moderating effect of profitability in the relationship between microfinance and loan rationing and other related variables. The capacity of micro, small, and medium-sized businesses (MSMBs) to access loans of microfinance institutions during the period of financial liberalization is the key focus of this study that aims at knowing the influence of various forms of microfinances on credit rationing and access. One of the sources of data that were used to prepare the study data included information that was given by borrowers during application procedures in the

credit and loan records of microfinance businesses. The results indicated the specific characteristics of companies instead of profitability as the loan rationing determinant.

Imran and Muhammad (2013) examined the key factors that affect the loan markets in Pakistan. Culling of the data was done between 1991 and 2009 based on monthly reports of Pakistani state banks, the Federal Bureau of statistics and the Economics Survey of Pakistan. The information indicates that there exists a high correlation between the credit inventory and the profitability rate. Saeed and Scheuermann (2014) carried out a comparative study to discover the influence that some budgetary advancement factors will have on the possibility of SMEs acquiring external funding. The study also used macroeconomic indicators of seven developing nations in South America and the data obtained in the review of firms in SMEs.

By the use of relapse analysis, the findings indicated that SMEs cannot utilise the loanable funds available to them less when the inflation rate of profitability is high.

To investigate the relationship between the rationing of loans and profitability in Nigeria, Akinkoye, Sanusi, and Moses (2015) applied the information provided by the Central Bank of Nigeria between 1970 and 2011. The results of the Autoregressive Distributed Lag (ARDL) bounds testing methodology and Granger causality test showed that there was no long-run relationship between profitability and credit rationing. This study has focused on considering the impact of profitability on repayment limits among SMEs, without considering the impact that any business-specific characteristics might have on loan rationing. Literature analysis revealed that the relationship between firm specific characteristics and loan rationing exists among registered SMEs in the Kiambu County, Kenya, but the present research contributed to this body of knowledge by incorporating profitability as a moderating factor.

2.5 Research Gap

Table 1: Research Gap

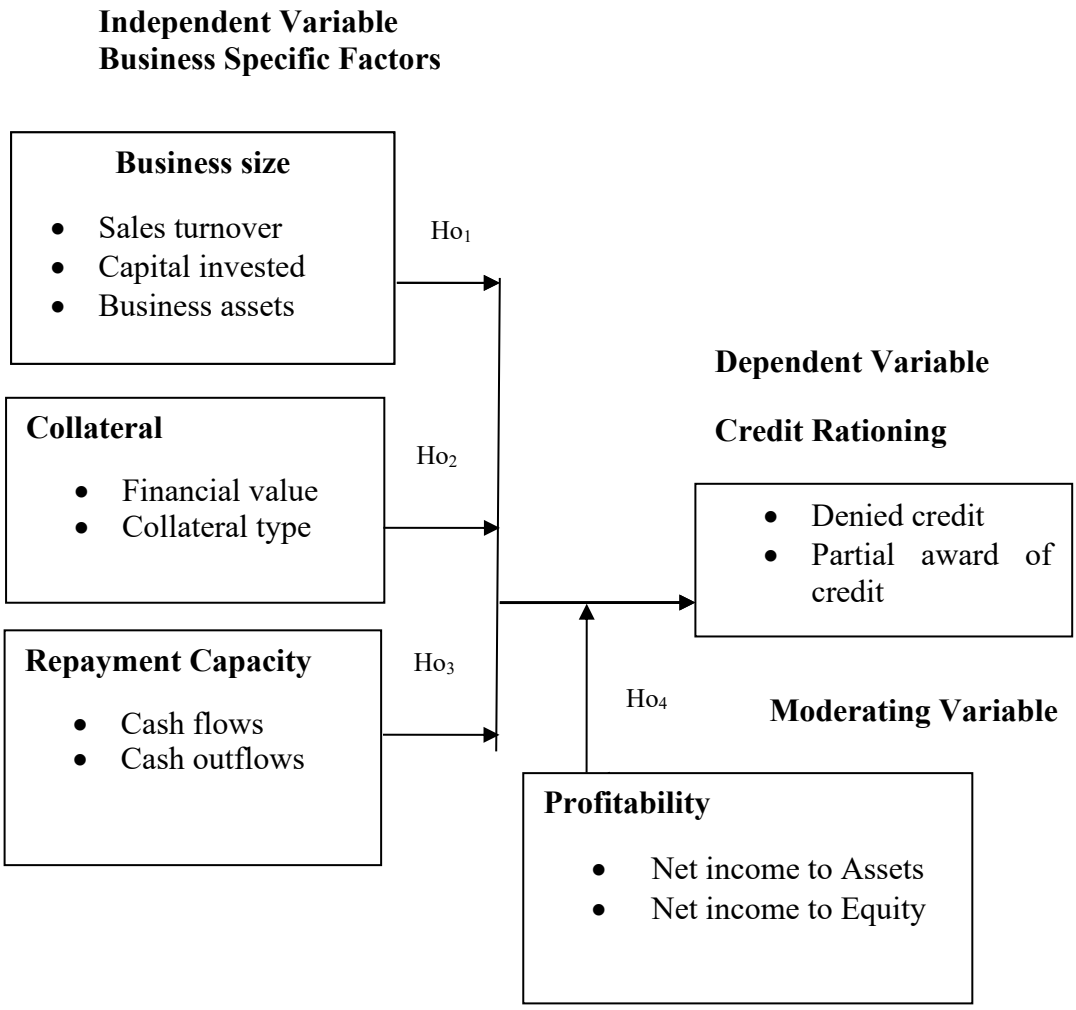
Author & Year	Title	Methodology	Findings	Gap
Balogun, Agumba & Ansary (2020)	Credit rationing among construction businesses SMEs within financial institutions	A deductive methodological approach. The structured survey questionnaire was administered to 179 construction small and medium organizations. Binary logistic regression was applied The statistical package for social science version 22 was used	The study found a positive significant relationship between business size and credit rationing.	Study was on construction businesses and not SMEs as for current study. It further generalizes credit rationing to all lending firms and not Microfinance entities
Hoque, Sultana &Thalil (2016)	Credit rationing's determinants of small and medium businesses (SMEs) Chittagong, Bangladesh	A sample of 200 firms was selected and analyzed using descriptive statistics and multinomial logit regression.	The study found a positive significant relationship between collateral and credit rationing.	The study generalizes credit rationing to all lending firms and not Microfinance entities
Kagondu (2022)	Factors influencing credit rationing by commercial banks in Kenya	A census of all the 45 banks was done hence no sampling was done in the study. The study used primary data. Semi-structured questionnaires were used in data collection and were administered by the researcher. Data analysis was through descriptive statistics and factor analysis was used to rank the factors in order of importance	The study found a positive significant relationship between repayment capacity and credit rationing.	Generalizes credit rationing to banks and not Microfinance entities. The study did not examine SMEs.

		and Statistical Packages for Social Sciences (SPSS).		
Kirschenman, (2016)	Credit rationing in small business bank relationships.	The sample consisted of 990 loans to small businesses extended by one Bulgarian bank over the period April 2003 to September 2007	The study found a positive significant relationship between repayment capacity and credit rationing.	Generalizes credit rationing to banks and not Microfinance entities. The study did not examine SMEs.
Khazeniraza vi & Calcagno (2022)	Firm characteristics and credit rationing among Enterprises in the Euro Area	Explanatory design Multiple regression and t-statistical analysis.	The study found a positive significant relationship between collateral and credit rationing.	This study was in Euro Area on Enterprises and not in Kenya and did not link SMSs role
Ayyagari, Demirgüç-Kunt, & Maksimovic, (2016)	Influence of collateral on credit rationing among microfinance firms in USA	Descriptive survey design Random sampling technique Agency theory used to ascertain credit rationing of these companies.	The study found a positive significant relationship between collateral and credit rationing.	The study was in USA and not Kenya. It concentrated on collateral and not all specific business factors.
Nyaga (2020)	Effect of business specific factors on credit rationing among registered Small and Medium Enterprises in Kiambu County, Kenya	Descriptive statistics and inferential statistics got by undertaking logistic regression analysis	Credit history, business repayment capacity and business size had a positive significant effect on credit rationing among SMEs The study found collateral to have insignificant effect on credit	The study was in Kiambu and not Kakamega. It failed to examined mixed research design .

rationing among SMEs

2.6 Conceptual Framework

This model illustrates the connections between the independent and dependent variables that the current study aims to examine. A conceptual framework is derived from ideas that are created from the researcher's own perspective (Bryman, 2003). This study aims to determine how business-specific criteria, such as the size of the business, collateral, and repayment capacity, affect the rationing of Microfinance credit. The independent variables in this context are the business specific parameters, whereas the dependent variable is Microfinance credit rationing. Additionally, the moderating variable is profitability. SMEs are the entities that borrow money, whereas small and medium-sized lenders (SMSs) are the entities that provide loans and practice credit rationing. The variables were discussed in the following manner.



Adopted from Nyaga (2012)

Figure 2.1: Conceptual framework

The variables were measured as follows: Business size measured by sales turnover, capital invested and business assets. Collateral was measured by financial value and collateral type. Repayment capacity measured by net profits generated and other income regenerated. Profitability was measured by cash inflows and outflows. Credit rationing was measured by denied credit and partial award of credit.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This level covers research design, study area, population of the study and sample size, data collection instruments, data collection procedures and data analysis.

3.2 Study Area

The focus of this investigation was on SMEs in Kakamega municipality. Kakamega, Kenya is located at latitude of 0.31 and a longitude of 34.8. Kakamega is located in the country of Kenya. Kakamega is the main and capital city of Kakamega County. The region has a total area of 3,033.8 square kilometres and a population of 1,867,579. In total, 12,108 SMEs have been registered.

3.3 Research Design

Research design plan was made to integrate the many parts of the study in a logical and consistent manner so that the research problem may be effectively addressed. Data measurement, analysis, and gathering are all made easier by the framework (Trochim & William 2006). This study utilized a mixed research design, which involved the use of both descriptive and causal research approaches. A causal research design is a form of non-experimental inquiry where researchers aim to establish cause and effect connections by creating groups of individuals or objects that either have or lack the independent variable, or have it at different levels. The researchers then assess whether these groups exhibit differences in the dependent variable. The descriptive analysis aided in elucidating

the correlation between the variables under study. Descriptive research design is ideal in observing and describing the population and study constructs. The study purposed to determine how business-specific characteristics affect the rationing of microfinance loans among small and medium firms that are registered in Kakamega County, Kenya.

