EFFECT OF MONETARY INTERVENTIONS ON ACCESS TO CREDIT AMONG SMALL AND MEDIUM ENTERPRISES IN KISUMU COUNTY, KENYA: THE ROLE OF FINANCIAL INNOVATIONS

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I declare that this is my original thesis and has not been submitted to any institution of higher learning for the award of any degree.

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DEDICATION

This thesis is dedicated to my loving children Elsie and Joseph for their enduring sacrifice during the time I went through my studies.

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ABSTRACT

Monetary interventions are activities by the Central Banks to control quantity of money and credit supply. However, access to credit by Small and Medium Enterprises (SMEs) has been pinpointed as the most critical hindrance to their growth. SMEs form about 90% of businesses worldwide and provide most of the jobs in the developing economies. Nonetheless, they enjoy less access to external credit and face higher transaction costs and risk premiums. About 70% of them do not access external credit while 15% more are underfinanced. Assessment of the impact of interest rate caps, cash reserve ratios, open market operations, and moral suasion, respectively, on credit availability, as well as an examination of the moderating function of monetary innovations in the connection between these factors and credit availability were the specific goals. The theories of monetary theory, loanable funds, and liquidity preference provided guidance for the research. The study used a descriptive survey-based approach and was motivated by positivist philosophy. 1472 small and medium-sized businesses in Kisumu County, Kenya, that were registered with the Ministry of Commerce and Industry made up the target population. An accurate representation based on Taro Yamane's formula was obtained at a 95% confidence level. A sample of 420 small and medium-sized business owners and financial executives were given a closed-ended questionnaire. The instrument's internal consistency was validated by a Cronbach's alpha of 0.801, and expert opinion was used to evaluate its face as well as content validity, yielding a scalar validity of content index of greater than 0.9. The basis for the inductive evaluation based on regression and correlation studies came from diagnostic tests as well as descriptive analysis. The findings indicated that the following factors had statistically significant influence on small and medium-sized businesses' ability to obtain credit: interest rate caps, cash reserve ratios, open market activities, and moral persuasion. Furthermore, the link between interest rate caps, cash reserve ratios, open market operations, moral persuasion, and SMEs' access to credit was statistically moderated by financial innovations. These findings have important ramifications for central banking and microfinance theory, practise, and policy in Kenya and elsewhere. This is due to the results' explanation of how financial innovations contribute to monetary policy's increased efficacy. The results, in particular, offered empirical support for the importance of financial innovations' moderating influence in interventions aimed at monetary interventions. The study came to the conclusion that financial innovations mitigated the direct and hierarchical impacts of monetary interventions, which were necessary for SMEs to get loans. According to the study, policymakers should focus on enhancing the procedure and function of financial developments in the connection between the selling and buying of governmental securities along with selective control over credit access by SMEs. They should also use sector-specific interventions rather than general ones to guarantee increased access to credit.

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LIST OF ABBREVIATIONS AND ACRONYMS

BR: Base Rate

CBs: Commercial Banks

CBK: Central Bank of Kenya

CBN: Central Bank of Nigeria

CBR: Central Bank Rate

CRR: Cash Reserve Ratio

GARCH: Generalized Autoregressive Conditional Heteroskedastic

GMM: General Method of Moments

GOK: Government of Kenya

I-CVI: Item Content Validity Index

IR: Interest Rate

KCIDP: Kisumu County Integrated Development Plan

MDGs: Millennium Development Goals

MFIs: Micro-finance Institutions

NPLs: Non-performing Loans

OMO: Open Market Operations

OECD: Organization of Economic Cooperation and Development

S-CVI: Scalar Content Validity Index

SMEs: Small and Medium Enterprises

SPSS: Statistical Package for Social Scientists

SSA: Sub-Saharan Africa

SVAR: Structured Vector Auto Regression

VAR: Vector Auto Regression

WB: World Bank

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

This thesis examined how monetary interventions affected small and medium-sized businesses' (SMEs') ability to obtain credit in Kisumu County. Given the significance of SMEs in economic growth and the possibility for credit availability to strengthen this role, this is a crucial research question (Ghulam & Mumbine, 2017). The SME sector has recently drawn a lot of interest from both the developed and the developing countries. This is because they contribute the largest share in their GDP and in the employment opportunities in these nations. It is approximated that the SMEs form over 90% of the businesses worldwide and contribute to over 50% of the job opportunities and over 33% of the gross domestic products of a majority of the developing nations (Tewari, et. al., 2013; Saleem, 2017).

Nonetheless, SMEs face many financial obstacles than bigger firms as They are unable to obtain sufficient credit from banking organizations, pay more risk premiums and transaction fees. It is known that 15% of SMEs are underfinanced and that around Seventy percent of SMEs don't use outside financing from banks. In addition, banks charge SMEs greater interest and finance rates, particularly in developing nations, and provide them a smaller percentage of investment loans than they do major corporations. The percentage of SME lending in bank loan portfolios ranges from 5% to 20% in Kenya, Nigeria, the nation of Rwanda, South Africa, and Tanzania. In Ghana on the other hand, Less than 25% of all debt funding for SMEs comes from

bank loans. New study, however, also demonstrates that banks may set themselves up to see SMEs as essential and crucial businesses (World Bank Group, 2018).

Monetary interventions are activities carried out by Central Banks to control the quantity of money and credit supply thereby enhancing the economy of a nation. Scholars assert Such monetary interventions are employed by central banks around the world to manage prices, achieve full employment, control the amount of money in the economy, and foster growth in the economy (Kamau, 2015; Kimani, 2013). The goal of the interventions is to steer bank lending rates toward thresholds where credit demand and money growth are balanced out. This is in tandem with monetarism theory which argues that money supply is directly proportional to price of commodities and services (Herbener, 2017). Monetary operations can be either contractionary, meaning they decrease the money supply and lower inflation rates, or expansionary, meaning they increase the money supply and lower interest rates to boost economic growth (Kamau, 2015; Kimani, 2013).

Monetary interventions are distinct in various countries and more primitive in developing countries like Nepal. Even though Nepal is not fitting well with international markets and has interest rate and asset price channels, they have several goals of price and financial stability to enhance growth (Dhungana, 2016). In the United States, the Federal Open Market Operations Committee, which is within the Federal Reserve, has the mandate of carrying out monetary interventions. During the financial crisis of 2007, the Federal Reserve lowered the Fed Funds Rate to the zero lower boundary using conventional methods. However, towards the end of 2008 they used unconventional monetary interventions through quantitative easing and

purchased long-term securities in large scale with an aim of easing long-term interest rates hence there was improved economic activities which made financial conditions better (Wan, 2017).

Since 1963, Kenya has implemented a number of changes; in the 1990s, direct monetary interventions gave way to indirect ones. The macroeconomic successes of the 1960s and 1970s, as evidenced by their high growth rates, surplus balance of payments, and low inflation rates, have not been repeated, despite the monetary policies of that time being inert. In spite of Kenya has one of the more developed banking industries in Sub-Saharan Africa, behind only South Africa and Nigeria. Despite this, the sector still faces several difficulties, one of which is the rapid advancement of financial innovations (Nyorekwa & Odhiambo, 2014).

The process by which innovations in finance create a connection amongst monetary interventions and SMEs' ability to obtain loans is not given much empirical focus. Research was therefore required to uncover the "black box" separating monetary actions from the availability of credit for small and medium-sized businesses. In order to close this empirical gap, the current study looked at how financial innovations affect how monetary interventions affect loan availability of these enterprises. Some of the instruments of monetary interventions used by most Central Banks include Open Market Operations (OMOs), Cash Reserve Ratios (CRRs), Moral Suasion, Interest Rate Caps, Foreign Exchange Market Operations, Discount Window Operations and Central Bank Rates (CBK, 2021; Dhungana, 2016). However, this study employed Interest Rate Cap, Cash Reserve Ratio, Open Market Operations and Moral Suasion as these are the common interventions used in many studies yet with

conflicting findings. Most of the studies also found the effect of monetary interventions about the state of the banking industry. Hence this study focused on the SME sector.

1.1.1 Interest Rate Caps

The minimum interest rates on savings accounts and the highest interest rates on loans are determined by an interest rate ceiling a credit facility while an The cost of taking out loans for debtors is the interest rate borrowed (Miller, 2013). According to studies conducted all around the world, interest rate restrictions are meant to protect the weaker sectors while also increasing access to financing. The impoverished and those from farther away, nevertheless, were ignored by MFIs as a result of the implementation of IR caps on microloans. Instead, in an effort to boost the MFIs' effectiveness, they boosted the average loan size. Because of IR restrictions, the amount of credit available in Japan decreased, which in turn led to a decrease in the approval of loan applications and the emergence of illicit lending. Interest limitations in Poland also made it harder for SMEs to obtain financing (Maimbo & Gallegos, 2014).

Financial freedom policies in the US, like the elimination interest caps in some areas, had such an impact on small businesses' ability to obtain credit that there was a client exodus to jurisdictions with laxer lending regulations.

In addition, the implementation of IR restrictions in Nicaragua led MFIs to curtail lending, hastening the demise of several financial institutions in rural areas because of their high marginal costs along with additional fees needed to maintain operations.

Because interest rate limitations increase the operational expenses of lenders, they also have a negative impact on small businesses in Colombia. In Bolivia, the situation was comparable (Maimbo & Gallegos, 2014; Heng, 2015).

Interest rate limitations in the European Union (EU) also made loans less accessible to lower-income borrowers. They contended that lenders limited lending accessibility because they were unable to charge the interest rates required to cover higher risks. Furthermore, commercial banks were deterred from entering the rural and microcredit markets by interest rate limitations. Additionally, fewer consumer credit loans resulted from it. Though more rigorous interest rate limitations led to a decrease in the amount of credit in the Netherlands, after the introduction of interest rate caps, the credit market in both countries expanded more rapidly. Interest rate ceilings have been linked to decreased consumer loan usage among EU member states. In contrast, the UK had the biggest uncapped consumer market (Udo, Renaud & Knobloch, 2010).

The Banking Amendment Bill, which established interest rate restrictions, was approved by the Kenyan National Assembly in 2015. The bill specifies the minimum interest rate provided on deposits put forth by the Central Bank of Kenya (CBK) at least 70% of the foundation rate, and the maximum interest rate that may be used for a credit facility in Kenya must not exceed 4% of the CBK's base rate (BR) (Apex, 2016).

The Kenyan government's interest rate cap reduced revenues while driving up costs, which had an impact on the MFIs' ability to continue operating. clients and

microfinance institutions (MFIs) were impacted by IR limitations since they significantly decreased MFIs' outreach while increasing long-term costs for clients (Aslam, 2017). Olaka (2017) stated his concern that banks will lend more to government agencies and less to the private sector, especially small and low-income borrowers, as a result of Kenya's interest rate cap. It was unclear if the interest rate cap was successful and how it affected SMEs' ability to obtain finance.

1.1.2 Cash Reserve Ratio

According to Caesar (2013), the bare minimum of notes and client deposits in the ratio of cash reserves is what every commercial bank needs to keep on hand. Central banks have the authority to enact legislation that restricts excess reserves in order to manage inflation or depreciation. If there is a surplus of demand over supply for reserves, they might also reduce the reserve ratio (Gray, 2011). The application and impact of the cash reserve ratio are documented in reports from around the globe. For example, China's primary weapon for monetary policy is the cash reserve ratio, which is regularly adjusted to minimize economic volatility. These adjustments have an impact on the overall credit supply or the capital and credit redistribution. Between 2006 and 2011, the People's Bank of China made over 40 revisions to its reserve ratio, increasing it from 8.5% to 21.5%. Research shows that while changes in the amount of reserves needed did affect the loan growth of Chinese banks, they actually helped the country's more productive sectors rather than the less productive state-owned businesses through rising off-balance sheet loans (Zheng & Spiegel, 2017; Zuzana et al., 2015).

In Peru, reserves are kept by banks as a means of managing loan availability, controlling money supply, and meeting liquidity demands. Comparably, cash reserve requirements are used in France as a strategy to improve financial stability and prices (Cesar, 2013; Gloker & Towbin, 2012). The need for reserves and bank lending exhibited a negative link in Nepal, but the ratio of cash reserves had a beneficial impact on the money supply in Jordan (Jamel et al., 2017).

According to Kenyan legislation, Commercial Banks (CBs) must deposit around 4.25% of their total deposits, both in local and international currencies, with the Central Bank of Kenya. This central bank sets the maximum amount of loans that CBs can provide to the general public, so impacting the availability of funds. Commercial banks' loanable funds fall when the proportion of the necessary reserve rises, but the available loanable funds rise when the ratio falls. Additionally, the Central Banks periodically modify the cash reserve ratio (Putunoi, 2015; Banking Circular No.4, 2020).

1.1.3 Open Market Operations

The purchasing and selling of the government securities is known as open market operations, or OMOs bonds and bills through the Central Banks' open market. The sale of government securities in the open market influences supply of money in financial markets. As Gray (2011) explained, the supply of funds reduces when securities are sold and increases when they are bought. Central Banks buy and sell government securities in the money market through the Treasury bills, repurchase

agreements (REPOs), and reverse repurchase contracts (Reverse REPOs) are used in open market activities (Kamau, 2015). Empirical work on the effect of OMOs points to the success of this policy on influencing the money supply throughout the economy. The monetary authority of Jordan's open market activities include the issuing of deposits and the REPOs were effective in influencing the Jordanian money supply, despite the fact that its impact was insufficient However, open market operations had a negative impact on bank lending in Nepal (Jamel et. al., 2017). The big question is, ‘‘Are the SMEs able to access the money supplied?’’

Notwithstanding the fact that Nigeria's rate of inflation has not decreased to the targeted unit digit, a number of monetary intervention instruments, including OMOs, have been in operation since 1993. The Reserve Bank of Nigeria, like other countries in the globe, is in charge of developing and carrying out monetary policies with the goal of maintaining price stability. OMO was in wide use in Nigeria alongside other monetary policy tools to control price stability. The policy had a positive but insignificant influence on the stability of consumer prices as measured by Nigeria's inflation rate. The consumer cost stability of the OMO was positively correlated with the CBN for the period 1993-2007. OMO remained a useful monetary intervention tool alongside other tools to maintain price stability in Nigeria (Onwumere et. al., 2012).

Researchers have mixed reactions on the impact of free market activities on credit supply in Kenya. Some authors allude to the fact that activities in the free market have a significantly negative effect on credit supply (Njiru, 2016) while others posit that

the has a noteworthy and beneficial impact 91 Treasury bill rate on banks' lending rates in Kenya (Mwangi, 2016; Kamau, 2015).

1.1.4 Moral Suasion

A direct, non-market-based tool for policymaking is moral persuasion by governments to influence and command commercial banks to provide loans to specific productive industries (Omoregie, 2013). The Central Bank has the final say over commercial banks when it comes to deciding how to accomplish specific goals in order to extend loans to particular industries. The central banks employ moral suasion in conjunction with directions and persuasions to exert influence over commercial banks. Commercial banks are willing to comply and extend credit to the most vulnerable industries, like SMEs, through these directions and persuasions. For example, following the global crisis of 2007, numerous UK banks declined to offer specific credit services to small and medium-sized enterprises (SMEs). Through lobbying, the UK government was able to convince and persuade a number of its main banks to provide financing to the SME sector, which led to economic development and the country's exit from recession. The United States also used moral pressure to make sure that the rules and controls needed to lower their risks were included in their settlement and payments system. Due to balance of payments issues, the US used moral persuasion in 1965 to lower foreign bank lending and lower

savings and loans. At the time, moral persuasion was a key instrument of American strategy (Omoregie, 2013).

It is crucial to note that moral suasion was also efficient in Canada as a result of chartered banks' significant ownership concentration. As a result, The National Industrial Development Bank of Canada supported the SME sector. Direct methods of giving giving small companies and borrowers in the nation's less developed regions more consideration were used by the government of Canada. Moreover, informal moral suasion that involved engaging banks for commerce & other financial organizations to work together to accomplish the financial policy's objective (Ryan-Collins, 2016).

Moral suasion was another monetary intervention tool in Nigeria Regarding the distribution of loans to the productive industries way before 1986 but is no longer widely used after then, due to the fact that financial market participants lacked faith in Nigeria's fiscal and monetary authorities (Omoregie, 2013).

Examining government financial initiatives that facilitate SMEs' access to loans in Nigeria, Reactions to the practice of direct lending, in which governments ordered banks to lend to particular industries in order to help them grow, were divided. This is a result of the funds' inability to reach the intended beneficiaries and their actual creation of market distortions. While targeted lending might make credit more accessible to certain groups, it might make it less accessible to others, which could eventually cause a decline in the overall trend of financial services accessibility. (Ketley et. al. 2012).

On moral suasion, the efficacy of the authority of the central bank to control commercial banks was not embraced by many banks in Kenya who believed that banks could not operate well with a visible and strong arm of the government (Ondieki & Jagongo, 2013). Again, whether these other monetary interventions enhanced access to credit by SMEs was yet another critical question.