3.3 Target Population

Population refers to a group of units, objects, or persons inside the universe of interest for a certain study. According to the Kakamega Trade Development Office (2022), there are a total of 12,108 SMEs registered in Kakamega County. The joint SMEs board in Kakamega County loaned 28.1 million Kenya shillings in total. As of 2022, only 2001 SMEs (16.5 percent) had benefited from this. This is a smaller percentage than the 12,108 registered SMEs in the county. This indicates that Kakamega Trade Development Board has not yet achieved their intended objectives. The study targeted SMEs business owners hence 12,108.

3.4 Sample Size

The study employed a design of simple random sampling. Sharma (2017) suggests that the precision of the estimate might be enhanced by dividing the population units into a specific number of groups.

Yamane (1967) presents a streamlined equation for determining the required sample. This formula was utilized to compute the sample population. A 95% confidence level and P =0 .05 and the formula is $n = N/1+N(e)^2$. Due to the study's characteristics, the researcher opted to choose a sample of 12,108 registered SMEs in Kakamega County.

where: n represents the size of the sample

N= Population, e= precision level

n = N/1+N(e)2

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

$$n = \frac{12{,}108}{1 + 12{,}108\,(0.05)^2}$$

$$= \frac{12{,}108}{31.27} = 387.21$$

The sample size was 387. These SMEs were attained in 8 sectors thus manufacturing, service, trading, retail, technology, creative, hospitality and Agribusiness

3.5 Data Collection Methods

Primary data involved utilization of closed-ended questionnaires, with the active participation of SME owners in completing the questionnaires. This comprised of background section as section one and business specific variables as well as credit rationing section two. Likert scale was adopted in a scale of 1 to 5. 5 where 5 represented Strongly Agree, 4: Agree, 3: Fairly agree, 2: Disagree as 1 represented Strongly Disagree. Questionnaire was self-designed focusing on designed measures capitalizing on study constructs and not adapted

3.6 Research Procedures

An introductory letter and successful completion of research proposal led to research authorization letter from the Directorate of Post Graduate Studies, which facilitated obtaining a NACOSTI license permit to carry out the research. The techniques involved the collecting of primary data, with a focus on identifying study hypotheses. Three research assistants were involved in data collection exercise.

3.7 Validity and Reliability of Research Instruments

3.7.1 Validity of Research Instruments

A number of actions were done to guarantee the validity of the questionnaires. The researcher employed expert evaluation to determine the face validity of the questionnaire. The expert review entails administering the questionnaire to a panel of specialists in the relevant subject to assess its substance and appropriateness for the study, with the supervisor also serving as an expert. Moreover, the researcher determined the construct validity in the context of making sure that the questions measure the target concepts in an accurate way (Sekaran & Bougie, 2019). This validation measure was to determine the reliability and validity of the questionnaires used in the research and therefore provide accurate and reliable data (Hair et al., 2019). Construct validity refers to how the measure acts with respect to the theoretical hypothesis as well as the ability of scores on the measure to be reflective of the theoretical construct (Sekaran & Bougie, 2019). Factor analysis was used to test construct validity. Expert judgment of supervisor and study constructs was used to measure content and face validity.

3.7.2 Reliability of Research Instruments

Cronbach alpha method of testing was used by the researcher to determine the reliability of the questionnaires. The approach was based on assessing internal consistency of the questionnaire items by measuring the level of interrelatedness. The Cronbach alpha value of 0.7 and above was considered to be satisfactory as a research tool (George and Mallery, 2020).

The researcher has used statistical software like SPSS to calculate Cronbach alpha coefficient. The analysis involved calculating the coefficient of each element of the questionnaire and the questionnaire in general. Its coefficient should have values that are more than 0.7 which is recommended.

De Winter and Dodou (2019) consider Cronbach alpha coefficient to be a popular tool in measuring the reliability of questionnaires. According to the authors, the Cronbach alpha coefficient is simple to compute and imply, and is an excellent estimation of internal consistency of the questionnaire items.

3.8 Pilot Study

A pilot study was done to establish the reliability of the questionnaires on the SMEs in Busia County because it shares the same characteristics with Kakamega County demographics. Koo and Li (2016) argue that the study should have a pilot sample that is 10 percent of the actual sample. The study used a pilot of 39 SMEs. The pilot study determined the ambiguities, biases or inconsistencies in the questionnaires. The questionnaires were refined using the feedback that was obtained during the pilot study in order to make them valid and reliable.

Ayub and Odero (2021) affirm that it is a good practice to conduct a pilot study to determine the reliability of the questionnaires before the actual study. The authors noted that the pilot study helps in identifying any problem with the questions and improving the questionnaires to help guarantee their reliability and validity. According to Wang and Wang (2019), pilot studies play a vital role in determining the reliability of the questionnaires as they can be used to identify any possible issues that might affect the quality of the collected data..

3.9 Data Analysis

Mugenda (2003) states that it is a process of structurally gathering and categorizing information with a view to extracting meaningful insights out of it. The collected data was thoroughly reviewed to make sure that it was complete, consistent, accurate, and reliable which in their turn provided the integrity of the analysis. The data was coded and cleansed to provide appropriate data in terms of entries. The information was afterwards processed, analyzed, interpreted and presented effectively with the help of SPSS and the statistical application Excel. Both descriptive and inferential statistics were used in the study. The descriptive statistics involved frequencies, percentages, mean and standard deviation. The study obtained the inferential statistics, i.e. regression and correlation analysis. Correlation that was used to measure the direction and strength of the linear relationships was used to predict the continuous outcome as regression predicts the outcome across two or more groups. Conversely, ANOVA was used to compare the means of a continuous variable in two or more variables.

Regression analyses were conducted using both simple and multivariate techniques. Using the regression line, the researcher was able to ascertain the relative importance of the independent variables in determining the dependent variable. Bivariate was for individual variables, multiple combined and hierarchical regression for moderating variable. On hierarchical model interaction terms or separate regression with moderator was involved. Pearson correlation was used to help compute coefficient of variation.

The data was presented in a multiple linear regression of:

$$\mathbf{Y= \beta 0 +\beta_1 X_1 + \beta_2 X_2 +\beta_3 X_3+\mu} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(iv)}$$

In association of moderating variable profitability, hierarchical linear regression becomes:

$$\mathbf{Y= \beta 0 +\beta_1 X_1 I+ \beta_2 X_2 I +\beta_3 X_3 I} +\mu \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(v)}$$

Where:

Y= Credit rationing

β0= Y-intercept

X1= Business Size

X2= Collateral

X3= Repayment capacity

I=Profitability

μ = Error term

β1, β2 and β3= coefficients of variables

Table: 3.1 Operationalization

Variable	Variable	Operationalization	Measurement
Dependent variables	Credit rationing	Denied credit Partial award of credit	Denied credit Partial award of credit
Independent variables	Business size	Sales turnover	Sales turnover
		Capital invested Business assets	Capital invested Business assets
	Collateral	Financial value Collateral type	Financial value Collateral type
	Repayment capacity	Cash inflows Cash outflows	Denied credit Partial award of credit
Moderating variables	Profitability	Net income to Assets Net income to Equity	Net income to Assets Net income to Equity

Source: Author (2024)

3.9.1 Diagnostic Tests

Assumptions of the regression analysis were checked by conducting diagnostic studies followed by the inferential statistics. The basic principle of the regression analysis is the linearity, which assumes that the independent and dependent variables are linearly correlated. In order to test this hypothesis, scatter plot was used to determine the association between the independent components and the dependent variable. Scatterplot which indicates a curve or non-linear relationship indicates that the assumption of linearity

is not fulfilled. The second one is the independence assumption whereby all the observations are mutually exclusive and not affected by each other. This means that the value of a given observation does not depend on the value of another observation. To test this hypothesis, a Durbin-Watson test has been done. Assuming that the tests are independent is met when the test value lies in the range of 1.5 to 2.5 (Kutner, et al., 2005). The third assumption is the assumption of normality, which is a belief that errors of the regression model take a normal distribution. A histogram of the residuals was studied to confirm this assumption. When the histogram is distributed in a Gaussian way, then the normality assumption is met. In one more method, Shapiro-Wilk test was carried out in order to check the normality.

Multi Collinearity was performed by use of Variance inflation factor of which values below 10 and tolerance values below 1 were used to indicate that there was no multicollinearity. Statistical test heteroscedacity tested by graphical technique which is plotting on a scatter graph and Breusch pagan test.

3.10 Ethical Considerations

There are several key ethical elements the researcher needs to consider during the study. Ethics involves the conscious choice of morally right and wrong actions particularly in the face of other alternatives that might involve unethical behaviour. In this academic research, the researcher made sure that integrity and confidentiality were upheld in the collection of any kind of personal information in good faith. The researcher also sought a letter of both NACOSTI and MMUST Directorate of Postgraduate Studies. The research followed the ethics as it made due recognition to all academic literature and information by citing and referencing. In administering questionnaire, the ethically responding

respondents were guaranteed anonymity and were not coerced to take part in the study but were on voluntary grounds.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents findings based on the studies four specific objectives covering descriptive, diagnostic and inferential statistics. The chapter gives answers to research objectives and hypotheses formulated. The study used quantitative analysis to investigate the association between each variable and credit rationing for enterprises (SMEs) in Kakamega County. The analysis generated descriptive statistics that facilitated easier determination of patterns and linkages, which enhanced better understanding and interpretation of the findings of the study by the researcher. It is an informative chapter as it covers various topics such as the findings of reliability, analysis of response rate, analysis of background information, diagnostic testing and the descriptive and inferential analysis of variables of the study.

4.1.1 Response Rate

A total of 387 questionnaires were given to the respondents, and only 202 respondents gave their responses. In particular, the researcher has managed to extract the information of 202 participants, which constituted 52.2 percent of the overall responses. Champion and Sear (2009) state that a response rate of 49-59 is regarded as sufficient, response rate of 59-69 is regarded as good and response rate of above 69 is regarded as exceptionally high. Since the response rate of 52.2 was over the threshold of 49, it was considered satisfactory. The study considered this response rate adequate in producing accurate findings of the study, considering the target and sample population.

4.2 Results on Reliability and Validity Testing

4.2.1 Reliability Test

Table 4. 1: Reliability of Research Instruments

Variable	Number of Items	Cronbach Alpha	Comment
Business size	5	0.781	Reliable
Collateral	5	0.833	Reliable
Repayment capacity	5	0.824	Reliable
Profitability	3	0.863	Reliable
Credit rationing	5	0.798	Reliable
Overall	**323**	**0.820**	Reliable

Source: Field Data (2024)

The research carried out the test on the questionnaire to establish the reliability and validity of the operation of the questionnaire, to be able to capture data accordingly. To determine the reliability, Cronbach alpha was computed on every variable, and it gives a result ranging between 0.774 and 0.963. The alpha score of 0.7 or above was considered to be a measure of dependability in this thesis. These values are higher than the recommended 0.7 value suggested by Nunally (1978) which is the indication of acceptability reliability. As depicted in Table 4.1, the test items were maintained and used in this research making them reliable..

4.2.2 Validity Test

The questionnaires were designed with the help of the supervisor of the researcher to check content validity. The recommendations of the supervisor resulted in the improvements of the contents and perceptions of the devices. Choosing the questionnaire was made to be such that every item can be relevant and related to the overall purpose of

the questionnaire. This has made it so that any questions related to the research were covered. The recommendations of the supervisor were incorporated in the questionnaires before the actual presentation of the questionnaires to the subjects.

Table 4. 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.809
Bartlett's Test of Sphericity	Approx. Chi-Square	912.912
	Sig.	.000

Source: Primary Data (2024)

The KaiserMeyerOlkin (KMO)-Measure of Sampling Adequacy is a measure of suitable data used in performing a factor analysis. The factor analysis suitability is within the range of 0-1 whereby a value that is nearer to 1 means a high factor analysis suitability. The KMO value of 0.809 in this case shows that the data is fit to factor analysis. It indicates that the variables in the data set are correlated enough to make meaningful interpretation. The test statistic obtained is 912.912. The value of the significance of the000 denotes that the correlation matrix is quite different than an identity matrix, which means that the variables are related and suitable to be analyzed through factor analysis..

Table 4.3: Communalities

Communalities	**Initial**	**Extraction**
The size of business has occasionally made us fully denied credit.	1.000	.815
The size of business has occasionally made us partially denied credit	1.000	.722
The type of collateral has occasionally made us fully denied credit	1.000	.773
The repayment capacity has occasionally made us fully denied credit	1.000	.606

The repayment capacity has occasionally made us partially denied credit	1.000	.903

Extraction Method: Principal Component Analysis.

Source: Primary Data (2024)

The first communalities of all the variables are 1.000, which means that all the variables initially accounted all the variance of themselves. The values of the communalities obtained following the extraction vary between.606 and.903, implying that the extracted items explain a considerable percentage of variation of each variable. Higher communalities show that the extracted components are a good representation of the variable whereas lower communalities mean that there could be other variables that are affecting the variable. On the whole, these findings indicate that the factors can be analyzed further because the components obtained justify a high level of variance in each of these variables.

Table 4.4: Component Matrix

	Component Factor Loadings
The size of business has occasionally made us fully denied credit.	.923
The size of business has occasionally made us partially denied credit	.850
The type of collateral has occasionally made us fully denied credit	.879
The repayment capacity has occasionally made us fully denied credit	.778
The repayment capacity has occasionally made us partially denied credit	.917

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

Source: Primary Data (2024)

These results provide the factor loadings of each variable having performed Principal Component Analysis (PCA) to develop components. Factor loadings indicate the relationship of each variable and the extracted component. According to them, they show the strength and direction of the relation between the variables and the factors behind them that are identified by PCA. Greater factor loadings reflect greater variables-component associations. Here, the loading of the factor was .778 to.923 of the single factor extracted that were high (greater than .4). The correlation of all the variables with the component extracted is very high, which indicates that all the variables are strongly related to the underlying factor, which has been identified by PCA. This implies that the identified element is a coherent construct that embodies several elements of credit rationing.

4.3 Respondents Background data

The respondents were asked to provide the information about their Sacco membership, time of their membership in the Sacco, their sex, education, age, and the period of their Sacco membership. The analyzed data provided some results, as they are provided in Table 4.5.

Table 4.5 Age of the Respondents

		Frequency	Percent
Valid	25-34 years	2	1.0
	35-44 years	28	13.9
	45-54 years	96	47.5
	55 years and above	76	37.6
	Total	**202**	**100.0**

Source: Field Data (2024)

According to the data presented in Table 4.5, the proportion of the participants aged 55 years and more was 37.6% (76), the proportion of participants aged 45-54 years was

45.7% (96), 13.9% (28) was 35-44 and 1% (2) was 25-34. The age group shows that most of the members are of older age which assumes that they would be more knowledgeable about the specific factors which affect credit rationing in business.

Table 4.6 Working experience

		Frequency	Percent
Valid	Less than 1 year	14	6.9
	1-2 years	19	9.4
	3-5 years	169	83.7
	Total	202	100.0

Source: Field Data (2024)

The table presented in Table 4.6 demonstrates that, 83.7 (169%) of the participants had 3-5 years of experience, 19 (9.4) participants had 1-2 years of experience and 14 (6.9) participants had less than 1 year of experience in Small Medium enterprise (SME) businesses. The level of expertise that was learnt was adequate to understand the unique aspects of company, especially with the aim of credit rationing.

Table 4.7: Education Level of the Respondents

		Frequency	Percent
Valid	Degree	2	1.0
	Diploma/Certificate	47	23.3
	Secondary	141	69.8
	Primary	12	5.9
	Total	202	100.0

Source: Field Data (2024)

Table 4.4 shows that the results of the questionnaires indicated that 141 people (69.8) had secondary education, 47 people (23.3) were diploma and certificate holders, 12 people

(5.9) were primary education people, and 2 people (1%), were degree holders. The level of education was well-equipped to understand the complexity of the factors in business especially to make credit decisions in credit rationing.

4.4 Descriptive Statistics

The research involved the presentation of descriptive statistics through a quantitative approach to the reviewing of the data. Focusing on the objectives, the study considered the data in order to highlight the relations. The research questions are suitable to the study objectives. The respondents were to establish their degree of agreement with five statements on a scale between strongly disagree (1) and strongly agree (5).

4.4.1 Descriptive Statistics for Business Size

The participants were requested to express their degree of concurrent on a scale ranging from strongly disagree (1) to strongly agree (5) about eleven statements pertaining to Business Size. This is presented in Table 4.8.

Table 4.8: Business Size

	Business size	5	4	3	2	1	M	S.D
1	My business sales turnover has led to positive credit rationing from microfinance institutions.	19 (9.4)	28 (13.9)	62 (30.7)	93 (46)	0 (0)	4.18	0.94
2	My business sales trajectory has led to positive credit rationing from microfinance institutions	38 (18.8)	6 (3)	62 (30.7)	2 (1)	94 (46.5)	3.91	1.89
3	My business investment has led to positive credit rationing from microfinance institutions	38 (18.8)	62 (30.7)	8 (4)	94 (46.5)	0 (0)	4.17	0.90
4	The capital employed in business has led to positive	4 (2)	68 (33.7)	48 (23.8)	82 (40.6)	0 (0)	4.13	1.83

	credit rationing from microfinance institutions							
5	My business asset composition has led to positive credit rationing from microfinance institutions.	47 (23.3)	28 (13.9)	66 (32.7)	59 (29.2)	2 (1)	4.27	1.85

Source: Field Data (2024)

Based on the research findings, 19 respondents (9.4%) strongly agreed that the business sales turnover has resulted in favourable loan rationing by microfinance organizations. A total of 28 individuals, which accounts for 13.9% of the participants, concurred with the identical statement. Furthermore, a significant proportion of the respondents (30.7%) expressed neutrality, while a majority (46%) strongly disagreed with the notion that regular evaluations on collection practices are conducted within the business to enhance the status of credit management. The organization's business sales turnover, which had a mean of 4.18 and a negligible standard deviation of 0.94, resulted in favourable credit rationing.

The results, however, showed that 38 (18.8) of the respondents were strongly in favour of the view that the sales trend that the business has adopted has led to good loan rationing by microfinance institutions, with 94 (46.5) respondents strongly disagreeing with this point of view. The sales trend of the company with an average of 4.13 and the standard deviation of 1.89 has led to the introduction of positive credit limits by the microfinance institutions.

Concerning the statement that investment by the company has led to positive loan rationing by microfinance organizations, 38 people (18.8) said that they agreed whereas 62 people (30.7) strongly agreed. Favourable credit rationing was not achieved as a mean of 4.13 and a low standard deviation of 0.90 on business investment.

Besides, 33.7% of the respondents strongly agreed that the amount of capital invested in business led to favourable rationing of loans by microfinance organizations. This was upheld by 68 participants. In this way, the standard deviation of 1.83 as well as the average figure of 4.13 shows that the capital input in the business also led to the good credit rationing.

Concerning the effect of the business asset composition on credit rationing by microfinance organizations, 47 people (23.3) strongly agreed whereas 28 people (13.9) also agreed. Therefore, the statistics reveal that the mean figure of 4.27 and high standard deviation of 1.85 displays that the firm asset mix has led to favourable credit rationing by microfinance organizations. This observation aligns with the research carried out by Ata, Korps, Ugulu, and Sahim (2015), who examined the criteria adopted by banks in the application of credit rationing measures and found firm size to be an influential factor.

4.4.2 Descriptive statistics for Collateral

Quantitative methods were implemented to analyse the data and generate descriptive statistics in this study. Descriptive statistics were employed to derive conclusions and formulate generalizations regarding the correlation between credit rationing and collateral. The participants were asked to indicate their level of agreement with five statements regarding capital sufficiency on a scale that ranged from strongly disagree (1) to strongly agree (5). The results are displayed in Table 4.9.

Table 4.9: Collateral

	Collateral	5	4	3	2	1	M	S.D
1	The monetary value of the business collateral has determined credit amount I receive from microfinance institutions.	74 (36.6)	62 (30.7)	0 (0)	49 (24.3)	17 (8.4)	4.07	1.782
2	The business stock has determined credit amount I receive from microfinance institutions.	44 (21.8)	8 (4)	57 (28.2)	91 (45)	2 (1)	4.18	1.833
3	The business license has determined credit amount I receive from microfinance institutions.	85 (42.1)	53 (26.2)	13 (6.4)	51 (25.2)	0 (0)	4.00	1.720
4	The type of collateral has always determined credit amount I receive from microfinance institutions.	30 (14.9)	41 (20.3)	115 (56.9)	16 (7.9)	0 (0)	3.84	1.923
5	Failure to pay credit on time has led to loss of collateral from microfinance institutions.	28 (13.9)	75 (37.)	0 ()	68 (33.7)	31 (15.3)	3.96	1.79

Source: Field Data (2024)

The study concluded that the monetary worth of the business collateral directly influenced the lending amount that microfinance institutions provided. 74 individuals, or 36.6% of the total, strongly agreed with the statement, while 62 individuals, representing 30.7%, agreed with it. The company collateral's credit amount from microfinance institutions was determined based on a mean of 4.07 and a substantial standard deviation of 1.782.