1.1.5 Financial Innovations

Financial innovations are the activities of developing and gaining traction with new financial instruments, institutions, technology, and financial markets. They are the activities that involve modifying goods and procedures, establishing new businesses, acquiring fresh information, and creating a distribution network for novel goods and services (Tufano, 2003). Technology advancements have the potential to create new financial services and products, new types of organizations, or make information access, trade, and payment easier (Gbadebo & Oladapo, 2009; Lerner & Tufano, 2011). Improvements in Financial procedures, information technology, and telecommunications have led to advances in technology that have significantly altered financial advancements globally in recent years (Lerner and Tufano, 2011).

The development of Fintech has increased financial innovations with novel financial products, services, processes and organizations being formed and used. It has been found from empirical literature that the internet use has caused faster and more reliable modes of remittance of money and similar product innovations. Literature also reveals that consumer lending has changed from human to machine underwriting based on credit scores using Machine Learning and Artificial Intelligence resulting in increased credit availability at low costs. It is further noted that block chain

technology is now being employed for the issue and transfer of widely distributed crypto-currencies and for the initial funding of technology companies through the Initial Coin Offering (ICO) (Frame et. al., 2018).

Among the novel product developments are subprime loans, where creditors with low credit histories are given loans at reasonable rates. Innovations have also concentrated on innovations in goods and services, including internet banking and debit cards, as well as process advances like distributed ledgers, artificial intelligence, machine learning, and personal credit scoring (SBCS). Internet-only banks and marketplace lenders, which link small businesses with lenders online, are two examples of recent organizational changes (Frame et. al., 2018).

The efficiency of the system used to convey monetary policy may be impacted by financial innovations, and the effectiveness of these changes varies. They may result in a decrease in the demand for money if financial innovations lead customers to favor less liquid assets over more liquid ones, or they may result in an increase in the demand for money if payment systems are improved and customers desire more fluid assets (Ajide, 2016; Dabrowski, 2017; Lerskullawat, 2014).

The availability of credit and debit cards, ATMs, electronic money, and other easy payment methods affects the rate at which money is created. The impact of electronic currency on the transmission of money may not matter as long as central banks maintain their authority over interest rates. Furthermore, while credit cards provide some funding, changes in interest rates brought on by monetary policy may not have as much of an impact on households because credit cards can buffer those changes

(Putunoi, 2015). Financial innovations can help SMEs obtain credit by addressing issues like insufficient information and security, among other things (OECD, 2018).

1.1.6 Access to Credit by SMEs

The worldwide issues facing small and medium-sized enterprises (SMEs) stem from their incapacity to obtain the credit necessary for them to make contributions to economic growth, job development, as well as the reduction of poverty (Etemesi, 2017; Ghulam & Mumbine, 2017). The SMEs need to obtain the right financing to enable them start-up, develop and be sustained. Despite the fact that SMEs were ability to get credit from banking establishments after the financial crisis of 2008, they still endure several challenges such as lack of information, high costs of servicing loans or inadequate financial knowledge (OECD, 2018). In developed nations, SMEs account for a sizable portion of GDP and employ more than half of all workers. For example, in the Netherlands, SMEs account for 90% of the total private sector, 32% of the GDP, and 55% of the work force. If SMEs have improved access to financing and policies are created to support their growth and development, their role can be strengthened (Ghulam & Mumbine, 2017). The fact that lenders frequently view SMEs as high risk and less economically feasible, which makes them reluctant to lend to them in big amounts or for extended periods of time, makes the need for targeted interventions clear (World Bank Group, 2018).

However, as attempts to boost economic growth via huge businesses have failed, governments everywhere are focused on SMEs. For their SMEs, many developed

nations have tightened their loan guarantee programs. In 2014, for example, France loosened lending regulations for SMEs to the extent that loan guarantee programs covered as much as 90% of the risks associated with loans; in the UK, the guarantee covered up to 75%; in Japan, it covered 80%; and in South Korea, 100% of the SMEs. Other nations, like Sweden and Belgium, use their state-owned banks or public organizations to make direct loans to SMEs (Etemesi, 2017).

Though slowly, the African nations have been persuaded to recognize and promote the formation and maintenance of SMEs in their national growth strategies by the achievements of many developed countries that understand the role of SMEs in the growth of their economies. For example, SMEs in South Africa rarely survive past their fifth year of operation, primarily because of a lack of financial literacy (Ndede, 2015). In Uganda, on the other hand, collateral can account for as much as 150% of the loan amount advanced, repayment terms are limited The rates of interest range from 23% to 30% per month for up to 24 months (Etemesi, 2017).

According to Deressa (2014), one of the biggest obstacles to doing business in Zambia for the SME sector is the inability to obtain sufficient finance, which has a significant impact on their growth. This perspective is reinforced in Ethiopia, where Alemu (2017) discovered that financial accessibility hindered the expansion and effectiveness of SMEs. According to Avevor (2016), financial institutions in Ghana gave SMEs credit at exorbitant interest rates because they were viewed as a risky business. Nevertheless, the level of credit availability after monetary measures might not be entirely explained by these research.

However, related research highlights the sector's significance for generating jobs and boosting the economy and that the SMEs should obtain the right financing to enable them start-up, develop and be sustained. To enable SMEs to enhance their economic well- being, a variety of instruments of finances should therefore be opened to them (OECD, 2018; Ndede, 2015). Arora (2010) highlights some aspects of financial accessibility, including ease of physical access, adaptability, dependability, transactional simplicity, cost considerations, and accessibility for underprivileged and financially illiterate individuals.

The number of customers and the amount of loans issued to them is a way of measuring access to credit by small enterprises and individuals. Financial regulators have separate data on loans to individuals and businesses but not on the small and medium businesses as a sector since most of the small business men borrow credit as individuals and not as enterprises. Besides, the SME owners don't separate their own finances from those of their businesses and tend to use their personal loans to meet the needs of their businesses. The number of clients accessing the loans and the quantity of loans given to the businessmen are therefore the most appropriate proxies for measuring access to credit by individuals and small firms. This may be measured by obtaining the number of bank credits per 1,000 adults and the quantity of the credit obtained. Access to credit among the SMEs is a major issue around the world. For instance in the high income nations individuals' loans is above 40% of the loanable funds while it is less than 20% in Sub-Saharan Africa and further below 5% in the The Democratic republics of the Congo and Central African Republic (World Banking Group, 2009).

The number of SMEs obtaining credit, the maximum loan amount they could accept, and the length of the repayment period served as the basis for the current study, which measured the dependent variable—SMEs' credit availability—in order to evaluate the potential impact of breakthroughs in finance. The present investigation concentrated on SMEs in Kenya's Kisumu County.

1.1.7 Study Area

Kenya's devolved counties include Kisumu County, which is split Kisumu Central, Kisumu East, Kisumu West, Seme, Nyando, Muhoroni, and Nyakach are the seven sub-counties that make up Kisumu. On a land area of 2085.9 sq. km., it has 1,224531 inhabitants. Between latitudes 0.3oS and 0.8oS and longitudes 33.3oE and 35.3oE is where it is located. Given that Kisumu City is the County's administrative center and a major center for trade, industry, and commerce in the Lake Victoria region, it was deemed an appropriate site for the study (CIDP Kisumu, 2018).

Numerous SMEs involved in business, trade, transportation, services, housing, healthcare, and education may be found there. Despite the anticipation that the engagement of SMEs can reduce unemployment and poverty, the contrary appears to be the case. According to the most recent County unified growth plan (2019/2020), credit availability continues to be one of the largest issues facing SMEs in the County. The fact that SMEs have not yet increased their contribution to economic growth and the fight against poverty despite the Kisumu County Government's engagement is not shocking (Indimuli et al., 2015). The Kisumu County Traders' Fund, Poverty Eradication Funds, and Youth and Women Enterprise Funds are a few of the county

and national government intervention programs included in these projects (CIDP Kisumu, 2018).

Moreover, there are several Micro-Finance Institutions and commercial banks in Kisumu County, yet A large number of small and medium-sized businesses were unable to obtain finance. For example, just 12% of Small and Medium-Sized Businesses operating in Kisumu County had accessed credit in the year 2015. The growth of the SMEs was also wanting as was evident in the County's economic index of 2.8% which was attributed to the high percentage of poverty (47.8%) in Kisumu County (CGK, 2015). It is because of the scenario above that this study was prompted.

This study added to the body of knowledge regarding the consequences of financial innovations on small and medium-sized firms' (SMEs') capacity to secure financing, specifically focusing on the relationship between the two in Kenya. With an emphasis on the function of financial innovations, this thesis investigated how monetary interventions affected SMEs' access to credit in Kenya.

1.2 Statement of the Problem

Globally, governments have implemented monetary interventions through the banks they regulate with the goal of expanding credit availability to SMEs and other sectors (Dhungana, 2016). Kenya's county and national governments have established funding to be given to the SME sector. SMEs can get financing facilities through the Foundation to Include the Informal Sector (FIIS), which enables them to grow their enterprises and save more money. Additionally, funds like the Kisumu Traders' Fund,

Women Enterprise Fund, Youth Enterprise Fund, and Uwezo Fund have helped SMEs at the County Government levels (KCIDP, 2018). Besides, SMEs can also access cheaper mobile money such as fuliza, m-shwari and the hustler fund. Also, there are several banks within Kisumu County such as Post Bank, KCB, COOP Bank and Family Bank among others that are now offering credit facilities to the SMEs.

Be that as it may, SMEs appear to be still having trouble getting approved for credit. They have difficulties in accessing long-term loans from commercial banks due to increased costs of credit, little cash flows, high risk premiums, low credit scores and unavailability of business plans and collaterals by SMEs (Pinar et. al., 2011; Aduda et al. 2012; Etemesi, 2017; Ndede, 2015; Mutuku et. al. 2019). As per the World Bank Enterprise Survey, vis a vis the larger firms, the SME sector has slimmer chances of accessing bank loans and other forms of credit finances as it was approximated that the credit gap to SMEs varied from $900 billion to $1100 billion which accounted for only 26%-32% of total loans to the SME sector (Facundo & Sergio, 2017). Besides, SMEs experience higher fees for transactions and risk premiums, as well as restricted access to external funding. Seventy percent of them don't access bank loans while 15% more do not obtain sufficient credit (World Bank Group, 2018).

Also to minimize the risks associated with moral hazard and adverse selection the financial institutions tend to fix small amounts of loans given to such risky sectors as the SMEs (Kimutai & Ambrose, 2013). In a conference in Mexico, it was reiterated that there was inadequate access to funding among SMEs in the low and middle income nations as they were loaned credit on short term basis and with high costs of servicing. They also lacked the right information and adequate financial knowledge

which in turn hindered their ability to access credit, be innovative and to grow (OECD, 2018). Furthermore, the products offered in the open market operations are not favorable to the SMEs to enable them engage in the buying and selling of the securities for purposes of raising funds (Facundo & Sergio, 2017).

It is important to rethink The financial innovations' moderating function in the actions taken by the banking sector to solve the issue of SMEs' lack of access to credit in Kenya. If these advances result in the development of more SME-friendly goods, services, procedures, and organizations, then perhaps they can offer a solution such as m-pesa, online banking, online loaning, credit cards among others (Putunoi, 2015). The current study proposed that there is a financial advancements' moderating effect on the relationship between quantitative interventions and credit availability by SMEs. No study was found touching on the concepts and context of this study. It is against this backdrop that in order to determine how financial innovations affect the link between economic interventions and loan availability, this study set out to the SMEs in Kisumu County.

1.3 Objectives of the Study

1.3.1 Overall Objective of the Study

In Kisumu County, Kenya, small and medium-sized businesses sought to ascertain the degree of financial intervention on loan availability as their main goal. Financial innovations' function

1.3.2 Specific Objectives

i. To ascertain how the interest rate ceiling affects little and medium-sized companies" ability to obtain credit in Kisumu County

ii. To ascertain the impact of the ratio of cash reserves on Kisumu County's little and medium-sized companies" ability to get credit

iii. To ascertain how open market activities affect small and medium-sized businesses' ability to obtain credit in Kisumu County

iv. To ascertain how moral persuasion affects little and medium-sized companies" ability to obtain financing in Kisumu County

v. To determine the financial innovations' modifying impact on the connection between:

   (a) Interest rate ceiling and little and medium-sized companies" access to finance in Kisumu County

   (b) The percentage of cash reserves to total credit available to little and medium-sized companies" in Kisumu County

   (c) Open market activities and loan availability for little and medium-sized companies" in Kisumu County

   (d) Moral persuasion and loan availability for little and medium-sized companies" in Kisumu County

1.4 Research Hypotheses

H_{01} Interest rate limitations in Kisumu County do not statistically significantly affect little and medium-sized companies' ability to get loans.

H_{02} In Kisumu County, the proportion of cash reserves has no statistically noteworthy effect on small and medium-sized businesses' ability to obtain loans.

H_{03} The influence of the open market is not statistically significant activities on little and medium-sized companies" ability to obtain credit in Kisumu County.

H_{04} In Kisumu County, moral persuasion has no statistically noteworthy effect on little and medium-sized companies" ability to obtain loans.

H_{05} No moderating effects that are statistically significant impact of advances in finance regarding the connection between:

(a) Interest rate ceiling and little and medium-sized companies" access to finance in Kisumu County

(b) Cash reserve ratio and small- and medium-sized businesses' access to credit in Kisumu County

(c) Open market activities and loan availability for small and medium-sized businesses in Kisumu County

(d) Moral suasion Regarding small and medium-sized businesses' access to financing in Kisumu County

1.5 Significance of the Study

The study significantly advances small- and medium-sized business finance theory, policy, and practice. It extends finance scholarship by providing a framework that integrates financial advancements and their connection to monetary interventions and availability of credit in relation to small and medium-sized businesses. In particular, it

adds empirical literature on the relationship between loan availability and monetary interventions in the context of the small and medium enterprise finance. An important theoretical contribution is in providing a basis that builds our understanding on the financial innovations' function in the dissemination of monetary policy.

The policy significance of the research stems from the regulating impact of financial developments on the relationship between loan availability and monetary interventions among SMEs. Significant financial innovation has occurred in Kenya's financial sector, potentially having consequences examines how access to credit and monetary policies are related. Unfortunately, since financial innovation results in challenges to the conduct of monetary policy it is important to understand the required revision of policy and instruments to enhance monetary intervention effectiveness. Thus an investigation of financial innovations' moderating effects is an important input in crafting monetary policies. In particular, monetary regulatory institutions will find the results useful in establishing an enabling environment for financial innovations targeting financial availability to small and medium-sized businesses.

Findings from the present investigation are important for the field of finance since it focuses on the role of financial innovations as a mechanism for enhancing access to credit. Financial innovations can alter manner in which the economy is impacted by monetary policy. Thus economic agents need to understand how their involvement in creating a wide range of financing and investment opportunities would enhance the economy. More importantly, since financial innovation reduces transaction costs an appreciation of how it enhances holding of financial assets, facilitates funding and investment are of practical significance.

1.6 Scope and Justification of the Study

The study's focus is on how monetary interventions affect small and medium-sized businesses' ability to get loans operating within Kisumu County in Kenya, with a focus on the financial innovations' moderating function. The financial adjustments in this study are limited to interest rate caps, open market activities, the cash reserve ratio, and moral persuasion because these are the basic interventions used by central banks world over.

Kisumu County was chosen for the investigation since it comprises one of Kenya's 47 major counties and the economic and industrial hub of Western Kenya. It has many small and medium enterprises from several sectors which endeavor to boost the economy of Kisumu. Since the county is metropolitan in nature, it houses citizens from every part of Kenya. It is therefore perceived that a study conducted in this county is as good as a study in any other county and will be representative of the entire country.

The research was carried out in the year 2021 with registered SMEs up to 2019. There were no businesses registered in 2020 due to the corona pandemic. Primary data was used in this study as a way of obtaining more authentic information. Correlation and Regression To ascertain the kind and strength of relationships between and within the variables, analysis was used under study and to establish models that could aid in predicting use the independent factors to determine the dependent variable.

1.7 Limitations and Delimitations of the Study

1.7.1 Limitations of the Study

The target population was large, scattered and heterogeneous. Some data may have been sensitive and the respondents did not want to divulge such sensitive data. Besides, there was non-response from some participants due to their busy schedules or unwillingness to respond. There also arose an issue of language barrier because some respondents were not well versed with the language used in the questionnaire.

1.7.2 Delimitations of the Study

Due to the large, scattered and heterogeneous population, an appropriate sampling method was employed and a relatively large sample obtained to enhance representativeness Then extrapolating the results to the whole population and beyond. A sampling frame was compiled from registered little and medium-sized businesses in Kisumu County and homogeneous strata obtained from the different sectors. In the case of sensitivity of data the responsible officers were assured of confidentiality and anonymity and an assurance was given that their permission will have to be sought before divulging any information. The researcher assured the person who furnished the data that the data would strictly be used for the purpose of research.