However, the findings indicated that 44 (21.8%) of the participants highly agreed that monitoring the inventory of their firm has influenced the quantity of credit they obtain from microfinance organizations. The firm stock's credit amount received from microfinance institutions is influenced by its mean of 4.18 and large standard deviation of 1.833.

According to the data provided, 85 persons (42.1% of the respondents) agreed that the company license has influenced the quantity of credit they obtain from microfinance organizations. The statement received a mean score of 4.00 and a substantial standard deviation of 1.720, indicating that the credit amount received from microfinance institutions is determined by the company license.

It is commonly stated that the type of collateral has always been the determining factor in the credit amount that members obtain from microfinance firms. 30 individuals, or 14.9% of the total respondents, expressed strong agreement with the statement. Given a mean of 3.84 and a considerable standard deviation of 1.923, it is possible to compute the amount of cash to be lent as security.

In addition, 13.9% of participants strongly agreed that failing to make timely credit payments resulted in the loss of collateral from microfinance institutions. Consequently, when the average credit payment delay is 3.96 and the standard deviation is 1.79, microfinance institutions experience a loss of collateral.

4.4.3 Descriptive statistics for Repayment capacity

The study utilized a quantitative methodology to analyse the data and present descriptive statistics. Descriptive statistics were employed to derive conclusions and form

generalizations regarding the relationship between Repayment capacity and credit rationing. The participants were directed to assess their level of concurrence on a scale that spans from strongly disagree (1) to strongly agree (5) regarding 5 items pertaining to Repayment capability charged.

Table 4.10: Descriptive Results for Repayment capacity

	Repayment capacity	5	4	3	2	1	M	S.D
1	The net profit records have always determined credit amount I receive from microfinance institutions.	10 (5)	85 (42.1)	81 (40.1)	26 (12.9)	0 (0)	4.21	1.02
2	Other income generating activities records has always determined credit amount I receive from microfinance institutions.	21 (1)	28 (13.9)	67 (33.2)	58 (28.7)	47 (23.3)	3.78	0.86
3	The loan repayment history has always determined credit amount I receive from microfinance institutions	59 (29.2)	57 (28.2)	70 (34.7)	16 (7.9)	0 (0)	4.10	1.00
4	The amount of credit sought has always determined level of credit rationing I receive from microfinance institutions.	4 (2)	57 (28.2)	70 (34.7)	16 (7.9)	0 (0)	3.91	1.93
5	The loan repayment schedule has always determined credit amount I receive from microfinance institutions.	41 (20.3)	67 (33.2)	0 (00)	65 (32.2)	29 (14.4)	3.72	1.97

Source: Field Data (2024)

Based on the research findings, 85 individuals (42.1%) agreed that the net profit records consistently influence the credit amount they receive from microfinance institutions. The net profit records have consistently determined the credit amount received from microfinance organizations, with a mean of 4.21 and a large standard deviation of 1.02. However, the findings indicated that 28 (13.9%) of the participants strongly concurred that the records of their other income-generating activities consistently influenced the quantity of loan they obtained from microfinance institutions. The data shows that the

mean credit amount is 3.78, with a standard deviation of 0.86, which indicates that the records of other money generating activities consistently identify the credit amount. As shown in the chart below, 29.2 percent of the survey respondents indicated that their loan repayment record has always determined the amount of credit they take out of micro finance companies. It means that the standard deviation of 1.90 was significant and the mean of the statement was 4.10, which means that the relationship between credit amount and loan payback history has always existed.

The amount of credit rationing that they received with the microfinance organizations has always been determined by the amount of credit requested. 57 people representing 28.2 percent of the overall number of people responded strongly to the statement. The amount of credit requested controls the credit ration that individuals would obtain as shown by mean of 3.91 and large standard deviation of 1.93.

Further, 20.3 percent of the respondents were categorical in their views that the loan repayment schedule is the only factor that dictates the amount of credit that a microfinance organization will give them. Therefore, the loan repayment plan which is characterized by a mean of 3.72 and a large standard deviation of 1.97 is a decisive factor in establishing the credit amount that members would receive..

4.4.4 Descriptive statistics for Profitability

Table 4.11: Profitability

	Profitability	5	4	3	2	1	M	S. D
1	Our net income sustains business operations	2 (1)	53 (26.2)	53 (26.2)	56 (27.7)	40 (19.8)	4.21	1.07
2	The asset level determines credit qualifications	70 (34.7)	2 (2)	30 (14.9)	98 (48.5)	2 (1)	4.06	1.07

3	Our business returns sustain business operations	2 (1)	6 (3)	47 (23.3)	87 (43.1)	60 (29.7)	4.27	0.99

Source: Field Data (2024)

The study found out that 53 respondents (26.2) greatly agreed that the net income is required to sustain the business activities. The net income is able to sustain the corporate operations as shown by a mean of 4.21 and a standard deviation of 1.07 which is significant.

Nonetheless, the results revealed that seventy five (34.7) of the respondents revealed very strong agreement with the statement that credit qualification is based on the amount of assets. The credit standards are set based on the level of asset which has a mean of 4.06 and a significant standard deviation of 1.07.

As illustrated in the above table, 6 people who make 3 percent of the total population expressed agreement on whether or not business returns could be used to finance business activities. The mean score of the statement was 4.27 and the standard deviation was minimal at 0.99, which implies that business returns can contribute to the continued business operations.

4.4.4 Descriptive statistics for Credit rationing

Table 4.12: Credit rationing

	Credit rationing of SMEs	**5**	**4**	**3**	**2**	**1**	**M**	**S. D**
1	The size of business has occasionally made us fully denied credit.	19 (9.4)	28 (13.9)	62 (30.7)	93 (46)	0 (0)	4.18	1.94
2	The size of business has occasionally made us partially denied credit.	10 (5)	85 (42.1)	81 (40.1)	26 (12.9)	0 (0)	4.21	1.02
3	The type of collateral has occasionally made us fully denied credit.	21 (1)	28 (13.9)	67 (33.2)	58 (28.7)	47 (23.3)	3.78	1.99
4	The repayment capacity has occasionally made us fully denied credit.	2 (1)	53 (26.2)	53 (26.2)	56 (27.7)	40 (19.8)	4.21	1.07

5	The repayment capacity has occasionally made us partially denied credit.	2 (1)	2 (2)	30 (14.9)	98 (48.5)	70 (34.7)	4.06	1.07

Source: Field Data (2024)

The research revealed that 19 members (9.4%) concurred that the scale of their business has occasionally resulted in them being denied credit in full. The firm size, characterized by a mean of 4.18 and a significant standard deviation of 1.94, has occasionally resulted in complete denial of credit for its members.

However, the results indicated that 85 individuals, accounting for 42.1% of the respondents, agreed that the size of their business has at times resulted in them being partially denied credit. Due to the business's mean size of 4.21 and a substantial standard deviation of 1.02, we have periodically faced partial denial of credit. According to the data provided, 28 individuals, accounting for 13.9% of the total, agreed that the kind of collateral has sometimes resulted in a complete denial of credit for us. The average score of this statement was 3.78, with a considerable standard deviation of 1.99. This indicates that the salary of personnel in my deposit taking Sacco is sufficient. The declaration indicates that their repayment capabilities have at times resulted in their being completely denied credit. 53 individuals, which is 26.2% of the total, expressed strong agreement with the statement. The data indicates that the average repayment capability was 4.21, with a notable standard deviation of 1.07. This suggests that there were instances where individuals were completely denied credit due to their inability to repay.

In addition, the claim that the repayment capacity had sometimes led to partial credit denial to members. The mean of 4.07 together with high level of standard deviation of 1.03 meant that the ability to repay has sometimes cost members credit to some extent.

4.6 Diagnostic Test for Linear Regression Analyses

4.6.1 Normality Test

Statistical errors are regularly found in the literature. Many parametric techniques, like as the t-test, analysis of variance, correlation, and regression, rely on the assumption of a normal or Gaussian distribution. If this assumption is incorrect, the outcome cannot be trusted. The Shapiro-Wilk test uses data and the accompanying normal scores. The Lilliefors correction increases the statistical power of the Shapiro-Wilk test.

According to Ghasemi and Zahedias (2012), one common way to determine if something is typical is to apply the Kolmogorov-Smirnov test. Lilliefors, is notoriously sensitive to outlying results. Due to its limited power, this method should not be given significant consideration when testing for normalcy, especially when parameters are calculated from the data regardless of the sample. The Kolmogorov-Smirnov test should be used with caution owing to its low sensitivity to non-normality. Instead, it is desirable to visually examine the normality of the data. The level of significance was below 0.05, and we rejected the null hypotheses of all the variables. Elliot and Woodward (2007) also explain that parametric methods may still be used when the data is not normally distributed.

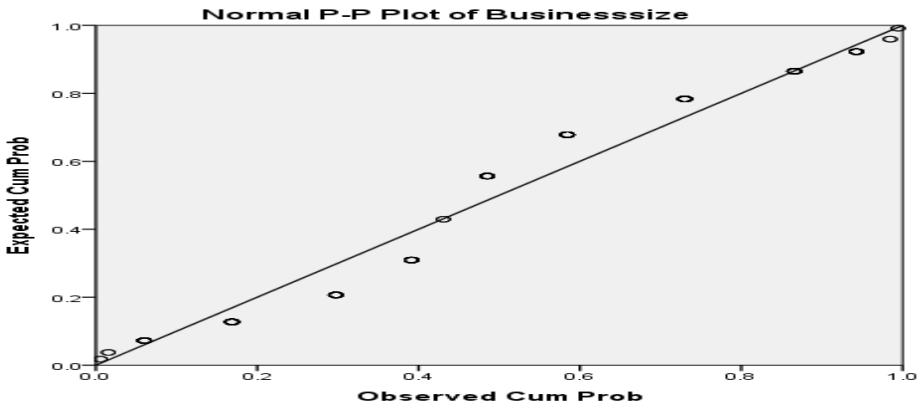
Table 4.13: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	**df**	**Sig.**	**Statistic**	**Df**	**Sig.**
Business size	.226	202	.000	.755	202	.000
Collateral	.291	202	.000	.927	202	.000
Repayment capacity	.236	202	.000	.749	202	.000
Credit rationing	.289	202	.000	.666	202	.000

a. Lilliefors Significance Correction

Source: Field Data (2024)

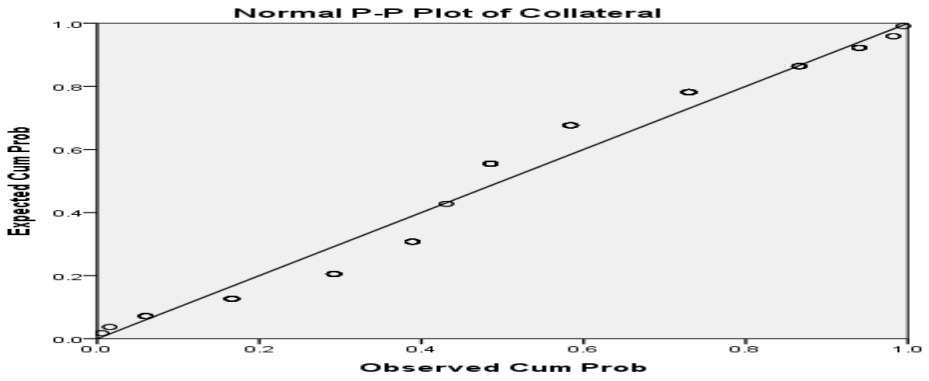
In their work "Normality Tests for Statistical Analysis: A Guide for Non-Statisticians," Ghasemi and Zahedias (2012) propose that visual evaluation should be employed to measure normalcy. Oztuna, Elhan, and Tuccar (2006) state that if the sample size is big (less than 30 or 40), the deviation from the assumption of normal distribution is not likely to have substantial effects. Parametric techniques are suitable for large samples (less than 30 or 40). Based on the above data, it can be inferred that normality did not satisfy the requirements, as the significant values were below the threshold of 0.05. Nevertheless, the P-P plot, which measures the departure from normality, showed that it was not statistically significant, as it closely matched the line of best fit. As a result, the data had a distribution that nearly resembled a normal distribution, which made it appropriate for regression analysis.



Source: Field Data (2024)

Figure 4.1: Normal P-P plot for Business size

The P-P plot of the business size as shown in table 4.1 showed a slight violation of the normalcy, in regards to the line of best fit in the plot. It is reasonable to use parametric methods such as correlation, regression, analysis of variance, and t-tests to analyze the data since the data is approximately distributed regularly..

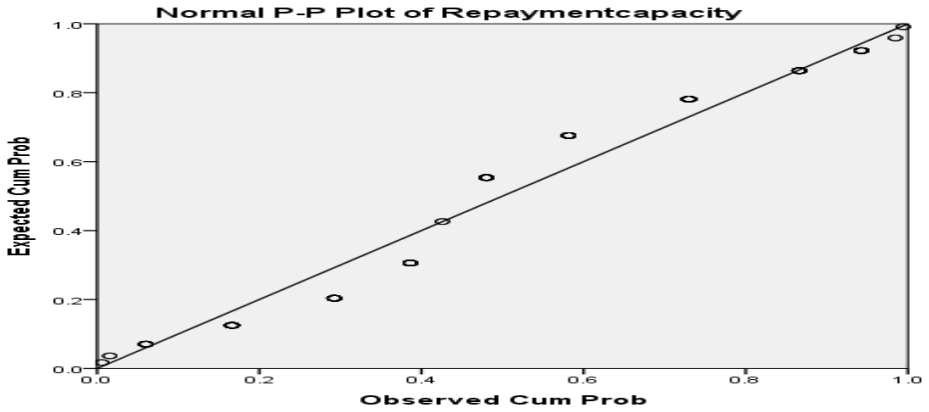


Source: Field Data (2024)

Figure 4.2: Normal P-P plot for Collateral

The P-P plot of the collateral as indicated by table 4.5 displayed a slight deviation in the normality compared to the line of the best fit on the P-P plot. Since there is a fair

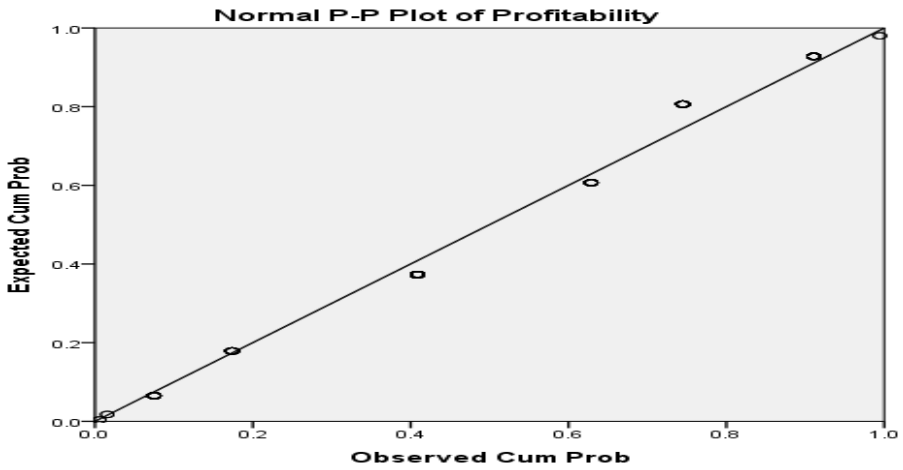
assumption of normal distribution of the data, then it is appropriate to use parametric statistical procedures including correlation, regression, analysis of variance and t-test.



Source: Field Data (2024)

Figure 4.1: Normal P-P plot for Repayment capacity

However, the Normal P-P plot of repayment capacity at table 4.5 indicates that there is a slight non-observance of normality in the process of approximating the line of best fit on P-P plot. Because the data is close to normal distribution, it can be considered that we can use parametric methods when analyzing the data such as correlation, regression, analysis of variance, and t-tests.



Source: Field Data (2024)

Figure 4.4: Normal P-P plot for Profitability

Table 4.5 of the P-P plot indicates that the estimation of the line of best fit is slightly non-normal in the P-P plot of profitability. As the data will be of close approximation of a normal distribution, the use of a parametric method of data analysis including correlation, regression, analysis of variance, and t-tests can be adopted.

4.6.2 Multi-collinearity Test

Multi-collinearity is the existence of a strong association between two or more independent variables. The higher the multi-collinearity, the more it causes variation in the coefficient of regression and therefore make it difficult to use coefficient as a reliable indicator of predictive factors (Cooper and Schindler, 2011). The variance inflation factors (VIF) or tolerance values were estimated in order to establish the existence of multi-collinearity. The value of VIF below 10 means that there is no multicollinearity. On the same note, when the tolerance values are equal or less than one, then it is also an indication that there is no multicollinearity.

Table 4.54: Collinearity Statistics

Variable	Tolerance	VIF
Business size	.207	4.831
Collateral	.402	2.486
Repayment capacity	.611	1.637

Source: Field Data (2024)

The findings of the multi-collinearity test conducted on this study are illustrated in figure 4.14. The values of tolerance were less than 1 with 0.207 to 0.611 being the average. Therefore, the VIF, the inverse of tolerance, was between 1.637 and 4.831. All of these

values are less than 10, and this is the minimum acceptable value. The data collection seems not to have any multi-collinearity.

4.7 Pearson Correlation

The Pearson product-moment correlation coefficient (r) was used to find the bivariate correlation, which shows how two factors are related to each other. Between -1 and 1, which are the ranges of r numbers, there is no correlation and there is perfect correlation. The strength of the linear relationship between two variables is shown by this number. Table 4.15 shows the results of the study that looked at correlations.

Table 4.15: Correlations Analysis

Correlations					
		Business size	Collateral	Repayment capacity	Credit rationing
Business size	Pearson Correlation	1	.799**	.720**	.689**
	Sig. (2-tailed)		.000	.000	.000
	N	202	202	202	202
Collateral	Pearson Correlation	.799**	1	.787**	.693**
	Sig. (2-tailed)	.000		.000	.000
	N	202	202	202	202
Repayment capacity	Pearson Correlation	.720**	.787**	1	.701**
	Sig. (2-tailed)	.000	.000		.000
	N	202	202	202	202
Credit rationing	Pearson Correlation	**.689****	**.693****	**.701****	**1**
	Sig. (2-tailed)	**.000**	**.000**	**.000**	
	N	202	202	202	202

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

Credit rationing was significantly predicted by business size ($r = 0.689$, p-value = $0.000 < 0.05$) according to the results shown above. Consequently, a larger Business size results in a higher degree of credit rationing. The study agrees with Wangige, Simiyu, and Atheru (2016) who found that one of the business characteristic variables that influences credit rationing is company size, and that the two have a positive link. Wepukhulu and Nyabaga (2020) underscored the importance of firm scale in the context of a company. Conversely, there was a strong and meaningful association between collateral and credit rationing, as indicated by a Pearson correlation coefficient of $r = 0.693$, with a p-value of $0.000 < 0.05$, which is statistically significant at a significance level of 0.05. This is an indication that as the quantity of collateral goes up, there is also a corresponding increment in the credit rationing practices. This is in agreement with a study undertaken by Hoque, Sultana, and Thalil (2016) aimed at discovering the factors that lead to the practice of loan rationing in Chittagong, Bangladesh, and specifically to the small and medium companies (SMEs).

The study revealed that there was a statistically significant, significant connection between collateral and restrictions to access to credit. The findings also supported the fact that ability to repay at a significance level 0.05 was a significant variable used to measure credit rationing ($r = 0.701$, p-value = $0.000 < 0.05$). Increase in the repayment capacity leads to increased credit rationing. This research paper shows that there are business-specific criteria that significantly affect credit rationing within the SMEs within Kakamega Town in a positive manner. This is in accordance with the results presented by Angori, Aristei, and Gallo (2016), who did a research on how firm-bank relationships influence the loan rationing, considering the business parameters like age and size.