In the instance of non-response from some respondents due to unwillingness, the researcher educated the responders about the significance of the research to them and to the policy makers. Additionally, Participants were given enough time to finish the surveys that were to be gathered later by the researcher and an assistant in cases where they were busy.

To mitigate the challenge of language barrier, where the respondents did not understand the language used in the questionnaire the researcher or the assistant translated the items and provided required explanations.

1.8 Assumptions of the Study

It was believed that each and every responder answered all the questions in the questionnaire without bias and that they gave sincere, accurate and reliable information. It was also supposing that the selected sample accurately represented the whole population. Presumably, the participants had knowledge on the items in the questionnaire and that they responded appropriately.

1.9 Operational Definition of Terms

Cash reserve ratio: The proportion of the commercial banks' deposits rendered to the Central Banks.

Credit access: Ability of MSMEs to obtain credit in the right quantity, at affordable costs with minimal requirements.

Financial innovations: Technological advances facilitating credit access by MSMEs, trading and payments by financial institutions and MSMEs, emerging financial services and instruments, new formats of organizations, products and fuller, more advanced financial markets in the economy.

Interest rate cap:	This is the restriction on the maximum interest charged on a loan facility and the minimum given on deposits to MSMEs with reference to the central bank rate.
Micro, small and medium enterprises:	Enterprises that have between 1-99 employees.
Medium enterprises:	Enterprises that have 50-99 employees.
Monetary interventions:	Process by which The amount of money throughout the economy is managed by central banks.
Moral suasion:	This is the use of directives and persuasions by the CBs to influence lending to specific sectors in the economy by the commercial banks
Open market operation:	The exchange of government securities for cash in money markets
Small enterprises:	Enterprises with 10-49 employees.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Literature Review

2.1.1 The Keynesian Liquidity Preference Theory

This research is grounded on many theories, including the Keynesian preference for liquidity hypothesis. This theory's proponent is 1936 economist J. M. Keynes. This theory states that the point when the money supply and demand schedules converge determines interest rates. Keynes also pointed out that the primary factor influencing interest rates (IR) is the manner in which control over the consumption of the future is reserved, or, more specifically, whether an individual prefers to retain cash in its liquid state or is willing to relinquish the management of cash for a predetermined amount of time. According to Appelt (2016), the preference for liquidity is a propensity that determines how much money the general public is going to keep when the interest rate is announced.

Keynes believed that although interest rates might be advantageous for forgoing liquidity, they cannot be advantageous for saving. Moreover, interest rates are thought to be the cost that balances the availability of cash resources, the incentive for forgoing liquidity, and the desire to keep wealth in cash. Ultimately, it is believed that The main tenet of the theory of demand for money is liquidity preference., whereas the theory of money supply is dependent on discretion (Appelt, 2016; Spahija, 2016).

The A significant critique of this hypothesis is that interest rate cannot be simultaneously seen in terms of price and a reward. Keynes does not explain why

reluctance to part with liquidity gives rise to interest rate in the name of compensation. This theory is limited for the following reasons: the interest rate concept is not consistent because The interest rate, which is a gauge of people's unwillingness to give up liquid assets, cannot simultaneously be the price that balances the supply and demand of cash.

The concept of interest rate is ambiguous because interest rates are not clearly recognised as both a price and a reward. Keynes also commits the logical fallacy of a vicious circle by stating that the level of interest is strictly influenced by the motive itself, but it is contingent upon the demand to feed cash resources, which is driven by speculation. The supply-side aspect of the theory is incorrect in that the variables determining liquidity preference restrict cash resources that directly affect the availability of money instead of the demand for it. The dependent variable, interest rate, is dependent on itself. Keynes ignored exchange rates while developing his theory of interest rates since they had an effect on the idea of interest rates as well as the demand for money. He departed from the economics of value which is based on prices in a classical or neoclassical meaning (Appelt, 2016).

This hypothesis is relevant to the study because monetary authorities can affect how people invest by regulating the amount of money in circulation and swaying people's perceptions of liquidity, which are influenced by speculative intentions.

2.1.2 Knut Wicksell's Loanable Funds Theory

In 1937, Robertson examined the part played by monetary variables and incorporated the money demand and supply concepts into the interest theory. This idea states that

supply and demand affect interest rates of loanable funds. It further states that demand for loanable funds arises due to investment, hoarding, and dissaving; also, because borrowing costs for investment purposes are influenced by interest rates (Kiseu, 2017).

The foundation of the loanable money theory is an expectation of full employment, which may not remain true. Additionally, even though savings are reliant on income since they fluctuate together with income, the assumption is that income and savings are unrelated. It does assume that National Income is unchanged even though it changes when investments change. This theory endeavors to integrate both monetary and actual components as interest rate drivers, notwithstanding the claims of detractors that these elements cannot be combined into a timetable (Spahija, 2016).

Loanable funds theory can be criticized for several reasons. First, it is based on an unrealistic assumption of full employment. Second, It is uncertain because it makes the assumption that income and savings are unrelated, although income and savings are related. Third, it is impracticable in that it assumes that investment, savings and hoarding are related to interest rate. Fourth, the theory ignores the effect of capital's marginal efficiency on investment. Fifth, the theory endeavors to integrate both the monetary and the actual variables as interest rate drivers, however detractors contend that these elements cannot be included in a schedule. Finally, it assumes that the national income is unchanged while national income changes with investment (Spahija, 2016).

This Theory is associated with this research because central banks regulate and influence the monetary and credit systems of their economies through interest rates. Through policies such as OMOs the CBs can influence the supply of credit and in turn affect interest rates. A variation in the values influencing demand and supply may cause a movement in the demand or supply schedules hence a movement to new equilibrium points. This theory supports the Keynesian liquidity preference theory in that both of them allude to the fact that rates of interest are based on the locations where supply and demand meet schedules. It also points out that the price of obtaining funds depends on interest rate which is in tandem with the fact that The propensity known as liquidity preference sets the amount of money that investors would hold given the interest rate.

2.1.3 Milton Friedman's Monetarism Theory

Monetarism theory has a close relationship with the money quantity hypothesis and is associated with Milton Friedman of 1912 to 2006. It states that the monetary policy's objective would best accomplished by taking the rate of increase in the money supply into account in the economy. He asserted that central banks should endeavor to ensure that money supply increases steadily and predictively. He cautioned against rapid increase of money supply positing that that would hinder productivity and eventually cause inflation. He recommended a steady increase in money supply which would cushion against massive unemployment (Whelan, 2020).

Monetarism theory which borrows heavily from The money quantity theory makes the assumption that price correlates directly with the amount of currency present in the economy. The speed of money is also assumed to be fixed and is taken to be

uniform. They also assume that when the level of stock of money rise, the level of prices rise too while not interfering with the output and consumption (Herbener, 2017).

One criticism of the monetary thought is in the oversimplification of the quantity theory of money on which the monetarists' arguments are based. They posit that the existing stock of money must always purchase stock of goods equivalent to the amount of money that is worth, and cannot buy more or less. Hence if the stock of money increases then price must increase proportionately. This cannot hold water because other than purchasing goods, money has varied other uses such as acting as a store of value (Herbener, 2017).

This theory is pertinent to our investigation as it covers open market activities, interest rates, cash reserve ratios, and moral suasion as monetary interventions that can be used to increase or decrease supply of money in the economy and ensuring stability and also accessibility to credit by various sectors like SMEs.

In a nutshell, we can conclude from The loanable funds theory and the preference for liquidity above that The combination of these factors determines the equilibrium interest rate several factors and the equilibrium point keeps on changing due to the changes in these factors. Keynes on the one hand argues that liquidity preference tends to fix the amount of money that the general public will own after interest rates are applied. According to Keynes demand for money due to Interest rate sensitivity affects speculative motivation and therefore gradual changes in interest rates

determine the total amount of money needed to fund speculative activities. Keynes concludes that money supply and liquidity preference determines interest rates.

Loanable funds theory on the other hand claims that supply and demand for loanable money affect interest rates. The equilibrium interest rate, according to this theory, is located where the supply and demand curves for loanable funds cross. Further, risk premium is determined by both the lender and the borrower. Also, many lenders prefer to lend short term due to lower risk and higher liquidity while many borrowers favor longer maturities due to greater flexibility in using the fund leading to higher rates and an increase in the demand for borrowing.

Monetarists reiterate that monetary policy is a far more effective channel that can be used to manage the economy by increasing the money supply steadily hence controlling inflation and unemployment. The three theories inform all the monetary interventions variables vis'avis access to credit as is depicted in figure 2.1.

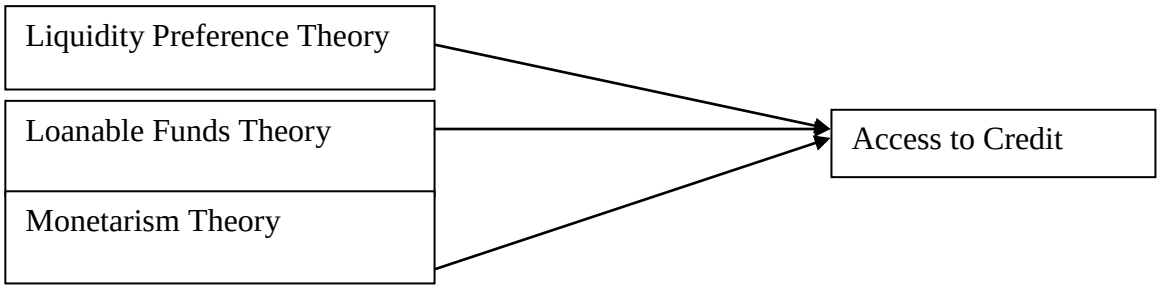

Figure 2.1: Theoretical Framework

Source: Researcher (2021)

2.2 Empirical Literature Review

2.2.1 Interest Rate Caps

Research has been done all across the globe to determine how interest rate limitations affect various other phenomena. For instance Aslam (2017) focused on issues and challenges of interest rate cap in micro-finance in Bangladesh. The study was both explanatory and descriptive in nature. Secondary data from the mixed market and micro credit regulatory authority annual reports were analyzed. The interest rate restriction was shown to have an impact on both the clients and the MFIs adversely by reducing the outreach of the MFIs and their clients incurred higher costs. Moreover, the interest rate cap exerted pressure on new SMEs and caused them to put up with the high costs of credit.

Juan et al. (2018) looked at the impact of interest rate limits on Colombian financial inclusion. Data was analyzed using a the increase of microcredit loans was compared using the difference-in-difference approach with those of the corporate sector for the years 2005 to 2008. It was established that interest rate caps facilitated financial access for the entrepreneurs with the amount received by the SMEs increasing to between 28.2% and 49.9%. The new loans also increased to between 27.6% and 52.6%. The investigation revealed that interest rate caps encouraged and facilitated financial access by entrepreneurs. This is contrary to most of the findings on interest rate caps in other regions.

The investigation by Ferrari et. al. (2018) on Interest Rate Ceilings: Concepts and Application was a global, regional and local case study on different selected countries in the UK, India, Cambodia, West African Economic Monetary Union, Zambia and

Kenya between the years 2016-2017. The study found that as much as interest rate caps may bring down lending rates and assist in reducing predatory lending, they do have unforeseen side effects. As such, the nominal rates may be lower yet there may be other costs which culminate into higher fees. This eventually leads to reduced credit access by the small and risky sectors.

Okoro et al. (2018) conducted a research on the efficiency of monetary policy and financial intermediation in Nigeria. The study estimated how interest rates affected bank advances and loans. The typical The Central Bank of Nigeria and statistics bulletins' secondary data were analyzed using the least squares (OLS) approach. The findings demonstrated that interest rates significantly influenced bank advances and loans in Nigeria.

Goodluck (2022) studied interest rate effects caps on MFI sustainability in Tanzania. The study utilized primary data collected through an in-depth face to face interview of 53 respondents from 10 MFIs. The 10 MFIs were selected through purposive sampling method. It was found from the study that interest rate cap led to credit and capital diversions, unstated non-interest fees. It also led to the emergence of informal lenders and banks withholding credit from the more risky borrowers. It concluded that interest rate caps disrupted the MFI’s sustainability.

Okwany (2017) carried out an exploratory investigation on how Kenyan commercial banks' operating performance metrics are affected by interest rate caps. It was a KCB case study which took a design for descriptive research. Primary information was gathered from sixty workers of selected KCB branches using questionnaires. Data

analysis was done through descriptive statistics which was shown using pie tables and charts for frequency distribution. The findings showed that the interest rate ceiling increased non-performing loans which is an aspect of cost hence reducing credit uptake and also leading to a decline in the quantity of loans granted.

The viability of microfinance institutions within Nairobi County and interest rate control were the main topics of a 2017 research by Kathomi et al. The research was descriptive in nature. survey in which a census on 49 MFIs was conducted. Data, both primary and secondary, were gathered and examined using correlation and ANOVA. It was found that IR The Kenyan government's capping policy increased expenses and decreased returns, which had an impact on the MFIs' capacity to remain sustainable. It also established a substantial inverse link between loan rates and MFI stability. In the current study more constructs under the independent variable were studied. It used a sample of 420 SMEs and also focused on access to credit by the SMEs.

In a 2017 study, Kiseu looked at how interest rate caps affected the total amount of loan available from Kenya's commercial banks. We collected secondary data from 40 commercial banks' published financial accounts both prior to and following the cap. Inferential as well as descriptive statistics were applied to the data analysis. It was discovered that interest rate laws don't appear to have any influence on how commercial banks make loans. It also discovered that the control did not cause credit to grow quickly. It was determined that credit growth following the cap was not particularly rapid.

The investigation of Nyakio (2017) on the effect on the consequences of the financial institutions listed on Nairobi's Security Exchange of the CBK's most recent interest rate limit was conducted through an observational survey in which data was collected using check lists. A census was carried on the 11 listed banks and Inferential statistics were used in the analysis of the data. The findings revealed Between the third as well as fourth quarters of 2015, there was a negative correlation among lending rates as well as stock prices and a positive correlation between the same in the third and fourth quarter of 2016. It was also established that the share prices of the banks dropped drastically when the IR cap was introduced since the cap made the shares of the banks unattractive. The current study focused on more monetary interventions with respect to the SMEs which resulted into both a conceptual and contextual gap.

Mehnaz and Bilal (2018) drew evidence on the financial sector's reaction to Kenyan commercial banks' interest rate limits. The research utilized both quantitative and qualitative data gathered through interviews. Bank-level panel data prior to and after the cap- 2015 to 2017 were also obtained and analyzed. The study established a significant drop in total lending while there was a rise in non-performing loans. It was also deduced that lending deviated away from the SME sector and tended towards the more safe government clients. It was also found that there were increased commissions and non-interest costs, which decreased access of credit by SMEs. It was therefore concluded that financial access was curtailed by the capping of interest rates.

Interest rate restrictions' consequences for Kenyan commercial bank accounts financial performance was examined by Kavwele et al. (2018). The study collected

secondary data for four the four quarters of the fiscal year prior to the capping years after the capping of the financial statements the banks' part. The data Multiple regression analysis was used to examine the data, and the t-test was utilised to determine the relationship between the variables and one another. It was established showed interest rate caps had a statistically important detrimental impact on banks' bottom lines.

Alper et al. (2019) conducted an enquiry on interest rate controls in Kenya. Secondary quarterly data from 2000Q1-2018Q1 were analyzed. Methods of analysis included a static specification, auto regressive distributed lag specification and bivariate VAR specification. According to the report, the interest rate control legislation had the opposite impact as intended, causing small banks' loan books to shrink, financial intermediation to decline, and lending to SMEs to fail. It was concluded that the adverse effects could be greatly prevented if the cap was higher to enable loaning to the riskier customers.

Mokeira (2019) investigated on the impact of loan rate caps on small and medium-sized business performance listed across the Nairobi Security Exchange. The study specifically analyzed The effect of interest rate limitations on the amount of loans received by Home Afrika Ltd. The research used a descriptive survey approach and was a case study.36 workers provided the study's primary and secondary data, and managers of Home Afrika using questionnaires. During the data analysis procedure, descriptive statistics were employed. Regression analysis was also performed, and the results revealed that interest rate capping had a favourable and noteworthy rapport

with the amount of loan advanced to Home Afrika. The study was not grounded on any theory.

Research by Korir and Oluoch (2019) on how interest rate limits impact Kenyan The financial performance of commercial banks. The study's particular objective was to determine how interest rate limitations impact loans. The classical theory of interests, the expectation notion of rates of interest, and the theory of loanable funds served as the foundation for this investigation. The nature of the study was descriptive. It made use of secondary data from the 2016 and 2017 CBK bulletin for the year prior to and following the capping. Correlation and regression analyses of data from 42 commercial banks were done. The study discovered a favourable correlation between Kenyan commercial banks' financial performance and lending rate capping. The study's conclusion was that, both prior to and following the capping, interest rate capping significantly improved return on assets.