4.7 Linear Regression Analyses

A regression analysis was used to determine the effect of independent variables on the dependent variable. Noteworthy findings of the research are the correlation coefficient (R) and the determination coefficient (R squared) that are both statistical significance measures. B coefficients, F statistics and Significance level (P-value) were also significant. To test the hypothesis, the beta correlation coefficient (β) was used in the research. Under the test conditions, the null hypothesis will be rejected in case the β coefficient has been shown to be significant. Carolyn, Robert, and Ayub (2020) suggest that null hypothesis is not rejected when the β coefficient has not been statistically significant when exhibited across the t-statistics..

4.7.1 Influence of Business Size on Credit Rationing among registered SMEs in Kakamega Town

A regression study was performed to determine the impact of business size on loan rationing among officially registered medium-sized enterprises in Kakamega Town. Table 4.16 shows the results.

Table 4.16: Influence of Business Size on Credit Rationing among registered SMEs in Kakamega Town

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2	Sig. F Change
1	.689[a]	.474	.472	.68260	.474	180.385	1	200	.000

a. Predictors: (Constant), Business size

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	84.049	1	84.049	180.385	.000[b]
	Residual	93.189	200	.466		
	Total	177.238	201			

a. Dependent Variable: Credit rationing

b. Predictors: (Constant), Business size

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.032	.275		-.118	.907
	Business size	1.035	.077	.689	13.431	.000

a. Dependent Variable: Credit rationing

Source: Field Data (2024)

Based on the information presented in Table 4.16, the coefficient of determination in the form of R square shows that Business size explains quite a significant amount of variation in Credit rationing. Precisely, 47.4% of the variation is attributable to Business size (R2=0.474, P=0.000). This implies that credit rationing is highly influenced by the size of a corporation. The results are consistent with the observation of the study by Demoussis, Drakos, and Giannakopoulos (2016), who found that there is a strong positive relationship between the size of the firm and the credit rationing of microfinance in Kampala. It was

found that more favorable lending conditions had a close relationship with credit rationing by use of SMSs.

The F test 1,202 = 180.385 and P =0.05. This finding gives support to the fact that the model can be used to explain the variability in the dependent variable as indicated in Table 4.16. Furthermore, this also means that the size of an organization is a useful credit rationing. Similar results were revealed by Hoque, Sultana and Thalil (2016) in researching the effects of business size on loan rationing of SMEs in Kenya. The findings showed that the size of a business had a significant positive influence on credit rationing of SMEs.

Table 4.16 indicated that the unstandardized regression coefficient (b) of the business size was 1.035 and the significance level of b was less than 0.05. This implies that a one-unit change in the size of business would result in an equally positive increase in credit rationing by 1.035. The regression equation that was used to estimate the credit rationing based on size of the firms was therefore as: Credit rationing = -.032+1.035 business size.

The findings are clear that the size of a firm has significant positive influence on credit rationing of SMEs in Kakamega County. The findings of the present research are consistent with the conclusions drawn by Wangige, Simiyu, and Atheru (2016) who identified a positive and significant correlation between the size of a given corporation and credit rationing. In a study on the effects of business size on credit rationing in the deposit-taking microfinance institutions in Kenya, Hoque, Sultana, and Thalil (2016) take this study. Khazenirazavi and Calcagno (2022) examined the influence of some company characteristics on credit rationing of SMEs in the European Union. It was found that

company size was not significant in influencing credit rationing. This may be exposed to fact that the study was in another field Europe that attracts the difference. Their results showed that the variables concerning the size of the business do not influence the majority of credit rationing in these organizations.

4.7.2 Influence of Collateral on credit rationing among registered SMEs in Kakamega Town

A regression analysis was performed to determine the influence of collateral on credit rationing among officially registered small and medium firms in Kakamega Town. The outcomes are presented in Table 4.17.

Table 4.17 Influence of Collateral on credit rationing among registered SMEs in Kakamega Town

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2	Sig. F Change
1	.693[a]	.480	.478	.67859	.480	184.898	1	200	.000

a. Predictors: (Constant), Collateral

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	85.142	1	85.142	184.898	.000[b]
	Residual	92.096	200	.460		
	Total	177.238	201			

a. Dependent Variable: Credit rationing
b. Predictors: (Constant), Collateral

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.059	.274		-.217	.829
	Collateral	1.042	.077	.693	13.598	.000

a. Dependent Variable: Credit rationing

Source: Field Data (2024)

According to the data in Table 4.17, the R square value indicates that collateral accounts for a considerable portion of the variation in credit rationing, specifically 48% (R2=0.480, P=0.000). This suggests that collateral has a substantial impact on credit rationing. Nyabaga and Wepukhulu (2020) shown that there exists a direct and substantial correlation between Collateral and Credit rationing. Empirical evidence has confirmed that Collateral has a statistically significant impact on Credit rationing for SMEs at a significance level of 5%.

The results obtained in the F test are (1, 202) = 184.898 with a level of significance of P less than 0.05. This finding gives support to the fact that this model is effective in explaining the variation that has been witnessed in the credit rationing. Moreover, it suggests that collateral can be used as an excellent predictor of credit constraint.

Table 4.177 shows that the unstandardised regression coefficient (β) of collateral is 1.042, and its value is statistically significant with the level of significance, p<.05. This means that one unit of collateral increase will lead to increment of 1.042 unit of credit rationing. The regression equation to be applied to find the level of credit rationing in Kenya because of collateral is the following:

Credit rationing = -.059+1.042 collateral

With the help of statistical analysis, it was found that SMEs in Kakamega County tended to be more sparse with their loans when a collateral was obligatory. Therefore, collateral is very advantageous to SMEs as far as credit rationing is concerned in Kakamega County. This is in line with what Mboi, Muturi, and Wanjare (2018) found out: that collateral is a predictor variable that is closely related to the success of operational SMEs in the Kakamega County. However, credit rationing was observed to have a negative but

significant relation to collateral rules (Sporta et al., 2019). Further concurs with Nyaga (2020) who studied the impact of company specific variable affecting credit rationing to registered SMEs in the Kiambu County in Kenya. The collateral effects on credit rationing were statistically low therefore not significant. Kiambu County as a geographical area is unlike Kakamega hence possibility of variation.

4.7.3 Influence of Repayment Capacity on credit rationing among registered SMEs in Kakamega Town

The purpose of this regression research was to find out how repayment capacity affected credit rationing for registered SMEs in Kakamega Town. Table 4.16 displays the results.

Table 4.18: Influence of Repayment Capacity on credit rationing among registered SMEs in Kakamega Town

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2	Sig. F Change
1	.701[a]	.491	.489	.67132	.491	193.279	1	200	.000

a. Predictors: (Constant), Repayment capacity

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.105	1	87.105	193.279	.000[b]
	Residual	90.134	200	.451		
	Total	177.238	201			

a. Dependent Variable: Credit rationing

b. Predictors: (Constant), Repayment capacity

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.113	.271		-.417	.677
	Repayment capacity	1.057	.076	.701	13.902	.000

a. Dependent Variable: Credit rationing

Source: Field Data (2024)

According to Table 4.18, the R square value, which represents the coefficient of determination, indicates that repayment capacity accounts for a considerable portion of the variation in credit rationing, specifically 49.1% (R2=0.491, P=0.000). This suggests that the ability to repay has a substantial impact on credit rationing. Khazenirazavi and Calcagno (2022) discovered that Business-specific factors, such as repayment capacity, had a detrimental impact on the credit rationing of SMEs. They found that as the repayment capacity increased, the level of credit rationing decreased. Wernli and Dietrich (2021) found out that there was a high negative relationship between repayment capacity and credit rationing. This was ascertained by a calculated p-value of 0.000 which is less than the significance level of 0.05 at 95% certainty level. Therefore, in small and medium firms, the loan rationing depends on the ability to repay the loans, and the correlation is an inverse one.

The F test gave (1, 202) = 193.279, P<0.05, meaning that the model is useful in explaining the variation in the dependent variable hence supporting their goodness of fit. Moreover, it means that the capacity to pay off debts is a key factor of credit constraints.

Table 4.18 indicates that the unstandardized regression coefficient (β) of Repayment capacity charged has a value of 1.057 and the significance level of the regression value is p< .05. This implies that an increment of one unit of Repayment capacity charged would result in an equivalent increment of credit rationing by 1.057 in the same direction. The regression equation to evaluate the credit rationing in Kenya because of the repayment ability is as follows:

Credit rationing = -.113+1.057 Repayment capacity

The results showed that the ability to service loans is a major factor that restricts credit access between SMEs in Kakamega town. This finding matches the result of Maina (2017), who states that the impact of repayment capacity on the rationing of loans in certain small and medium-sized firms (SMEs) in Kenya has a statistically significant correlation. The paper provides facts which reveal that capacity of the Small Medium Enterprises (SMEs) in Kenya to repay loan led to increase in credit restriction. Nevertheless, Gebrekiros (2013) did not establish significant correlation between the ability to repay and constraint of credit accessibility to small and medium size companies (SMEs) in Kenya. The findings indicate that the alterations in the power of borrowing a loan do not always result in the modification of the limitation of access to credit.

4.8 Multiple Linear Regressions

This study aimed to investigate the influence of profitability on the correlation between business-specific features and credit rationing of SMEs in Kakamega, Kenya. This was achieved by performing typical multiple regressions. The study sought to examine the influence of individual business-specific factors on credit rationing when all these variables were incorporated as a cohesive unit in the model. This enabled the calculation of the coefficients of the study model, as well as the R-squared value, to evaluate the null research hypotheses. The outcomes are exhibited in Table 4.19.

Table 4.19: Multiple Linear Regressions for Business Specific factors and Credit Ration

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2	Sig. F Change
1	.701[a]	.492	.484	.67435	.492	63.916	3	198	.000

a. Predictors: (Constant), Repayment capacity, Business size, Collateral

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.197	3	29.066	63.916	.000[b]
	Residual	90.041	198	.455		
	Total	177.238	201			

a. Dependent Variable: Credit rationing

b. Predictors: (Constant), Repayment capacity, Business size, Collateral

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.108	.274		.396	.692
	Business size	.896	.069	.718	12.914	.000
	Collateral	.403	.200	1.609	2.012	.036
	Repayment capacity	1.394	.129	.654	10.833	.000

a. Dependent Variable: Credit rationing

Source: Field Data (2024)

The results reported in Table 4.19 reveal that there is a direct and positive correlation between some predictor variables like the size of the company, collateral and repayment capacity and credit rationing. The correlation coefficient stood at 0.776 and Pearson correlation coefficient at 0.701. The study identified a coefficient of determination (r2) of 0.492, which signified that 49. 2 percent of the variation in credit rationing is being attributed to the three predictor variables. The other 50.8 percent of the differences in credit rationing can be attributed to other factors that were not factored in the model.