The current study on the other hand included other monetary interventions as constructs under the independent variable and applied a survey research design. This study also focuses affecting SMEs' ability to get finance as the dependent variable and a sample of 420 finance officers/owners of the SMEs were issued with questionnaires to fill. Analysis was both descriptive and inferential in nature. A conceptual, methodological and theoretical gap existed.

2.2.2 Cash Reserve Ratio

The efficiency of the cash reserve rati as a monetary intervention has been reported by various scholars. Koila (2016) conducted studies on how monetary policy affects

Kenyan inflation. The Keynesian perspective on monetary policy, as well as the classical theory theory, monetarism theory and Taylor's Rule informed the study. It was a descriptive study in which The National Bureau and Statistics in Kenya provided secondary data for this study Kenyan Central Bank and Government Publications Reports. Time series analysis and multivariate regression was used to analyze data for the years 2009-2013. It was observed that reserve ratio requirement correlated negatively with inflation.

Primus (2016) studied on how well monetary policy works in small economies that was conducted in Barbados, Trinidad and Tobago. It evaluated the effect of reserve requirement on lending. It also examined the effects of the use of indirect and direct employing vector automatic regression model using exogenous variables to implement monetary policy variables (VARX). The findings suggested that raising the necessary reserve ratio reduced private sector credit and excess reserve and also eliminated pressure on exchange rates. It concluded that the commercial banks in the small economies should continue using the cash reserve ratio as a complement to other interventions.

Dhungana (2016) also carried out research on how Nepalese banks lend money in relation to monetary policy. The research specifically looked for a connection between lending by banks in Nepal and the cash reserve ratio. 24 banks' panel data for the given time 1996-2015 was obtained. Descriptive statistics was used to examine data using both correlation and regression methods of analysis. It was determined that bank lending and reserve ratios were negatively correlated.

A study by Barata et. al. (2017) on the credit supply responses to reserve requirements aimed to ascertain the consequences of reserve requirement on credit supply in Brazil. The study explored a large data set using a difference-in-difference strategy in a long panel and in a cross section. It estimated the average effect of credit supply on several changes on reserve requirement from 2008-2015 using a macro-prudential policy index. It found that banks tended to lend less to the more risky sectors. It also found that when reserve ratio was lowered then more credit was issued and when it was raised then less credit was loaned out. The study concluded that when reserve ratio was raised, it affected lending less than when it was lowered and that bank credit supply is more reactive to easing than to tightening of reserve ratio.

Zheng and Spiegel (2017) carried out an investigation on reserve requirement as an instrument of Chinese macropolitics. This study used secondary data of daily panel data from 2005-2015. This data comprised of financial statements obtained from websites and bulletins. It was found that a 1% increase in Chinese required reserve ratio resulted in an annualized reduction in the relative cumulative state owned enterprises' returns by about 33% within a narrow window time of 3 days, which was significant both statistically and economically.

The research carried out by Jamel et al. (2017) on the impact of Jordan's indirect monetary instruments on production and pricing from1993-2013 endeavored to deduce the effect of Jordan's cash reserve to money supply ratio. Study secondary data were utilised for 1993-2013 which was obtained from audited accounts of financial institutions which was analyzed using a two-step regression analysis. The study was pegged on The Monetarism Theory. The findings revealed that reserve

requirements had a favourable impact on the money supply, and the correlation was substantial, The current study focused on more monetary tools in relation to credit access by SMEs in Kenya and used statistics that are both descriptive and inferential to examine the data. This gave rise to a conceptual, contextual and a methodological gap.

Based on the Loan Pricing Theory as well as Loanable Funds Theory, Garba et al. (2018) examined the impact of monetary policy tools on the lending practices of listed deposit money banks in Nigeria. The study used a causal research approach and was an ex post facto investigation. Secondary data collected from the banks' annual reports from the years 2007-2016. To examine the data, panel regression modelling was used. Based on the findings, The cash reserve ratio and bank lending practises had a negative as well as statistically insignificant association in Nigeria. It was concluded that the banks' ability to give out more credit was not influenced by cash reserve ratio.

A research investigation on financial intermediaries and the efficacy of monetary policy was implemented in Nigeria by Okoro et al. (2018). The purpose of the study was to determine how demand deposits were affected by the cash reserve ratio. Its basis was the conventional understanding of monetary policy. It made use of secondary data gleaned from Central Bank during Nigeria bulletins. The results using the ordinary least squares approach analysis of the data showed that the cash reserve ratio significantly and favourably affected demand deposits. The cash reserve ratio was shown to have an impact on banks' liquidity conditions.

Bawa et. al. (2018) did an investigation on the results of the money supply's influence and ratio of cash reserves at deposit money banks profitability in Nigeria was carried out. The research used regression and correlation analysis to look at secondary data that was collected between 2002 and 2012. The results demonstrated that the earnings of Nigerian deposits were considerably and adversely impacted by the cash reserve ratio institutions.

Kigabo and Gichondo (2018) examined the possible factors that influence precautionary surplus liquidity in the banking system of Rwanda. Secondary data covering the years 2014–2016, together with the ideal level either above or beneath which extra liquidity prevents monetary policy from being tightened transmissions was analyzed. FMLOS auto regressive approach was used to analyze data. It was established that reserve ratio, change in demand for cash and In the banking system of Rwanda, the lag value of extra liquidity played a significant role in determining cautious excess liquidity.

Oganda et al. (2018) conducted a comparative examination of the effect of cash reserves on the operations of Kenya's commercial banks, focusing on National Bank as well as Equity Bank of Kenya. it took a descriptive research survey research strategy using a comparative analysis methodology. A census was done on two commercial banks using 10 year data from 2007 to 2016. Public financial accounts provided secondary data annual reports from websites and publications of the respective banks. Qualitative data was obtained through interviews using an interview schedule. Data analysis was both inferential and descriptive, using regression and correlation analyses were done and data presented in tables. The finding revealed

demonstrated the performance of Kenya's commercial banks was strongly correlated negatively with the cash reserve ratio and considerable statistical significance was attached to this link.

In their examination of the effects of qualitative fiscal policy on deposit money bank performance in Nigeria, Ogbeifun and Akinola (2019) focused on the connection between money to deposit bank productivity and the cash reserve ratio. The classical and Keynesian neo-classical ideas served as the foundation for the investigation. Secondary data for the years 1997–2016 was gathered from the National Bank of Nigeria's statistics bulletins. Ordinary least squares was used for the multiple regression analysis. The findings indicated that the ratio of cash reserves and deposit money performance of banks in Nigeria had a positive but not statistically significant relationship.

An ex-post facto analysis of the impact of statutory reserves, cash reserve ratios, and retained earnings on the profits of Nigerian deposit money banks was conducted by Okeke (2020). The principle of pecking order served as its foundation. The research used the nine investment banks' annual reports that are posted onto the Nigerian stock exchange, as well as secondary data through the financial statements. market. The data was analyzed using T-tests, spearman's rank correlation analysis, panel data a regression analysis, and descriptive statistics. It was shown that the cash reserve ratio had a small but beneficial impact on the bank's profits per share.

Akinleye and Oluwadare (2022) conducted a study about the profitability and cash reserve ratio of Nigerian deposit money banks. Purposive selection of 8 listed deposit

money banks was done. The audited yearly financial statements provided the secondary data statements, CBN annual reports and accounts of deposit money banks of selected systematically important banks. Data was analyzed through panel regression for estimating fixed and random effects, Pearson's correlation analysis and descriptive statistics. Findings indicated that CRR exerted a adverse and notable impact on Nigerian deposit money institutions' return on assets. Additionally, it was shown that return on equity was significantly and negatively impacted by CRR. The analysis came to the conclusion that CRR Has an impact on banks' profitability that was statistically significant.

Using data from Nigeria, Orji et al. (2022) conducted research on the cash reserve proportion and lending to small, medium, and micro enterprises in emerging countries. Secondary information from micro, small, including medium-sized businesses' financial statements businesses was used in the study. Quarterly data ranging from the year 2001 to 2017 was analyzed vector rectification of errors is being used. The findings showed that the cash reserve ratio uses lending interest rates and liquidity ratios as a mode of transmission to have an indirect impact on credit to SMEs.

Kiplangat (2017) concentrated on Kenya's commercial banks' performance and monetary policy. The ideas behind loanable money, financial intermediation, liquidity preference, and the traditional view of interest rates. In order to determine how the cash reserve ratio affected bank performance, a census of every commercial bank from 2011 to 2015 was conducted. The central bank's annual reports, the audited financial accounts of certain banks, and a questionnaire were used to gather secondary

as well as primary data respectively. Multiple regression and correlation analyses were performed, and the outcomes presented on tables and graphs. The study found that a unit change in the cash reserve ratio caused the performance of banks to decline.

Kimani (2018) did an assessment of monetary policies Regarding the Kenyan commercial banks' financial results according to the market power hypothesis, the agency theory, theory of interest rate parity and deflation theory. The study took the form of a causal research design in which a census was done. Kenyan commercial banks' annual panel data was collected for the years 2012-2016. Analysis was done using panel regression model. The findings indicate a negative but significant impact of the ratio of cash reserves on Kenyan banks' bottom lines.

In a comparative analysis of Kenya's National and Equity Banks, Oganda et al. (2018) looked at how the country's commercial banks performed in relation to the cash reserve ratio. A comprehensive survey research approach was used. Through interviews, panel data covering the years 2007–2016 was gathered. Inferential and descriptive statistics were utilised in the analysis of financial reports and published financial statements. The results showed a substantial negative association between the cash reserve ratio with return on equity, as well as a strong inverse relationship involving the ratio and the efficiency of commercial institutions. It was concluded that a rise in cash reserve ratio was detrimental to profitability as reserves are not assets that generate income.

Dabora (2019) carried out an assessment about the connection between financial success and monetary policy of the banking institutions in Nairobi City in Kenya. It was based on the agency theory, stake-holders theory, liquidity preference theory, theory of financial development and the economic growth theory. The investigation took a descriptive research design. 42 banks provided secondary data, which was gathered and analysed statistically utilising regression and correlation models, both descriptive and inferential. Tables and figures were used to display the data. The results show that the proportion of cash reserves had a negligible and unfavorable impact on Kenya's commercial banks' financial performance.

An analysis of the monetary policies and operational results of several Kenyan commercial banks was conducted by Mutai (2019). Two types of data were employed in the investigation: primary and secondary. The primary data was gathered using a questionnaire; the supplementary data was obtained from the Bank of Kenya's annual reports, financial statement reports, and commercial bank audit reports. The methods of multiple regression and correlation analysis were used to analyse the data. The results showed that the efficiency of commercial banks decreased by 1.053 for every unit change in the cash reserve ratio.

An examination of Kenyan commercial banks' financial performance from 2016 to 2020 with regard to monetary policy was carried out by Kithandi (2022). The quantity concept of money served as the study's foundation. 42 licenced commercial banks across Kenya made up the population of this descriptive longitudinal study design. Regression and correlation analyses were used for the analysis. The economic

performance of and the cash backup ratio of Kenya's commercial banks were shown to be negatively correlated.

2.2.3 Open Market Operations and Access to Credit by SMEs

An open market operation is another monetary intervention utilized by many central banks worldwide. Dhungana, (2016) conducted research on how monetary policy affects bank lending in Nepal. Panel data from 24 banks covering the years 1996–2015 was collected as secondary data. We looked at the data using descriptive statistics. utilizing both regression and correlation analysis techniques. It was determined that bank lending in Nepal was negatively impacted by open market operations. The impact Effect indirect financial tools on Jordan's production and prices was studied by Jamel et al. (2017). data in time series including the years 1993–2013 was used. The monetarism idea served as the study's foundation. A two-step regression technique was used to analyse the data, and it was discovered that, despite its relatively small impact, the central bank for Jordan's open market operations—which included issuing deposits and REPOs—were successful in affecting the country's money supply. Deposits and REPOs were also used in this study as frameworks for open market activities.

Peydro et. al. (2017) conducted a study on monetary policy at work focused on security and credit application in Italy. A temporal sequence of yields and prices was conducted and it was found that in times of crises, less capitalized banks tended to

buy securities rather than increasing credit supply which affected firm-level real outcomes. It was also found that more capitalized banks reached for yield which is consistent with the risk shifting hypothesis.

An assessment on The primary weapon of monetary policy being open market activities by Grogolashvili (2019) did an assessment of The primary monetary policy instrument is open market operations in Georgia USA. Panel data for the years 2015-2019 for sales and purchases of forex was obtained. Regression analysis using panel data was used to the analysis of data. The results showed that an increase in repo operations provides the banking sector with funds and that OMO is useful in managing short term money sources and stimulates liquidity of the banking sector.

Garba et. al. (2018) carried out an assessment on how monetary policy affects instruments on lending behavior of quoted banks that accept deposits in Nigeria. The investigation was an ex post facto examination with a causal research design. Secondary data gathered between 2007 and 2016 from the banks' annual reports. Panel The data was analysed using regression analysis. The outcomes posit that open market operations were negatively and statistically insignificantly related to the lending practises of Nigerian banks and that the banks' ability to give out more credit was not influenced by open market operations.

Banda (2022) conducted an investigation of the effect of open market operations on financial market growth in Zambia. The commercial banks were the intended audience of Lusaka and the Lusaka stock exchange staff. interviews and focused group discussions while secondary data was obtained from research articles for

Lusaka Stock Exchange. The results indicate that open market operations increase the reserves of financial markets and help them increase their loans.

Njiru (2016) conducted research on how monetary policy affects credit supply in Kenya. It adopted a descriptive research design using panel data for 2005-2015. Data was analyzed using regression analysis and Open market activities were shown to have a detrimental impact on credit supply.

A research on how monetary policy is affected tools on Kenyan commercial banks' efficiency was carried out by Mwangi (2016). The impact of 91-day Treasury bills and REPO rates on bank efficiency was the particular focus of the study. The study's foundations were the amount concept of money, modern theory of money, the theory for loanable money, and the Keynesian theory. The study population, that was descriptive in nature, consisted of 42 commercial banks. The Central Bank of Kenya and the Kenya National Bureau of Statistics supplied secondary data from annual reports and financial statements for the years 2011–2015, which was utilized to make the conclusions. Bank efficiency was found to be positively impacted by both the REPO rate and the 91-day T-bill rate. The monetary policy of the Central Bank was also found to have a considerable and positive influence on the efficiency of Kenya's commercial banks during the course of the research period.

Mutwiri (2017) studied on the monetary policy tools and inflation in Kenya. Secondary time series empirical data for the period 2008-2012 was collected for examination. After conducting regression and correlation analyses on the data, it was determined that there was an inverse relationship between the level of prices and the

rate of Treasury bills maturing in 91 days. It was discovered that when the government raised the rates on 91-day Treasury bills, the short-term interest rates of commercial banks also rose, limiting the public's access to funds. This study also used the 91 day Treasury bill rate as one of the sub-constructs under open market operations,

Kiplangat (2017) conducted research on Kenyan commercial banks' performance and monetary policy. The specific goal of the research aimed to ascertain the performance of Kenyan commercial banks in comparison to open market activities. All commercial banks during the years of 2011 and 2015 were surveyed. A questionnaire, the annual reports the central bank, as well as the audited financial statements of certain banks were used to gather primary and secondary data, respectively. Correlation and multiple regression analyses were done and the results presented on tables and graphs. The study found that a unit change in open market operations caused a rise in banks' performance by 0.05.

Dabora (2019) reviewed the relationship between monetary policy and the success of Kenya's banking sector financially. general public. A design for descriptive research was used for the examination. 42 banks provided secondary data, which was gathered and subjected to statistical analysis, both descriptive and inferential, using models of regression and correlation. The results show that open market activities significantly and favourably impacted Kenyan commercial banks' financial performance.

An analysis of the monetary policies and operational results of several Kenyan commercial banks was conducted by Mutai (2019). Secondary as well as primary

information were used throughout the inquiry. The primary data was gathered via a questionnaire and the yearly reports of the Reserve Bank of Kenya,as well as the annual reports including financial statements with auditing of commercial banks, were the source of the secondary data. The methods of multiple regression and correlation analysis were used to analyse the data. The results showed that commercial banks' performance increased by 0.057 for each change in unit in open market activities.

An examination of Kenyan commercial banks' financial performance from 2016 to 2020 with regard to monetary policy was carried out by Kithandi (2022). 42 Kenyan commercial banks that hold licences were the study's population, and it used a descriptive continuous research methodology. The results showed that the repo rate and the Kenyan commercial banks' financial performance were positively correlated.

2.2.4 Moral Suasion and Access to Credit by SMEs

Ryan-Collins (2016) did three empirical studies on The macroeconomic environment, credit creation, and monetary policy. The study was pegged on classical and neoclassical theories, monetarism theory and credit theory. Quarterly data was obtained for analysis using general to specific method, vector correction method and vector auto-regression method. It was found that moral suasion was effective in creating financing available to small and medium-sized businesses in Canada. This was attributed to the significant ownership concentration among chartered banks.