The findings of Table 4.19 analysis of variance (ANOVA) indicate that the F test gave an F (3, 202) = 63.916, and the level of significance of p =.05. The substantial F value offers

compelling evidence to substantiate the model's capacity to elucidate the variability in the dependent variables, signifying a commendable fit. Furthermore, this suggests that parameters specific to a business are a valuable signal of loan rationing. The multiple linear regression model was constructed by regressing the three predictor variables on credit rationing, as indicated in Table 4.19.

Credit rationing = $-0.108+ 0.896X_1 +0.403X_2 +1.394X_3$

$X_{1=}$ Business size

$X_{2=}$ Collateral

$X_{3=}$ Repayment capacity

According to the data in table 4.17, the variables of firm size, repayment capacity, and collateral had a positive but statistically insignificant predictive power ($P>0.05$). These findings align with Kirschenmann's (2016) study on the correlation between business-specific characteristics and credit rationing in SMEs. Kirschenmann concluded that there is a positive correlation, but also acknowledged the presence of other factors that influence credit rationing levels in SMEs. Nevertheless, Balogun, Agumba, and Ansary (2020) discovered that the majority of credit rationing in Kenya is not affected by the business-specific characteristics examined in their study.

4.10 Hierarchical Regression

Hierarchical regression is a statistical technique used to build regression models. It involves an automated process for selecting the predictive variables. The results are displayed in Table 4.20.

Table 4.20: Hierarchical Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.701[a]	.492	.484	.67435
2	.729[b]	.531	.517	.65292
3	.798[c]	.637	.625	.51837

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	87.197	3	29.066	63.916	.000[b]
	Residual	90.041	198	.455		
	Total	177.238	201			
2	Regression	94.109	6	15.685	36.793	.000[b]
	Residual	83.129	195	.426		
	Total	177.238	201			
3	Regression	41.097	7	13.699	50.981	.000[c]
	Residual	23.378	194	.269		
	Total	64.475	200			

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Constant	.509	.174		4.422	.000
1. Business specific factors	571	.073	.448	5.504	.000
Constant	3.138	2.386		2.315	.001
2. Profitability	0.937	.896	.069	4.718	0.03
Constant	.403	.200	1.609	2.012	.036
3. Business specific factors * Profitability	.848	.069	.698	12.212	.000

1. Predictors: (Constant), Business specific factors
2. Predictors: (Constant), Profitability
3. Predictors: (Constant), Business specific factors * Profitability

Source: Field Data (2024)

Table 4.20 shows Hierarchical regression results to establish the moderating effect of profitability on the relationship between business specific factors and credit rationing. The (R^2) change model 1 to model 2 was 0.39. An increase (0.531-0.492) and that of model 2 to 3 was 0.106 (0.637-0.531) an increase. Thus, in first model business specific factors account for 49.2% of variance in credit rationing in the second model when profitability

was added, business specific factors and credit rationing accounted for 53.1% of variance in credit rationing. While in the third model business specific factors and interactions term accounted for 63.7% of variance in credit rationing.

When profitability is taken into account, the regression coefficients and their statistical significance change. The findings also indicated that the inclusion of profitability in the regression model led to an increase in both the magnitude and significance of the regression coefficients for credit rationing.

The coefficient finding for the moderating influence of profitability on the connection between business specific factors and credit rationing is positive. Model two, after undergoing moderation, and the interaction term of model three, demonstrated that business specific factors (Business size, collateral and repayment capacity) exhibited significant and substantial predictive ability ($P<0.05$) with T values equal to or more than 1.96.

The statement suggests that profitability have a substantial role in moderating the relationship between business specific factors and credit rationing. This confirms that profitability had a significant positive influence on the relationship between business specific factors and credit rationing of SMEs in Kakamega County, Kenya. As a result, the null hypothesis was rejected. Nyaga (2020) examined the effect of company-specific factors on loan rationing in Kenya's Kiambu County, specifically among registered SMEs. Profitability moderated the association between company-specific variables and credit rationing statistically and at a significant degree.

Serrano and Sackey (2017) examined the role of profitability as a moderator in the connection between microfinance, loan rationing, and other related variables. Profitability posted insignificant effect on credit rationing.

Table 4.21: Hypothesis Results

Hypothesis	Findings	P Value (P<0.05)	Verdict
$H_{01:}$ Business size has no significant influence on microfinance credit rationing among registered SMEs in Kakamega County, Kenya.	Business size has a significant influence on microfinance credit rationing among registered SMEs in Kakamega County, Kenya	.000	Reject
$H_{02:}$ Collateral has no significant influence on microfinance credit rationing among registered SMEs in Kakamega County, Kenya.	Collateral has a significant influence on microfinance credit rationing among registered SMEs in Kakamega County, Kenya.	.000	Reject
$H_{03:}$ Repayment capacity has no significant influence on microfinance credit rationing among registered SMEs in Kakamega County, Kenya.	Repayment capacity has a significant influence on microfinance credit rationing among registered SMEs in Kakamega County, Kenya.	.000	Reject
$H_{03:}$ Firm Profitability has no significant moderating influence on the relationship between business specific factors and microfinance credit rationing among registered SMEs in Kakamega County, Kenya.	Firm Profitability has a significant moderating influence on the relationship between business specific factors and microfinance credit rationing among registered SMEs in Kakamega County, Kenya.	.000	Reject

. **Source: Field Data (2024)**

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter provides a recap of the concerns explored in earlier chapters. It also displays the overview of conclusions drawn from the study's findings, as well as recommendations and proposals for further research.

5.1 Summary of findings

The primary goal of the study was to assess the impact of business-specific variables on loan rationing among SMEs in Kenya. The key goals were to look into the effect of company size on loan rationing, the impact of collateral, and repayment capacity. Hypothesis tests were undertaken at a 95% confidence level ($p<0.05$) to evaluate both combined and independent effects. The sections that follow offer a summary of the findings, just as the prior section did.

5.1.1 Influence of business size on Credit rationing

The study's primary purpose was to evaluate how the size of the business affected the levels of limiting business credit in Kakamega County. Respondents agreed that credit was given depending on business size. The inferential study revealed a significant positive link between credit rationing and business size ($R=0.689$, $P=0.000$). This means that credit rationing would decrease as a corporation's size increased. The R-squared value of 0.474 indicates that 47.4% of the variation in credit rationing is due to company size. The association is statistically significant ($P=0.000$). This suggests that a company's size has a major impact on credit rationing. Credit rationing will grow significantly with a one-unit

increase in business size, with a probability (P) of 0.000, assuming repayment capacity and collateral remain constant.

As a result, the study failed to accept the first null hypothesis, which states: H01: Business size has no substantial impact on loan rationing for SMEs in Kakamega County.

5.1.2 Effect of collateral on the Credit rationing

The second objective of the study was to determine the influence of collateral on the credit rationing of SMEs in Kakamega County. The majority of respondents agreed that collateral restrictions are intended to function as a risk reserve for financiers. The inferential analysis revealed a substantial positive correlation (R=0.693, P=0.000) between credit rationing and collateral. This implies that an increase in collateral would result in an increase in credit rationing. The R-squared value of 0.480 suggests that collateral is responsible for 48.0% of the variation in credit rationing, and this relationship is statistically significant (P=0.000). What this means is that collateral is very essential in credit rationing. When collateral increases by one-unit, the increase in credit rationing is significant with a probability (P) of 0.000 adjusting for the size of the firms and repayment capacity. Thus, there was enough evidence to test out the second null hypothesis that states: H02: Collateral does not have significant effect on credit rationing of SMEs in Kakamega County.

5.1.3 Effect of Repayment capacity on Credit rationing

The third objective of the study was to ascertain the influence of repayment capacity on the rationing of credit for SMEs in Kakamega County. The directors of the respondents' SMEs are involved in the development of regulations that address the vulnerability of

repayment capacity. The inferential analysis revealed a substantial positive correlation (R=0.701, P=0.000) between credit rationing and repayment capacity. This implies that an increase in credit rationing would result from an increase in repayment capacity. Business size is responsible for a significant 49.1% of the variation in credit rationing, as indicated by the R-squared result (R^2=0.491, P=0.000). This implies that the capacity to repay is a valuable indicator of credit rationing. A one-unit increase in repayment capacity will result in a substantial increase in credit rationing when the size of a business and the quantity of collateral are maintained at a constant level, with a probability (P) of 0.000. Therefore, there was adequate evident to reject the third null hypothesis that posits: **H_{03}**: Repayment capacity has no significant effect on credit rationing of SMEs in Kakamega County.

5.1.4 Profitability, Business Specific Factors and Credit rationing

The fourth aim of the study was to determine how profitability influences the relationship between company specific characteristics and credit rationing of SMEs in Kakamega County. The participants concurred that their SMEs generate earnings on an intermittent basis. The inferential analysis demonstrated a significant positive correlation (P=0.001) between profitability, business-specific characteristics, and credit rationing. Therefore, it can be inferred that the level of profitability had a crucial role in influencing the connection between business-specific characteristics and the restriction of credit for SMEs in Kakamega County. Therefore, there was adequate evident to reject the fourth null hypothesis that posits: **H_{04}**: Profitability has no moderating effect on the relationship between significant effect on business specific factors and credit rationing of SMEs in Kakamega County.

5.2 Conclusion

It noted that SMEs in Kakamega County maintained a credit policy manual to assist in the determination of business size, collateral, and repayment capacity. Additionally, they assessed the credit history and character of the client during the credit appraisal process. These have led to a substantial improvement in the credit rationing of SMEs in Kakamega County. The research found that the credit rationing of SMEs in Kakamega County is significantly influenced by the scale of the business.

Clearly, the results indicate that the collateral requirements establish a risk buffer among the SMEs in the Kakamega County. The research concluded that collateral plays a significant role in the rationing of credits to SMEs in Kakamega County. It means that the improvement of the collateral base would result in significant credit rationing of SMEs in Kakamega County.

The director was also engaged in the framing of the sensitivity of repayment capacity by the SMEs in Kakamega County, and they employed the earlier challenges to accommodate the shifts in the repayment capacity. The paper has, therefore, concluded that the repayment capacity charged has significant effects on credit rationing of SMEs in Kakamega County.