Ogena et. al. (2016) conducted a study in Europe on moral suasion, the European financial crisis and the government's "invisible hand." A difference-in-difference methodology was employed to evaluate monthly proprietary data on banks for the

study. According to the research, local banks had a higher chance than foreign affiliates for banks with foreign headquarters of having their governments influence them to act in their favor.

Ohls (2017) carried out an investigation on moral suasion in regional government bond markets as an invisible arm of the government in Germany. It endeavored to prove the theory that governments influence domestic banks for holding more domestic government debt via moral suasion. The ownership structure of German banks, variations in the fiscal soundness of the states, and comprehensive panel data at the bank level on German banks' state bond holdings at the security and bank levels for the quarters of 2005 and 2014 were all employed in the research. The findings demonstrated that when the home state's budgetary fundamentals are bad, state-owned banks maintain a notably larger quantity of state-specific securities than other banks due to moral suasion.

An evaluation of bank lending and monetary policy in developing nations was conducted by Abuka et al. (2019). The research centred on loan applications, approval rates, and actual outcomes in Uganda. It used secondary data for loans that were requested for and approved from 2012 to 2014. After data analysis, it was shown that banks with higher liquidity levels reacted to monetary manipulations by reducing loans more quickly than other banks. They argued that banks, under moral obligation to maintain public debt so as to fund the government, were more affected.

Research on the impact of reducing the federal reserve rate (CBR) on bank prime rates on Kenyan commercial banks was conducted by Ondieki and Jagongo (2013).

The study's focus was on description. It proved that despite the central bank's concerted efforts, lending channels, industry competition, non-performing loans, and policy barriers were the main factors influencing the reduction of lending rates, and thus, little progress was made in getting commercial banks to lower their rates. It was also discovered that the majority believed that banks could only operate efficiently in the absence of a powerful, obvious regulator, which undermined the central bank's ability to properly regulate the channels.

Romana and Razvan (2022) presented a conference paper on the use of moral suasion in monetary policies of emerging economies. The conference paper emanated from a case study of Romania. Primary data was collected using a questionnaire while The Central Bank's annual reports and the financial statements that have been audited of the were the sources of secondary data commercial banks. Analyzed data reveal that moral suasion remained an important tool for monetary intervention.

However, there is a dearth of literature—both domestically and internationally—on the application of moral persuasion to financial intervention. There is a conceptual and empirical vacuum because the majority of research, both domestically and internationally, has focused mostly on other aspects of monetary intervention and little is known about the effectiveness of moral suasion as a tactic. There is a conceptual as well as contextual vacuum because there is a paucity of literature on the subject, making it difficult to determine whether moral suasion is used in Kenya as a whole. The purpose of this study was to determine how the monetary intervention affected the SME sector's ability to obtain credit in Kisumu County, Kenya.

2.2.5 Financial Innovations and Access to Credit by SMEs

Dabrowski (2017) conducted research on how financial innovation can affect Nepal's monetary policy. The impact of financial innovations on various aspects of financial policy-making was observed. It was concluded that modifications to financial products, financial transaction processing, financial institutions, and financial industry structures could potentially impact the transmission mechanism of monetary policy and the efficacy of individual instruments of monetary policy. Additionally, it was discovered that the quick development of digital banking, payments, and money transactions seemed to have eliminated the need for currency.

Ajide (2016) did a study on Sustainable development and financial innovation in a few West African nations. It used secondary data indicators for the period 2000-2013. Regression analysis and panel data estimates were used to analyze the data. The results showed that innovation caused a decline in the demand for money, which inhibited economic expansion. It was also found that the different financial innovations adopted had different effects in the financial system of West African countries. It was also established that innovations in the banking sector had risen with new products, systems and processes being developed and that improved telecommunication networks and advanced computer technology had improved banking operations and enhanced information processing.

It was also found that automated teller machines, Online, phone, branchless, agency, e-, and SMS banking are all examples of personal computer banking. in West Africa are all consequences of financial innovations and enhance access to credit. It was however found that results show different effects on different financial innovations

used by financial institutions. For example, he discovered that financial innovations may, either lower the appetite for money by encouraging customers to favor less liquid assets over drier ones, or they could, conversely, raise the need for cash if they enhance payment systems, which in turn increases the desire for assets with greater liquidity (Ajide, 2016).

Kasekende (2016) carried out a study on financial innovations and Sub-Saharan Africa's desire for money (SSA). It was a case study which used panel data. Data was analyzed using time series, OLS and regression analysis. It was discovered that financial advances were crucial in explaining money demand in SSA and indicated there was a favourable connection between mobile payments and money demand. Current study focused on Kenyan financial interventions and credit availability MSMEs hence a conceptual and a contextual gap existed.

Masocha and Dzomonda (2018) conducted a study on adoption of mobile financial services and their effectiveness of SMEs in Zimbabwe. The study employed quantitative research methods with a descriptive research design.

Fentaw and Thakkar (2021) examined how financial innovations affected private commercial banks' profitability in Ethiopia. The study adopted an explanatory research design. Purposive sampling procedure was carried out to obtain the 16 private banks operating in Ethiopia that were studied. Secondary data for the period 2016-2020 was collected. The impact of financial innovation on the chosen commercial banks' return on assets (ROA) was investigated using regression analysis.

The findings demonstrated that advances in finance enhanced financial performance of Ethiopia's private commercial banks.

In their 2022 research, Daniel et al. examined the association between financial innovations and economic development in 26 sub-Saharan African nations between 2004 and 2017. Secondary data was gathered and examined using the estimate approach known as the generalised technique for moments (GMM). The results showed that diversity was fostered by funding advancements in the banking industry.

The local studies focusing on financial innovations included the study by Nyathira (2012) which focused on the effect of financial innovation on commercial banks' financial performance in Kenya. It was a causal research design and it drew secondary data from 43 commercial banks in Kenya. Data analysis was carried out using regression and correlation analyses. The findings reveal that financial innovations contribute to and are positively correlated to profitability in the banking sector.

Ulwodi (2013) conducted a study in both Kenya and Tanzania on financial inclusion and welfare. It did a cross-country analysis using regression analyses. It was found that agency banking had a significant positive effect on welfare of households. It was further noted that One noteworthy innovation that has a great deal of promise to enhance family welfare is branchless banking. Additionally, it was shown that socioeconomic and demographic factors had a major impact on access to savings as well as credit services in Kenya and Tanzania. Current study focused on more concepts- monetary interventions and access to credit by SMEs hence a conceptual gap existed.

In a 2013 study, Nyamongo and Ndirangu looked at monetary policy and financial innovations in Kenya and discovered that these measures had a positive effect on the exchange rate channel, which is the means by which money is transferred. In this paper, the data was analysed using the standard vector auto-regression approach.

A study on the impact of microfinance innovations on SMEs' access to financing in Kenya was conducted by Mboya (2013). Of the nine DTMs in the population, it looked at a sample of four. Descriptive statistics were employed to assess secondary data. The results showed that innovative goods, like savings and loan products, marketing innovations, micro-insurance innovations, and location innovation products, positively correlated with SMEs' access to financing in Kenya. It was depicted that these innovations had enhanced SMEs' access to finance. A conceptual and methodological gap existed.

Using secondary data, Kenyoru (2013) investigated how financial innovations affected Kenya's financial deepening. Regression analysis was used to evaluate the data, and the results showed that financial creativity had relatively little beneficial effect on financial deepening. The current research investigates loan availability and financial interventions for SMEs in Kenya using primary data. This led to a conceptual and practical gap.

A study on the impact of mobile money on Kenyan financial deepening was carried out by Kamau (2014) using a descriptive research approach. Analysis of the additional information for the years 2007–2013 was done by regression analysis. The results demonstrated that the primary factor influencing Kenya's financial deepening

was mobile money. This current study entailed more concepts and also used primary data hence a conceptual and methodological gap.

Mwinzi (2014) carried out an investigation on The impact of financial creativity on Kenya's economic expansion was conducted. It used secondary data from the CBK, KBS and other institutions which were analyzed using regression analysis. Contrary to other studies on financial innovation it found that financial innovations had an little beneficial effect on economic growth, with cell phone payments having a bigger influence. A conceptual and methodological gap was visible.

A research on mobile money transfers and the expansion of SMEs in Kenya was carried out by Simiyu and Oloko in 2015.The population was the 13350 registered SMEs and individual users within Kisumu municipality with a sample of 388 SMEs. The SMEs were stratified according to their sectors and primary To gather data, questionnaires were used. Additionally, secondary data was gathered. Statistics, both descriptive and inferential, were used to analyze the data. It revealed that mobile money transfers had made major contributions to the SME sector since many traders depended on it for their daily transactions in favor of formal banking. It was concluded that mobile money was more convenient and accessible and had reduced transactional costs as compared to formal banking. The current study encompassed more variable hence a conceptual gap existed.

Muthinja (2016) conducted research on innovations in finance and the performance of Kenyan banks using a 10-year secondary data set spanning the years 2004–2013. The models were specified using Koyck dispersed lag models and evaluated GMM stands

for system adjusted method of moments, and it is used in dynamic panel estimation. Research demonstrated a strong relationship between innovations in finance and bank profitability. Since the current study took into account MSMEs' access to financing and financial support, there is a theoretical gap.

Mwawasa and Ali conducted an assessment in 2020 of the effect of financial technologies on the financial performance of Kenyan commercial banks. It was a descriptive study project. Out of the 126 senior personnel working for Mombasa's commercial banks, 42 members of high management were selected at random. A primary data were collected by a questionnaire; the findings were then analyzed using the methods of multiple regression analysis, descriptive statistic, plus Pearson correlation analysis. The findings showed that financial institutions' innovations considerably enhanced the commercial banks' financial standing.

An illustrative study of Kenyan commercial banks' performance and financial innovations was carried out by Wanja (2020). Primary data was gathered from sixteen Kenyan commercial banks that were selected by a simple random sampling method method. From 2013 to 2017, content analysis was used to analyze qualitative data, while regression analysis was used to analyze various quantitative data. The results demonstrated that internet, mobile, agency, and ATM banking had a good and significant impact on the performance of Kenyan commercial banks.

We yet again concluded on an empirical gap due to mixed results. Few research have been done on financial innovations and credit availability, as well as monetary interventions and SMEs' access to credit. There is a conceptual gap, nonetheless, since

no research was found that evaluated the moderating role of financial innovations on the influence of monetary policies on loan availability through SMEs. Furthermore, there is a contextual vacuum because the majority of research on monetary interventions was biased toward other locations. Additionally, there is an empirical gap as a result of inconsistent research findings on the aforementioned variables. A summary of the research gaps are presented in table 2.1.

Table 2.1: Literature Review Matrix

Author	Focus	Methodology	Findings	Gaps	Focu curr stud
Abuka et. al. (2015)	Monetary policy in a developing country: Loan application and real effects in Uganda	-used supervision data set for 2010-2014 of loans applied for and granted.	-increase in interest rates led to a decrease in supply of bank credit -lending behavior of banks with high capital liquidity was different from those with low capital and less liquidity.	-the study utilized secondary data to establish findings.	-this used prim data estab the relat ps.
Okwany (2017)	Interest rate capping and operating performance of banks in Kenya	An exploratory study, analyzed using descriptive statistics.	-found that IR capping led to an increase in NPLs hence reducing credit uptakes	-the research design was exploratory in nature and analysis was done using descriptive statistics	-the curre stud a desc resea desig the was anal usin desc and infer stati
Aslam (2017)	Interest rate caps in microfinance: issues and challenges	Used explanatory and descriptive research design. Used secondary data.	-interest rate caps are detrimental for both MFIs and their clients.	Both explanatory and descriptive research designs were employed in the study. Secondary data was collected for analysis	Prim data colle in curre stud anal whic done corre and regr anal

Kathomi et. al. (2017)	Interest rate regulation and sustainability of micro-finance institutions in Nairobi County	-carried out a descriptive research survey. Analyzed data using correlation analysis and ANOVA.	-found a negative significant relationship between lending rates and sustainability of MFIs	Focused on interest rate regulation and sustainability of MFIs	Focu on mon inter ns, finar inno s acce cred
Kiseu (2017)	The effect of IR capping on commercial bank credit in Kenya	Descriptive and inferential statistics used. Secondary data was collected for analysis.	Interest rate control did not significantly affect how commercial banks issued loans, growth of credit was not drastic	Collected secondary data which was analyzed using regression analysis.	Curr stud how colle prim data was anal usin corr and regr anal
Nyakio (2017)	The effects of capping of interest rates by the CBK on the shares of banks listed by the NSE	Survey using check lists, and analyzed data using inferential statistics	Negative correlation between lending rates and stock prices, IR cap led to drop in share prices	Secondary data was collected and analyzed using regression analysis.	Curr stud prim data was anal usin corr and regr anal
Ng'ang'a (2017)	Impact of Interest Rate capping on the financial performance of commercial banks in Kenya	Descriptive Research Design was used. -collected primary data and analyzed using regression analysis.	Financial performance was negatively affected by introduction of interest rate caps Interest rate spread reduced after capping Negative relationship between asset quality and return on equity	Primary data was used.	-use prim data regr anal was

			Operating efficiency had negative relationship with return on equity		
Etemesi (2017)	Credit access from Commercial Banks and growth of SMEs in Nairobi CBD	-Descriptive research design was used. Analysis was done using correlation and regression analyses	Strong negative correlation between SMEs growth and development and collateral requirements Strong positive correlation between SMEs growth and development and knowledge on financial information Negative correlation between SMEs growth and development and high interest rates	Conceptual gap and contextual gap. Study focused on access of credit by SMEs in Nairobi	This inclu more varia mon polic finar inno s SME -stud done Kisu Cou
Mutiria (2017)	Factors affecting SME access to financing in Kiambu County	Descriptive survey using correlation and regression.	A significant relationship between types of financing available to SMEs and access to credit was established, a significant relationship between challenges and access to finance, need for collateral inhibit access by SMEs, high loan processing fees increase interest rates and lack of information inhibit access to credit, provision of exclusive loans and training enhance access to credit by SMEs	Conceptual and contextual gaps. Limited to factors affecting SMEs in Kiambu County	Limi the r finar inno s o influ of mon inter n on acce SME
Wan (2017)	Three essays on monetary policy and	Generalized autoregressive	Interest rate spreads have significant	-used Generalized	-use corre

	exchange rate behavior in Michigan	conditional heteroskedastic (GARCH) model.	impacts on exchange rate returns under conventional monetary policy regime and no impacts under unconventional regime	autoregressive conditional heteroskedastic (GARCH) model to analyze data.	and regre analy analy data.
Juan et al. (2018)	Effects of interest rate caps on financial inclusion in Colombia	-Applied difference-in- difference analysis	-policy encouraged and facilitated financial access by entrepreneurs	-used a difference-in-difference analysis method.	-app corre and regre analy
Okoro et. al. (2018)	Financial intermediation and monetary policy effectiveness in Nigeria.	assessed the extent of the relationship between financial intermediation and monetary policy effectiveness in Nigeria secondary data was analyzed using OLS method	Found that interest rate had a significant impact on bank loans and advances	-secondary data was collected and analyzed using the ordinary least squares method.	-use prim data was analy usin corre and regre analy
Mehnaz and Bilal (2018)	The impact of interest rate cap on the financial sector: Evidence from the financial sector in Kenya	-Used panel data before and after caps. Both quantitative and qualitative data collected through interviews.	discovered a sharp fall in total lending, a rise in non-performing loans, and a shift in the lending mix from SMEs to more secure corporate clients. In order to maintain their interest margins, banks also ceased to pay interest on deposits made into current accounts.	-collected panel data before and after caps. Both quantitative and qualitative data was collected through interviews.	-coll prim data a poin scale
Ferrari, Masetti and Ren (2018)	Interest rate caps: theory and practice in various regions of the world.	Case study of interest rate caps in different regions of the world	Interest rate limitations have unforeseen consequences that include decreased credit availability, non-interest fees and charges, and a	-conducted a case study of different regions.	-did study the with Kisu Cou

			decreased likelihood of loan approval for small and high-risk borrowers.		
Alper et al. (2019)	Do interest rate controls work? An evidence from Kenya	Used quarterly data from 2000Q1-2018Q1 which were analyzed using a static specification, an auto regressive distributed lag specification and a bivariate VAR specification	Found that the law on interest rate control has had opposite effects and has led to the collapse of credit to MSMEs and shrinking of loan books of small banks and reduced financial intermediation.	-the study utilized quarterly data from 2000- 2018 which was analyzed using an auto regressive distributed lag specification and a bivariate VAR specification.	-the curre stud prim data was anal usin regre anal
Mokeira (2019)	Effects of interest rate capping on the performance of small and medium enterprises listed on the Nairobi Security Exchange: A case study of Home Afrika Ltd.	Descriptive survey design using both primary and secondary data. Used descriptive statistics to analyze data. Qualitative data analyzed by themes.	Interest rate capping had a positive and significant relationship with the amount of loan taken. Loans to Home Afrika reduced significantly.	Focused on one SME listed on the Nairobi Security Exchange. -used both primary and secondary data which was analyzed using descriptive statistics. -qualitative data was analyzed by thematically.	-was restr to liste the Nair Secu Exch -utili prim data was anal quan ely.
MacCathy (2016)	Examined the effects of cash reserve ratio on the financial performance of commercial banks and their engagement in CSR in Ghana	Used secondary data from 20 commercial banks in Ghana	Found that CRR correlates positively with financial performance of commercial banks but negatively correlates to banks' level of engagement in CSR. CRR also strongly and significantly predicts financial performance of	-collected secondary data for analysis	-coll prim data was anal quan ely.