The Kakamega County is a contributor to profits in SMEs, and it is important to reveal that credit rationing and company specifics like collateral, repayment ability and business size are undertaken by the SMEs.

5.4 Recommendations

The analysis concludes by deriving policy and practical suggestions based on the specified objectives.

The study indicated that SMEs in Kakamega County should establish and adhere to a credit policy manual in order to facilitate debt recovery, irrespective of the size of the business. The study recommends that credit rationing through asset discovery strength plans. This would make it easy to determine ability to pay borrowed funds.

Regarding the second objective, the study suggested that SMEs in Kakamega County should prioritize the use of collateral to enhance their ability to borrow funds. Repayment of credit is an essential component for SMEs as it strengthens microfinance institutions therefore SMEs should strengthen their securities for better bargaining on credits to be awarded and evidence of pay ability.

Regarding the third objective, the study suggested that the management of the SMEs should engage stakeholders in the development of policies that take into account the sensitivity to repayment capability. The increase in repayment capacity results in higher costs of credit, which in turn hinders borrowers' ability to repay their loans.

SMEs in Kakamega County should aim to generate better payment strategies that are sufficient to enable them to easily obtain capital and prevent the negative impact of credit rationing shocks. Furthermore, the cash inflows and outflows should balance for firm prosperity.

5.5 Suggestion for further studies

This study sought to found out effect of business specific factors on credit rationing of SMEs in Kakamega County, Kenya. Conceptually, the study limited itself to business size, Repayment capacity and collateral. The implementation of these three strategies explained up to 70.1% of variation in credit rationing. Further study can focus on other business specific factors such as liquidity, capital base and operational efficiency to examine if they can increase the variation beyond 70.1%.

The study did not include mediating variables. Researchers should therefore consider introducing other variables in similar studies such as macro-economic factors not limited to foreign exchange, market risk, profitability which may have indirect effect on credit rationing of SMEs.

Contextually and geographically, the study limited itself to SMEs in Kakamega County. Further studies should consider other SMEs in other counties for comparative analysis. This study suggests use of mixed research design and longitudinal studies for deeper insights.

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APPENDICES

Appendix I: Introductory Letter

Dear Participant,

I am a Master's student at MMUST, and as a partial requirement of my coursework assessment, I am required to submit a research report on '*Business Specific Factors and Microfinance Credit Rationing among registered Small and Medium Enterprises in Kakamega County, Kenya*.'

I would highly appreciate it if you could kindly complete the questionnaire to assist me in collecting data. Your information, alongside others, will help me in my research and will be used strictly for academic purposes and treated as confidential. Therefore, please do not write your name on the questionnaire.

Thank you in advance for your participation.

Sincerely,

TANGARA TOBIAS

Appendix II: Questionnaire

Section A: Demographic Information

1. What is your age?

18-24	[ ]	35-44	[ ]
25-34	[ ]	45-54	[ ]

55 and above [ ]

2. What is your highest level of education completed?

   Primary school [ ]

   Secondary school [ ]

   Diploma/Certificate [ ]

   Bachelor's degree [ ]

   Any other (specify) [ ]

3. How long have you worked at your current SMEs?

   Less than 1 year [ ]

   1-2 years [ ]

   3-5 years [ ]

   6-10 years [ ]

   More than 10 years [ ]

Section B: Specific Information

1) **Business size**

4. Kindly rate the following statements on the extent to which you agree with them on business size for microfinance credit rationing among SMEs in Kakamega County.

Key: 5: Strongly Agree, 4: Agree, 3: Fairly agree, 2: Disagree, 1: Strongly Disagree

Statements	5	4	3	2	1
1. My business sales turnover has led to positive credit rationing from microfinance institutions.					
2. My business sales trajectory has led to positive credit rationing from microfinance institutions					
3. My business investment has led to positive credit rationing from microfinance institutions					
4. The capital employed in business has led to positive credit rationing from microfinance institutions					
5. My business asset composition has led to positive credit rationing from microfinance institutions.					

2) Collateral

5. Kindly rate the following statements on the extent to which you agree with them on collateral for microfinance credit rationing among SMEs in Kakamega County

Key: 5: Strongly Agree, 4: Agree, 3: Fairly agree, 2: Disagree, 1: Strongly Disagree

Statements	**5**	**4**	**3**	**2**	**1**
1. The monetary value of the business collateral has determined credit amount I receive from microfinance institutions.					
2. The business stock has determined credit amount I receive from microfinance institutions.					
3. The business license has determined credit amount I receive from microfinance institutions.					
4. The type of collateral has always determined credit amount I receive from microfinance institutions.					
5. Failure to pay credit on time has led to loss of collateral from microfinance institutions.					

3) Repayment Capacity

Kindly rate the following statements on the extent to which you agree with them on repayment capacity for microfinance credit rationing among SMEs in Kakamega County. Key: 5: Strongly Agree, 4: Agree, 3: Fairly agree, 2: Disagree, 1: Strongly Disagree

	5	4	3	2	1

1. The net profit records has always determined credit amount I receive from microfinance institutions.					
2. Other income generating activities records has always determined credit amount I receive from microfinance institutions.					
3. The loan repayment history has always determined credit amount I receive from microfinance institutions.					
4. The amount of credit sought has always determined level of credit rationing I receive from microfinance institutions.					
5. The loan repayment schedule has always determined credit amount I receive from microfinance institutions.					

4) Profitability

6. Kindly rate the following statements on the extent to which you agree with them on moderating effect of profitability on the relationship between business specific factors and microfinance credit rationing among SMEs in Kakamega County.

Key: 5: Strongly Agree, 4: Agree, 3: Fairly agree, 2: Disagree, 1: Strongly Disagree

	5	4	3	2	1
1. Our net income sustain business operations					
2. The asset level determines credit qualifications					
3. Our business returns sustain business operations					

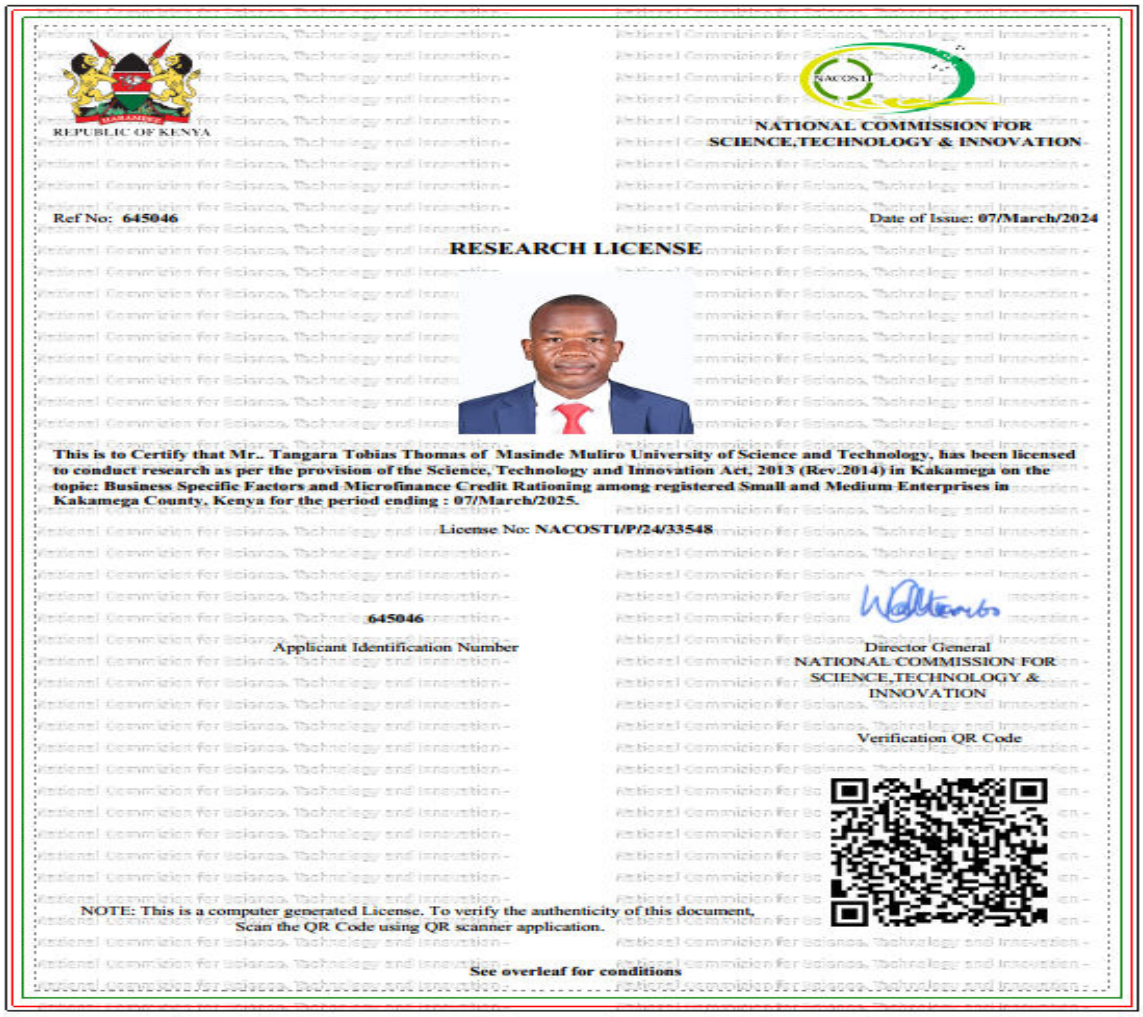
Credit rationing

7. Kindly rate the following statements on the extent to which you agree with them on microfinance credit rationing among SMEs in Kakamega County

Key: 5: Strongly Agree, 4: Agree, 3: Fairly agree, 2: Disagree, 1: Strongly Disagree

	5	4	3	2	1
1) The size of business has occasionally made us fully denied credit.					
2) The size of business has occasionally made us partially denied credit.					
3) The type of collateral has occasionally made us fully denied credit.					
4) The repayment capacity has occasionally made us fully denied credit.					
5) The repayment capacity has occasionally made us partially denied credit.					

Appendix: Research Permit



REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 645046

Date of Issue: 07/March/2024

RESEARCH LICENSE

This is to Certify that Mr.. Tangara Tobias Thomas of Masinde Muliro University of Science and Technology, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Kakamega on the topic: Business Specific Factors and Microfinance Credit Rationing among registered Small and Medium Enterprises in Kakamega County, Kenya for the period ending : 07/March/2025.

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