			commercial banks as is measured by ROI		
Dhungana (2016)	Effects of monetary policy on bank lending in Nepal	-used panel data of 24 banks for the period 1996-2015' analyzed data using descriptive statistics and used correlation and regression analysis	found a negative relationship between reserve ratio and bank lending	-Panel data of 24 banks was collected for analysis.	-prim data colle using five-liker
Njiru (2016)	Effects of monetary policy on credit supply in Kenya	Adopted a descriptive research design. Analyzed secondary data for 2005-2015 using regression analysis	Found that CRR had a negative effect on credit supply	-used secondary data.	-coll prim data analy
Koila (2016)	Examined the effects of monetary policy on inflation in Kenya	Adopted a descriptive research design. Used secondary data for 2009-2013 and performed a time series for the same	There was found a negative relationship between inflation and reserve requirement	-secondary data was collected and analyzed using time series.	-prim data colle and analy using corre and regre analy
Primus (2016)	The effectiveness of monetary policy in small and open economies: an empirical investigation	-utilized secondary data which were analyzed using vector auto-regression with exogenous variables	-an increase in cash reserve ratio is successful in in reducing private sector credit	-used vector auto-regression to analysis on secondary data.	- corre and regre analy was to a prim data.
Barata, Gonzalez and Bernadus (2017)	Estimated the impact of RR on credit supply in Brazil	Explored a large loan data set using a difference-in-difference strategy in a long panel and in a cross section They estimated the average effect of credit supply on several changes on RR from 2008-2015 using	They found evidence of a lending channel where more liquid banks mitigate RR policy	-used secondary data on loans from 2008-2015. -a difference-in-difference strategy was used to analyze data.	-prim data colle and analy using corre and regre analy

		a macro-prudential policy index			
Zheng and Spiegel (2017)	Reserve requirement as a Chinese macro-policy tool	-used daily secondary data from 2005-2015	-found that a 1% increase in Chinese required reserve ratio would result in an annualized reduction in the relative cumulative state owned enterprises' returns of about 33% within a narrow window of time of three days which is significant both statistically and economically	-secondary data was collected and used for analysis.	-use prim data anal
Onoh and Nwachukwu (2017)	Monetary and credit delivery in commercial banks: Evidence from Nigeria	Used ordinary least squares (OLS)	Found that cash reserve ratio had a positive relationship with loan advances	-utilized ordinary least squares method of data analysis.	-ana data regr and corr anal
Okoro et al. (2018)	Financial intermediation and monetary policy effectiveness in Nigeria	-Used secondary data which was analyzed using OLS Method	CRR had a positive and significant impact on demand deposit	-collected secondary data which was analyzed using the ordinary least squares method.	-prin data colle and anal usin corr and regr anal
Bawa, Akinniyi and Njarendy (2018)	The effects of CRR and money supply on the profitability of deposit money banks in Nigeria	-examined secondary data for the period 2002-2012 Data was analyzed using descriptive statistics and regression analysis	Results reveal that CRR has a negative and significant impact on the earnings of deposit money banks in Nigeria	-secondary data for the period 2002-2012 was utilized.	-the curr stud prim data
Kigabo and Gichondo (2018)	Examined the potential determinants of precautionary excess liquidity in the Rwandan banking	The study used the FMLOS auto regression approach	It was found that reserve ratio, change in demand for cash and lagged value of excess liquidity are	-FMLOS auto regression approach was used to analyze data.	-Dat anal usin corr and

	system during the period 2014 to 2016 and its optimal level above or below which excess liquidity becomes a constraint in monetary policy transmissions		important determinants of precautionary excess liquidity in the Rwandan banking system		regre anal
Garba, Akwe and Dang (2018).	Effects of monetary policy instruments on lending behavior of quoted deposit money banks in Nigeria	Utilized ex-post facto and causal research design. Data collected from annual reports for 2007-2016 and panel regression used for analysis.	CRR was negatively related to lending behavior of banks with statistical insignificance. Banks' ability to grant more credit is not significantly influenced by CRR.	- adopted an ex-post facto and causal research design. -secondary data was collected from the annual reports for 2007-2016 and panel regression was used for analysis.	- desc rese desi adop -prin data colle and anal usin regre anal
Kimani (2018)	Monetary Policy and financial performance of commercial banks in Kenya	Used a causal research design. Annual panel data was collected from 43 banks in Kenya for the period 2012-2016 and analyzed using panel regression model.	A negative and significant effect of cash reserve ratio on financial performance of commercial banks in Kenya was established.	-causal research design was adopted. -Annual panel data was collected from 43 banks for the period 2012-2016 -data was analyzed using panel regression model.	desc rese desi adop -prin data colle and anal usin corre and regre anal
Oganda, Mogwambo and Otieno (2018)	The effect of cash reserve on the performance of commercial banks in Kenya.	Carried out a descriptive survey research design with a comparative analysis. Panel data was collected for 2 commercial banks for 2007-2016. Data obtained through interviewing and from published financial	CRR had a strong negative correlation with return on equity. This led to a conclusion that a significant negative relationship exists between CRR and commercial banks' performance.	-adopted a descriptive research design with a comparative analysis. -Panel data was collected for 2 commercial banks for 2007-2016.	-prin data colle and anal usin regre anal

		statements and annual reports and analyzed using descriptive and inferential statistics.		-both primary and secondary data obtained –data was analyzed using descriptive and inferential statistics.	
Ogbeifun and Akinola (2019).	Impact of qualitative monetary policy on performance of deposit money banks in Nigeria.	Secondary data obtained from Central Bank of Nigeria statistical bulletin and analyzed using the ordinary least squares method.	Found that CRR had a positive insignificant relationship with the performance on Nigerian Deposit Money Banks.	-Secondary data was obtained -data was analyzed using the ordinary least squares method.	-prin data colle and anal usin regr anal
Okeke (2020)	Effect off retained earnings, CRR and statutory reserves on earnings of Deposit money banks in Nigeria.	-Used an ex-post facto research design. Historical data was collected from published annual reports and financial statements of 9 deposit money banks listed in the Nigerian Stock Exchange. Data analyzed using panel data regression analysis.	Findings suggest that CRR positively but insignificantly affects earnings per share of banks in Nigeria.	-Utilized an ex-post facto research design. -secondary data was collected from published annual reports and financial statements. -data analyzed using panel data regression analysis.	-ado desc resea desig -prin data colle and anal usin corr and regr anal
Akinleye and Oluwadare (2022).	Cash reserve requirement and banks' profitability: Evidence from deposit money banks in Nigeria	Sampled 8 listed banks purposively and used secondary data from annual financial statements. Analyzed data using panel regression of fixed and random effect estimation.	-Cash reserve ratio exerts a negative and significant effect on return on assets and return on equity of deposit money banks of Nigeria. -CRR had a statistically significant effect on banks' profitability in Nigeria.	-employed purposive sampling -collected secondary data from annual financial statements. -Analyzed data using panel regression of fixed and random effect estimation.	-emp both purp and rand samp -coll prim data the S -ana data corr and regr anal

Orji et. al. (2022).	Cash reserve ratio and credit to MSMEs in developing economies: analysis off transmission channel using Nigerian data.	-used vector error correction model to analyze quarterly data from 2001 to 2017.	A decrease in cash reserve ratio would increase commercial banks' lending to SMEs.	-quarterly data from 2001- 2017 was collected. -vector error correction model was used to analyze data.	-coll prim data was anal usin regr anal
Kithandi (2022)	Monetary policy and financial performance of commercial banks in Kenya.	-Used descriptive longitudinal research design, with data collected for the years 2016-2020 from 42 licensed banks in Kenya.	There was a negative relationship between CRR and financial performance of commercial banks in Kenya.	-adopted a descriptive longitudinal research design data from 2016-2020.	-a desc resea desi adop
Njiru (2016)	Effects of monetary policy on credit supply in Kenya	Adopted a descriptive research design. Analyzed secondary data for 2005-2015 using regression analysis	Found that OMO had a negative effect credit supply	-collected secondary data.	-use prim data.
Mwangi (2016)	Effects of monetary policy instruments on efficiency of commercial banks in Kenya	-research design was descriptive in nature with a population of 42 banks. Analyzed secondary data for 2011-2015.	-found that 91 T-bill rate, forex rate, CB CRR and CBR had positive effects on bank efficiency. It was also found that CB monetary policy had a positive and significant impact on efficiency of commercial banks in Kenya for the period of study	-utilized secondary data	-use prim data.
Jamel et. al. (2017)	The influence if indirect monetary tools on price and output: the case of Jordan 1993-2013 banks and bank systems	-used time series data for 1993-2013 and analyzed using a two-step regression analysis.	-they found that OMOs of the CB of Jordan have been effective in influencing the money supply.	-used secondary data.	-use prim data.
Mutwiri (2017)	Monetary policy tools and inflation in Kenya	-used secondary time series empirical data which were analyzed using correlation analysis.	-found that inflation and money supply are closely correlated and that general level of	-collected secondary data.	-coll prim data.

			prices increased with increase in money supply. They also found that a 91-day T-Bills had an impact on the level of inflation		
Peydro et. al. (2017)	Monetary policy at work. Security and credit application registers at evidence in Italy	Conducted a time series of prices and yields	Found that in times of crisis less capitalized banks tend to buy securities rather than increasing credit supply hence affecting firm-level real outcomes. On the other hand, more capitalized banks reach for yield which is consistent with the risk-shifting hypothesis	-analyzed data using time series method.	-ana data corre and regre anal
Kiplangat (2017)	Monetary policy and performance of commercial banks in Kenya.	A census was done on all commercial banks. Primary data was collected using a questionnaire and secondary data for the year 2011-2015 was obtained from the commercial banks annual reports repository. Correlation and multiple regression analyses were done.	The findings indicated that a unit change in OMO led to an increase in performance of commercial banks in Kenya.	-conducted a census -collected both primary and secondary data.	-use purp and rand samp to the samp -coll prim data.
Dabora (2019)	Relationship between monetary policy and performance in banking institutions in Kenya. A case study of commercial banks in Nairobi.	Used a descriptive research design. Secondary data of 42 banks were collected and analyzed using descriptive and inferential statistics.	The results revealed that OMO had a positive and significant influence on financial performance of commercial banks in Kenya.	-adopted a descriptive research design. Secondary data was collected and analyzed using descriptive and inferential statistics.	-prin data utiliz the c study

Grigolashvili (2019)	Open market operation as a main tool for monetary policy.	Panel data for 2015-2019 was collected from countries in different regions around the world.	It was found that OMO is useful in managing short term sources of funds.	-used secondary data.	-used seco data.
Banda (2020)	Impact of OMO responses on financial market growth in Zambia.	Primary data collected through interviews and focus group discussions. Secondary data obtained from research articles, internet and library for Lusaka Stock Exchange.	Findings reveal that OMO increases reserves of financial markets and help them increase their loans.	-collected primary data through interviews and focus group discussion. Also collected secondary data.	-utili prim data.
Ondieki and Jagongo (2013)	Effects of lowering CBR on prime rates of Kenyan commercial banks	Descriptive research design	It was discovered that little progress had been made in getting the commercial banks to reduce their lending rates, despite the CBK's aggressive efforts. This was due to the fact that non-performance loans, industry competitiveness, regulation impediments, and lending channels were the main factors. Additionally, it was determined that the central bank's ability to successfully control the channels went against the popular perception that banks would only function vigorously in the absence of a strong	Adopted a descriptive research design.	Ado desc resea desig

			and visible regulator.		
Ryan-Collins (2016)	Credit creation, monetary policy and the macro-economy: three empirical studies	VAR analysis of 50 year quarterly data of 50 years in the Canada.	Found that moral suasion was efficient in Canada due to high concentration of ownership among chartered banks	-used secondary data. -analyzed data using vector auto regression	-use prim data was anal usin regr and corr anal
Ogena, PopovandNeeltje (2016)	The invisible hand of the government: "moral suasion" during the European debt crisis	Used monthly propriety data on banks and analyzed data using difference-in-difference methodology	It was found that domestic banks are more likely to be swayed by their governments than foreign affiliates of banks headquartered in other countries	-collected secondary data. -analyzed data using difference-in-difference methodology	-util prim data was anal usin corr and regr anal
Koila (2016)	The effect of monetary policy on inflation in Kenya	Used secondary data for 5 years (2009-2013) and analyzed using time series	Observed that banks put forth some control on fiscal institutions by moral suasion	-collected secondary data for (2009-2013) which was analyzed using time series.	-coll prim data was anal usin corr and regr anal
Ohls(2017)	Moral suasion in regional government bond markets in Germany.	Did hypothesis testing. Used bank-level panel data for Q4 2005-Q2 2014.	Results reveal that state-owned banks hold a significantly higher amount of home state bonds than other banks when fiscal fundamentals of the home state are weak.	-utilized secondary panel data for 2005-2014.	-util prim data.
Abuka, Alinda, Camelia and Peydro (2019)	Monetary policy and bank lending in developing countries: loan applications, rates and real effects in Uganda	Used secondary data	It was discovered that banks with greater liquidity react more forcefully than other banks to a tightening of	-collected secondary data	-coll prim data.

			finances by reducing loans. This effect is more pronounced for banks that are more susceptible to moral suasion, which is the practice of banks being under pressure to hold government debt in order to support the government.		
Ajide (2016)	Financial innovation and sustainable development in selected countries in West Africa	-used secondary data for the period 2000-2013 and analyzed using panel data estimation and regression analysis	-found that there was a reduction in demand for money due to innovation which would deter economic growth -they also found that there were different effects of different financial innovations adopted in the financial system	Focused on financial innovation and economic development	Focu on mod g re finar inno s o effe mon inter ns acce cred SME
Midika (2016)	Effects of digital finance on financial inclusion in the banking industry in Kenya	-did a descriptive research with a population of 44 banks and a sample of 13 banks. Analyzed secondary data using regression and correlation analyses.	-found an insignificant negative relationship between agency banking, mobile banking and internet banking and financial inclusion	Focused on digital finance and financial inclusion	Focu on mon inter ns, finar inno s acce cred SME
Kasekende (2016)	Financial innovations and money demand in SSA	-time series analysis, OLS and regression analysis were used	Financial innovation explain money demand in SSA A positive relationship between mobile money and	-analyzed data using time series, ordinary least squares and regression analysis.	-use corre and regre anal anal

			money demand		prim data.
Muthinja (2016)	Financial innovations and bank performance:	Used distributed lag models	A link between financial innovations and bank performance .	-analyzed data using distributed lag models.	-ana data regre and corre anal
Bernoth, Gebauer and Schafer (2017)	Monetary policy implication of financial innovation in Germany	-secondary data was collected and analyzed using time series.	Fintech has led to non-bank finance as a substitute for traditional finance	-collected secondary data.	-utili prim data.
Naomi (2020)	Financial innovations and performance of commercial banks in Kenya.	Used descriptive research design. Sampled 16 banks through simple random sampling and obtained both primary and secondary data for 2013-2017. Analyzed data using multiple regression analysis and content analysis for qualitative data.	Results indicated that internet, mobile, agency and ATM banking had a positive and significant effect on commercial banks' performance.	-adopted a descriptive research design. -obtained both primary and secondary data. -analyzed data using multiple regression analysis and content analysis.	-ado desc resea desig -coll prim data. -ana data corre and regre anal
Mwawasaa and Ali (2020)	Effects of financial innovations on financial performance of commercial banks in Kenya.	Was a descriptive survey research where primary and secondary data were collected from a sample of 126 randomly selected senior management staff of 42 banks. Data was analyzed using descriptive statistics where correlation and multiple regression analyses were done.	Financial innovation had a significant and positive effect on financial performance of commercial banks in Kenya.	-collected both primary and secondary data. -analyzed data using correlation and regression analysis.	-coll prim data was anal usin regre and corre anal
Daniel, Emmanuel and Godfred (2022)	Financial innovations and economic growth: Does financial inclusion play a mediating role?	Secondary data from selected sub-saharan African countries were collected for 2004-2017. Analysis was done using the GMM estimation	Financial innovations in the banking sector promoted economic growth. Financial inclusion fully mediated the	-secondary data was collected and analyzed using the GMM estimation technique.	-coll prim data was anal usin corre

	technique.	relationship between financial innovations and economic growth in sub-saharan Africa	and regre analy

Source: Author (2021)

2.3 Summary of research gaps

As a result of the previous discussion, conceptual, contextual, methodological, and empirical knowledge gaps were noted. Akinleye & Oluwadare, 2022; Kithandi, 2022; Okeke, 2020; Ng'ang'a, 2017; Nyakio, 2017; Okwany, 2017); elements and obstacles affecting SMEs' access to financing (Mutiria, 2017; Thuku, 2017; Bandar, 2016; Ndede, 2016); and the impact of monetary policies on the financial performance of banks were the subjects of numerous studies. There were studies on monetary interventions versus other variables rather than monetary interventions in relation to SMEs' access to credit (Mokeira, 2019; Kiseu, 2017; Putunoi, 2015), which suggests conceptual gaps.

Studies on financial interventions are biased toward certain geographic areas and did not relate them directly to SMEs' access to credit (Akinleye & Oluwadare, 2022; Kithandi, 2022; Okeke, 2020; Dabora, 2019; Mutai, 2019; Oganda et. al., 2018; Mutwiri, 2017). All the studies reviewed were lacking in the variables conceptualized in this study concurrently and also there were no similar studies that had been conducted in Kisumu County leading to both a conceptual and a contextual gap respectively.

Additionally, some of the associated studies' contradictory findings led to empirical gaps. For example, Kiseu (2017) discovered that the interest rate cap had no discernible impact on the loan-making practices of commercial banks. Awino (2013) also found that the need for loans is not usually impacted by elevated rates of interest, and that SMEs are not particularly concerned about them. On the other hand, Juan et al. (2018) claimed that interest rate caps improved business owners' access to finance. However, the majority of the findings hinted that interest rate caps and high interest rates are a big worry for SMEs because they, in part, make it harder for them to get credit (Etemesi, 2017; Mutiria, 2017; Avevor, 2016; Bandar, 2016).

There were also differences in methodology by some studies and the current study. For instance, there were studies that used secondary data which were analyzed using methods not used in the current study such as GMM, VAR and time series analysis among others (Daniel et. al., 2022; Ryan-Collins 2016; Jamel et al., 2017). Differences in the theories on which the studies were anchored were also evident (Kimani, 2018; Okoro et. al. 2018; Orji et. al. 2022; Simiyu and Oloko, 2015) In light of this, this investigation evaluated the impact of financial developments and their impact on the SMEs in Kisumu County's ability to obtain financing.

2.4 Conceptual Framework

The theoretical structure seen in figure 2.2 is a distillation of the empirical literature on monetary interventions, access to credit and financial innovations as adjusted to the SME industry's needs. The research postulated that SMEs may access more credit through monetary interventions. The relationship is however moderated by financial innovations.

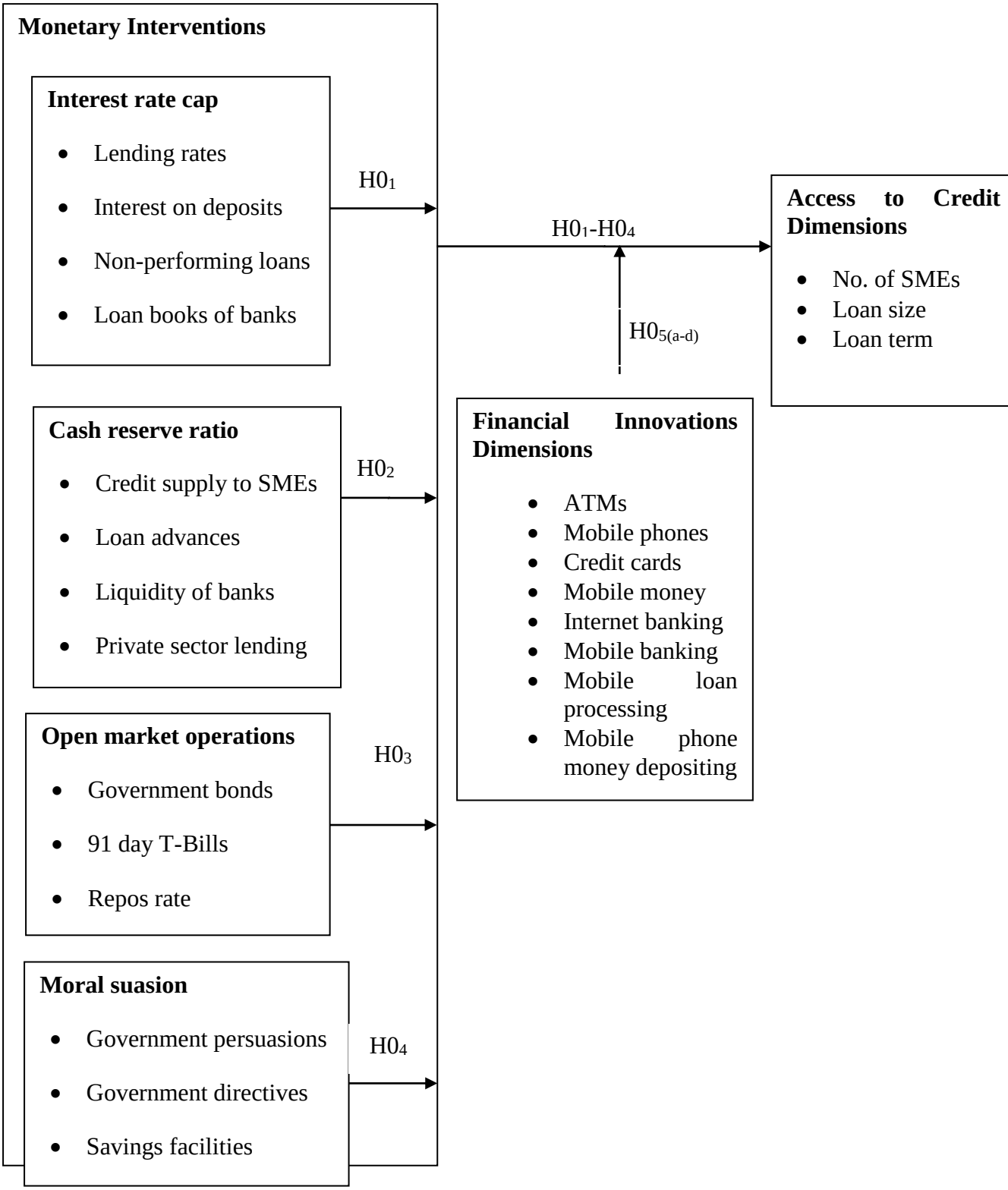

Figure 2.2: Conceptual framework

Author: Researcher (2021)

The link between financial innovations, monetary interventions, and loan availability is illustrated by the theoretical structure in Figure 2.2. In figure 2.2, access to credit is conceptualized as being dependent on monetary instruments used by the central bank to influence supply of loanable funds.

Figure 2.2 posits that interest rate capping, requirements for the cash reserve ratio, open market activities, and moral persuasion do influence supply of credit. Policy makers and economists argue that monetary interventions work mainly through interest rates. They note that when monetary policies are tightened, interest rates rise, causing banks should raise their lending rates which cause a reduction in spending by the sectors that are sensitive to interest rate. This in turn increases cost of credit hence lowering credit demand. Lower interest rates cause depreciation of currencies causing the CBs to adjust the CBR upwards to make the borrowing cost to be higher hence making loans unattractive (Kimani, 2013).

The cash reserve ratio influences interest rates and borrowing for a nation rate by altering the quantity of loanable funds. There are fewer loanable funds the greater the reserve ratio, and vice versa. On the other hand, OMO indirectly manages the overall money supply by regulating short-term rates of interest and the amount of cash in an economy. When the CB buys security through OMO, it raises money supply and when it sells security money supply is lowered (Kamau, 2015). The CBs also uses moral suasion to persuade banks to lend to certain vulnerable sectors of the economy and this can actually improve credit access.

Access to credit on the other hand include variables such as number of customers who can access loans, the number of financial institutions that advance credit, quantities of credit that can be accessed or loan size, the cost of these credit and the loan term by the financing institutions. It is hypothesized that if monetary interventions are well managed, then these should increase supply of credit in the financial institutions to enable SMEs access finance in terms of the required quantity, at a reasonable cost and at an acceptable repayment period.

Financial innovations according to this study should ensure improved information availability, speedier transaction processing, and increased liquidity at a reduced risk. The financial innovations include organizational, product, process and service innovations. It is hypothesized that organizational, product, process and service innovations would enhance credit access in terms of the number of SMEs that would access, the quantity of loans that would be advanced, the loan term and reduction in cost of credit in spite of the direction of interest rates, reserve ratio, free market activities, or persuasion of morality. This study looked at how monetary interventions, the independent variable that depends on giving particular attention to the SME sector in Kisumu County, Kenya, affected loan availability. The study also aimed to determine how financial innovations, the moderating variable, affected the connection between credit availability and monetary interventions.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Philosophy

This study embraced a positivist philosophy, whose proponent is Auguste Conte of 1798-1857. Positivist philosophy is based on a scientific method of research. Conte posited that experiments, observation and reasoning from experience should be the ground for understanding behavior and is the way of disseminating knowledge and understanding. (Aliyu et. al., 2015).

Research paradigms entail epistemology, ontology, methodology and axiology which describe knowledge; assumptions; designs, methods, approaches and procedures; beliefs, norms and values, for the different philosophies. Ontologically, the positivism paradigm assumes that the true essence of reality is objective and regulated by the laws of cause and effect. It also presumes that a predefined sequence or pattern might be discovered. It claims that neither time nor space can limit realityand that it can be generalized. It states that human beings are rational and are shaped by external factors, that is, similar causes have similar effects on each and every one (Kivurya & Kuylni, 2017). These were also the assumptions held by this study.

Epistemologically, this philosophy holds that A methodical definition of knowledge would include established theories that are regarded as laws and facts. It also presumes that knowledge is accurate and sure and that research findings are true if they are observable and measurable, replicable and generalizable (Aliyu et. al., 2015). This study shares the same opinion.

This study, just like the positivist paradigm posits that the studies done by positivists are empirical in nature, are structured and are replicable and the variables can be quantified and directly manipulated. As such, the studies include surveying, verification of hypotheses, statistical analyses and quantitative descriptive studies, of which were also covered in this study. This philosophy states that Research on values has no place in science as values are value-free and all bias must be avoided (Aliyu, et. al., 2015).

To accomplish its goals, the current study used the positivist philosophy. The decision was made because hypotheses were developed in order to experimentally establish the correlations between the variables. As a consequence of positivism, the researcher was guided by the research problem, questions and hypotheses in applying various research methods. The strategies included survey research, verification of hypotheses, statistical analyses and quantitative descriptive studies. The study was generally deductive in nature and stressed on practical outcomes and solutions. This emanated from the scientific approach that was given to this study which involved problem identification, definition of research objectives and methods of achieving the objectives, conducting an analysis, interpreting the results and finally drawing conclusions (Saunders, 2016).

3.2 Research Design

In this study, a descriptive research approach was used. Studies that are descriptive in nature aim to characterise the traits of a certain person or group and ascertain how often certain events occur. or its association with something else (Micheal,2000; Saunders et. al., 2003). As was also the case in this study, the design of such

investigations focuses on formulating the objectives, creating strategies for data collection, choosing the sample, gathering data, processing and evaluating the data, and presenting the findings (Kothari, 2004; Micheal, 2000).

3.3 Study Area

Such studies, like this one, concentrate on formulating the objectives, creating data collection strategies, choosing the sample, gathering data, processing and interpreting the data, and disseminating the results (Kothari, 2004; Micheal, 2000). Credit availability can help SMEs play a bigger part in reducing poverty, redistributing income, and addressing other social and economic issues that the people living in the Lake Victoria region face. Kisumu County was selected for the study due to its high poverty, income inequality, and social problems index, which have impeded the county's growth and development and, consequently, possibilities. Therefore, among other things, economic interventions are required to address the impact of social and economic difficulties (KCIDP, 2018).

3.4 Target Population

The proprietors of small and medium-sized businesses in Kisumu County were the focus of this study for the businesses run by the owners or the finance officers of the SMEs where the owners have employed people to be in charge of running and maintaining the books of their businesses. The number of SMEs is enormous, dispersed, and potentially unlimited. As a result, the population was deliberately

chosen to consist of the owners or financial officers of SMEs that were registered in Kisumu County, namely in the subcounties of Kisumu Central and Kisumu East. This gave a total population of 1472 owners or finance officers of registered SMEs drawn from various sectors of businesses in Kisumu County as is depicted in table 3.1.

Table 3.1: Distribution of Target Population

SUB-COUNTY	NUMBER OF REGISTERED SMES
KISUMU CENTRAL	1063
KISUMU EAST	409
TOTAL	**1472**

Source: City Hall Kisumu County (2021)

The owners or finance officers of the sampled SMEs, who were the units of analysis, filled in the questionnaires. This is because these officers were perceived to have some knowledge on monetary interventions, financial innovations and access to credit by SMEs. This population comprised of owners or finance officers of SMEs from various sectors in business such as communication, transport, hospitality, medical, education, trade and industry. Table 3.1 gives the distribution of the owners or finance officers of the SMEs according to their Sub-Counties.

3.5 Sampling Design and Sample Size

Sampling is the process of choosing a portion of the population which should have features of the population for purposes of generalizing the findings to the entire population. It is done to alleviate hindrances with respect to time, finances and logistics just to mention but a few of the constraints (Gathi et.al., 2019).

3.5.1 Sampling Frame

A sampling frame is a list of all sampling units under study from which the sample is taken. Sometimes it may not be possible to directly draw a sample from a population necessitating the researcher to either prepare a sampling frame or use an existing list. The researcher should always ensure the sampling frame is representative of the population (Kothari, 2004). The sampling frame consisted of 1472 owners or finance officers of registered SMEs obtained from the City Hall of Kisumu County. The owners or finance officers of the SMEs were selected as the primary informants because they were thought to be experts on the topics this study was looking into. They were regarded as particularly informed on the potential role of financial innovations in the relationship between monetary actions and the availability of financing for SMEs.

3.5.2 Sampling Procedure

The sub-countries under research were obtained using the purposive sampling approach, which produced a representative group of the proprietors or financial officers of the SMEs. The two counties' populations were then split into homogeneous

strata according to particular business sectors. The units were then sampled at random from each of these strata using simple random sampling technique. The samples per strata were obtained proportionately with respect to the number of businesses per sector (Singh & Masuku, 2014).

3.5.3 Sample Size

It is agreed that, in comparable investigations, applying Taro Yamane's formula to determine a sample size is reasonable (Singh and Masuku, 2014, Gathi et al., 2019). Taro Yamane claims that the formula yields the sample size at a 95% confidence level: $n = \frac{N}{1+N(e)^2}$ when N is the size of the population, e is the accuracy level, and n is the sample's size.

Therefore from a population of 1472, $n = \frac{1472}{1+1472(0.05)^2}$ =315. Hence the minimum required sample size was 315 owners or finance officers' of SMEs. The failure to respond rates in related research were used to appropriately adjust this figure. For example, in a related study, Maina (2015) found that 17% of respondents did not respond. Whatever the case, the researcher determined that a 25% failure to respond rate was adequate, in line with the suggestion made by Wayne (1976), who said that researchers are free to select any non-response rate they think appropriate. Hence the sample size (n) was adjusted to be: $n = \frac{100}{75} \times 315 = 420$. The 420 sample size that was acquired in the present research is thought to be sufficient to account for the failure to respond in this investigation. Table 3.2 displays the sample size distribution that was obtained.

Table 3.2: Distribution of Sample Size

		SAMPLE			
SECTOR	**POPULATION**	**CENTRAL**	**EAST**	**TOTAL**	**PERCENTAGE**
Trade	892	184	71	255	60.6
Transport and Warehousing	57	12	4	16	3.9
Service	228	47	18	65	15.5
Agriculture	31	7	2	9	2.1
Hotel, bar and restaurant	114	23	9	32	7.7
Industry (processing, manufacturing and assembly)	105	22	8	30	7.1
Health	31	7	2	9	2.1
Education	14	3	1	4	1.0
TOTAL	**1472**	**305**	**115**	**420**	**100**

Source: City Hall Kisumu County (2021)

3.6 Data Collection Procedure

Data collection involves gathering information that the researcher requires to answer the study objectives. Methods of data collection and types of data to be collected vary according to the type of research (Gathi et. al., 2019). This research used primary data collected through the use of a questionnaire given to 420 finance officers/owners of the sampled SMEs.

3.6.1 Instrumentation

The The questionnaire was the tool used in this investigation to gather data attached in Appendix II. One portion of the questionnaire asked for the respondents' biographical information. The opinions of the respondents regarding interest rate caps, cash reserve ratios, open market operations, moral persuasion, financial innovations, and credit availability for small-business owners or finance officers operating in Kisumu County were measured using a five-point Likert rating scale, which ranges from 1: Not at All to 5: To A Highly Large Extent.

3.6.1.1 Validity

Validity is the extent to which a device measures what it is intended to measure (Kimberlin & Winterstein, 2008). Both the content and the face validity of the tool were guaranteed by the supervisors' and research specialists' professional knowledge and instrument piloting. The final questionnaire was improved upon using the pilot test findings. Applying the Scalar-Content Validity Index (S-CVI), the researcher conducted additional testing to confirm the instrument's content validity. The findings are shown in Table 3.3.

Table 3.3: Scalar Content Validity Analysis Results

Variable	Number of Items	I-CVI	Above 0.9	Conclusion
Interest Rate Cap	8	0.90	Yes	Valid
Cash Reserve Ratio	7	0.90	Yes	Valid
Open Market Operations	5	0.90	Yes	Valid
Moral Suasion	6	1	Yes	Valid
Financial Innovation	8	1	Yes	Valid
Access to Credit	3	0.90	Yes	Valid
SCVI	6	**0.92**	Yes	Valid

Author: Pilot Data (2021)

The study's findings showed that the I-CVI for open market operations, cash reserve ratio, interest rate cap, moral persuasion, financial innovation and access to credit stood at 0.90, 0.90, 0.90, 1, 1, and 0.90 respectively. The Scalar-Content Validity Index was therefore 0.92. According to (Halek, et al., 2017) a threshold of 0.9 is deemed sufficient for establishing validity of the study. The results revealed that all the independent variables, the moderating variables and the dependent variable averagely obtained the threshold of 0.92 and were thus deemed valid. According to (Lassen et al., 2016) the validity of the research tool indicates that it is free from both unsystematic and systematic errors hence enabling the adoption of the results from the tool.

3.6.1.2 Reliability

The test items were presented clearly, the test instructions were easily understood, the research assistants were successfully trained for two days, and there were enough questions on the exam to increase its reliability. To ascertain the parameters under study's internal consistency, a reliability test was conducted. As a result, 42 owners or financial officers of SMEs from Vihiga town in Vihiga County participated in a pilot test of the instrument that was used to gather data. 10% of the sample, according to Saunders et al. (2003), was this. Using Cronbach's alpha, which was assessed for internal consistency dependability, a pilot study yielded a coefficient of 0.801. Kimberlin & Winterstein (2008) determined that this was satisfactory because they recommend an agreement level of 0.7 and above. The results of the dependability test conducted during piloting are shown in Table 3.4.

Table 3.4: Reliability Statistics

Variable	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of items
Interest rate cap	0.768	0.766	8
Cash Reserve Ratio	0.863	.860	7
Open Market Operations	0.778	0.79	5
Moral Suasion	0.637	0.651	6
Financial Innovations	0.929	0.929	8
Credit Access	0.833	0.825	3
Average	0.801	0.8035	

Source: Pilot Data (2021)

3.6.2 Data Collection Procedure

Prior to Information was obtained, and the relevant authorities were contacted. First and foremost, the researcher was given permission by Kisii University's School of Economics and Business to apply to NACOSTI for a license to conduct research. Following the license's approval, the researcher applied for permission from Kisumu's county commissioner and director of education. Before beginning the study, the research assistants received two days of training on the terms used in the survey and how to administer it.

The researcher and study assistants distributed the questionnaires, and then patiently awaited the owners or financial executives of the SMEs to finish them. The researcher as well as the helpers made a note of the time and location where the equipment was to be gathered and then returned to pick it up while the officers were occupied.

3.7 Data Analysis

3.7.1 Descriptive Analysis

For analysis, both inferential and descriptive statistics were used. In frequency distribution charts, averages, frequencies, and percentages were displayed as part of the descriptive statistics. The analysis was quantitative in nature and The analytical unit was the owners/finance officers of the sampled SMEs, who were actively involved in business.

3.7.2 Inferential Analysis

The collected data was coded and then input into the Statistical Package for Social Sciences (SPSS) for analysis. To identify connections and correlations, regression and

correlation analyses were performed. The regression model's overall robustness as well as its significance were evaluated using the F-test (ANOVA). On the other hand, the t-test was used to assess each relationship's unique significance. Multiple analyses of linear regression were used to test each hypothesis and to get the overall model, respectively, in the hypothesis testing process. The magnitudes of the dependant and predictor variables were estimated using the equations supplied by the regression analysis. The degree of variation between the variables was measured using the coefficient of determination (R2), and the the kind and strength of the relationships between the variables were displayed using the product-moment correlation of Pearson (r). The general credit access prediction models were as follows. The following was the direct generic multiple linear regression model:

$Y = \beta_0+\beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$, and the direct simple linear regression models were:

$Y = \beta_0 + \beta_1X_1 + \varepsilon_i$; …….Model 1

$Y = \beta_0 + \beta_2X_2 + \varepsilon_i$; …….Model 2

$Y = \beta_0 + \beta_3X_3 + \varepsilon_i$;……..Model 3

$Y = \beta_0 + \beta_4X_4 + \varepsilon_i$……..Model 4

Where Y is the composite index of credit access by SMEs in Kisumu County,

X_1, is the composite index of interest rate cap

X_2, is the composite index of cash reserve ratio

X_3, is the composite index of open market operations

X_4, is the moral suasion composite index and

$\beta_1, \beta_2, \beta_3, \beta_4$, are the regression coefficients for each monetary intervention.

β_0 is the y-intercept and ε_i are the random error terms accounting for variability in credit access.

The possibility that Financial innovations (FI) have the potential to control how money intervention (MI) and credit access (CA) was investigated through a hierarchy using multiple regression studies. It was necessary to include the independent variables (IRR, CRR, OMO, and MS) in the model initially since they determine the outcome variable, loan access. The second step involved computing the interaction terms, Z, W, S and T, which were the products of each independent variable IRR, CRR, OMO and MS and FI respectively. The interactions determine if the relationships explain any more variance in the variable that is dependent than just the independent factors alone. If the relationship term accounts for a statistically substantial portion of the variance in the variable being studied, there is a moderator effect. The single regression equations were presented as :$y = \beta_0 + \beta_2 x_1 Z + \varepsilon$; $y = \beta_0 + \beta_4 x_2 W + \varepsilon$; $y = \beta_0 + \beta_6 x_3 S + \varepsilon$;

$y = \beta_0 + \beta_8 x_4 T + \varepsilon$

The variables relating to the independent variables are:x_1(IRR), x_2(CRR), x_3(OMO) and x_4(MS). Z, W, S, T are the interactions of the independent variables with the moderator variable FI, β_0 is the y-intercept, β_2, β_4, β_6 and β_8 are the coefficients with respect to the interactions of the independent variables and the moderator. They provide estimates of the moderation effect. If they are statistically different from zero, then there is a significant moderation (Fairchild& MacKinnon, 2009). The overall moderation equation was: $y = \beta_0 + \beta_2 x_1 Z + \beta_4 x_2 W + \beta_6 x_3 S + \beta_8 x_4 T + \varepsilon$.The

regression models for testing each of the hypotheses were presented in table 3.5.

Table 3.5: Analytical Models

Objective	Hypothesis	Analytical Model	Interpretation
i. To ascertain how the interest rate cap affects micro, small, and medium-sized businesses' ability to get credit	H01: The inability of small- and medium-sized businesses to secure finance is not statistically significantly impacted by the interest rate cap..	$Y = \beta_0 + \beta_1 X_1 + \varepsilon_i$, where Y is composite index of credit access, β_0 is y- intercept, $X_1$is the composite index of interest rate cap, $\beta 1$ is the regression coefficient of interest rate cap and $\varepsilon_i$is the random error term.	F-statistics with p < = 0.05, implies that the model is fit to predict credit access. For t-test, beta coefficients determine the individual significance of the relationship. If $\rho \leq .05$, then reject null hypothesis and accept alternative. If $\rho > .5$, the converse is true. R^2 indicates the variation in γ attributable to x.
ii.To determine the effect of cash reserve ratio on access to credit by micro, small and medium enterprises	H02: The cash reserve ratio exhibits no statistically significant impact on micro, small, and medium-sized businesses' ability to obtain credit.	$Y = \beta_0 + \beta_2 X_2 + \varepsilon_i$, where Y is the composite index of credit access, β_0, is the y-intercept, X_2 is the composite index of cash reserve ratio, β_2 is the regression coefficient of reserve ratio and ε_i is the random error term.	F-statistics with p < = 0.05, implies that the model is fit to predict credit access. For t-test, beta coefficients determine the individual significance of the relationship. If $\rho \leq .05$, then reject null hypothesis and accept alternative. If $\rho > .5$, the converse is true. R^2 indicates the variation in γ attributable to x.
iii. To ascertain how open market operations affect micro,	Access to finance is not statistically significantly impacted by open market activity for micro, mid, and	$Y = \beta_0 + \beta_3 X_3 + \varepsilon_i$, where Y is the composite index of credit access, is the y-intercept, is the composite index of open market	F-statistics with p < = 0.05, implies that the model is fit to predict credit access. For t-test, beta

small, and medium-sized businesses' ability to obtain credit	medium-sized firms.	operations, β_3 is the regression coefficient of open market operations and is the random error term.	coefficients determine the individual significance of the relationship. If $\rho \leq .05$, then reject null hypothesis and accept alternative. If $\rho > .5$, the converse is true. R^2 indicates the variation in γ attributable to x.
iv. To ascertain how moral persuasion affects micro, small, and medium-sized businesses' ability to get financing	H04: There is no statistically significant impact of moral persuasion on micro, small, and medium-sized businesses' ability to obtain finance.	In the equation Y = β0 + β4X4 + ε, y-intercept, the composite index of ethical suasion, the coefficient of regression of moral suasion (β4), and random error term are all represented.	F-statistics with p < = 0.05, implies that the model is fit to predict credit access. For t-test, beta coefficients determine the individual significance of the relationship. If $\rho \leq .05$, then reject null hypothesis and accept alternative. If $\rho > .5$, the converse is true. R^2 indicates the variation in γ attributable to x.
v. To determine the impact of financial innovations on the relationship between loan availability and the interest rate cap.	H05: There is no significant moderating influence of financial innovations on the connection between loan availability and monetary policy. H05a: There is no significant moderating influence of financial innovations on the connection between credit availability	Y is equal to βo + β1X1Z + ε. Where: X1 = Composite index for interest rate cap; ε = error term; Y = Access to credit; βo = coefficient of the constant; β1 = regression coefficient or change induced in X1; Z = Interaction variable (financial innovations*IRC) that impacts the relationship of X and Y.	The proportion of variation that is projected to have increased or decreased as a result of the moderating effect is indicated by the change in the coefficient of determination (R2). The robustness and overall significance of the regression model are evaluated using F-statistics (Analysis of Variance); if ρ≤.05, the model is considered fit

	and interest rate caps.		for predicting credit access. The individual significance of the association for the t-test is ascertained by the beta coefficients. If ρ is less than.05. Accept the alternative and reject the null hypothesis; if ρ is greater than.05. The opposite is true.
vi. To ascertain how financial innovations affect the link between the cash reserves ratio and loan availability.	Hol5b. The relationship between the cash reserve ratio and credit availability is not statistically significantly moderated by financial innovations.	$Y = \beta o + \beta_2 X_2 W + \varepsilon$…… Where: Y =Access to credit; β_o = coefficient of the constant β_2= regression coefficient or change induced in X_2 W = Moderator variable (financial innovations*CRR) that affects the relationship of X and Y X_2= Composite index for CRR ε = the error term.	The percentage of variance that is projected to have risen or decreased as a result of the moderating effect is shown by the change in the coefficient of estimation (R2) Δ. The reliability and general significance of the model of regression are evaluated using F-statistics (Analysis of Variance); if ρ≤.05, the model is considered fit for predicting credit access. The unique significance of the association for the t-test is ascertained by the beta coefficients. If ρ is less than.05. Accept the alternative and reject the null hypothesis; if ρ is greater than.05. The opposite is true.
vii. To ascertain how financial	H05c: The association between open market activities and credit availability is not	$Y = \beta o + \beta_3 X_3 S + \varepsilon$…… Where:	The proportion of variation that is projected to have increased or decreased as a result of

innovations affect the link between open market activities and loan availability.	statistically significantly moderated by financial innovations.	Y = Access to credit, β_o = coefficient of the constant β_3= regression coefficient or change induced in X_3 S = Moderator variable (financial innovations*OMO) that affects the relationship of X and Y X_3 = Composite index for OMO ε = the error term.	the moderating effect is indicated by the change in the coefficient of determination (R2). The robustness and overall significance of the regression model are evaluated using F-statistics (Analysis of Variance); if ρ≤.05, the model is considered fit for predicting credit access. The individual significance of the association for the t-test is ascertained by the beta coefficients. If ρ is less than.05. Accept the alternative and reject the null hypothesis; if ρ is greater than.05. The opposite is true.
viii. To ascertain how financial innovations affect the link between moral persuasion and loan availability.	H05d: There is no significant moderating influence of financial innovations on the connection between moral persuasion and credit availability.	$Y = \beta o + \beta_4 X_4 T + \varepsilon$…… Where: Y = Access to credit, β_o = coefficient of the constant β_4= regression coefficient or change induced in X_4 T = Moderator variable (financial innovations*Moral suasion) that affects the relationship of X and Y X_4 = Composite index for moral suasion ε = the error term.	The percentage of variance that is projected to have risen or decreased as a result of the moderating effect is shown by the change in the coefficient of determination (R2) Δ. The robustness and overall significance of the regression model are evaluated using F-statistics (Analysis of Variance); if ρ≤.05, the model is considered fit for predicting credit access. The individual significance of the

	association for the t-test is ascertained by the beta coefficients. If ρ is less than.05. Accept the alternative and reject the null hypothesis; if ρ is greater than.05. The opposite is true.

Source: Researcher (2021)

3.7.3 Assumptions of Linear Regression

3.7.3.1 Test for Normality

First and foremost, a normal distribution was assumed for the population that the sample was drawn from. According to Williams et al. (2013), it was finished with the supposition that the errors, which are derived from the remainders of a model of regression of sample data, were normal. Kolmogorov-Smirnov and Shapiro-Wilk tests were used to determine whether this was normal. A p-value of less than 0.05 suggested a deviation from the assumption of normalcy, but a result that was not significant ($p>0.05$) indicated a normal distribution (Gathi et al. 2019).

3.7.3.2 Test for Homogeneity

The assumption of variance homogeneity came next. The assumption of homoscedasticity states that the dependent variables' variance is constant throughout the range of the variables that are independent. Heteroscedasticity is the result of uneven variance throughout the range of variables that are autonomous, which goes against the linear regression assumption. To evaluate the residuals' variance, a scatter plot—a plot of the regression-standardized residuals—was produced. If the scatter plot revealed that the data points were equally distributed above and below zero on

the x-axis and on both sides of the y-axis, then homoscedasticity assumption would be met (Gathi et. al., 2019; Kreiger, n.d).

3.7.3.3 Test for Multi-collinearity

Multi-collinearity, which postulates that the ideas based on the factor that is independent were not highly correlated, is another premise of linear regression. If there was a significant connection between two or more independent variables, there was multi-collinearity. The predictive ability of individual variables would be diminished in the presence of multi-collinearity. Tolerance and Variance Inflation Factors (VIF) multi-collinearity statistics were used to test multi-collinearity.

If there was a significant linear association between the independent variable and other independent variables, the VIF was established. Multi-collinearity was suggested by VIF values larger than 10, and major multi-collinearity issues were indicated by tolerance values less than 0.1. According to Field (2009), a VIF of less than three for each of the independent variables suggests non-multicollinearity, but a VIF of more than ten (VIF 10) suggests a multi-collinearity issue.

3.7.3.4 Test for Autocorrelation

Additionally, the degree of connection between the error components in the regression models—known as autocorrelation—was assumed. The test statistic generated by the Durbin-Watson tests has a range of 0 to 4. According to Gathi et al. (2019), results at

the centre of the range, 2, showed no autocorrelation, whereas values near 0 or 4 indicated higher levels of positive or negative autocorrelation, respectively.

3.8 Ethical Considerations

This study adhered to standards as required by law. It ensured honesty, objectivity, accountability, openness, thoughtful inquiry, rigorous analysis and application of professional standards. It also respected human dignity and privacy and confidentiality of respondents. The researcher ensured that each and every respondent knowingly and voluntarily accepted to be part of the research. The researcher also furnished the respondents with information on the use of the research and the nature of the required data as is prescribed by (Gathi et al., 2019). Hence if there was to be any confidential matter, the respondents were assured that permission was to be sought from them before disclosing any information to any third party.

This study also ensured that there was no falsification, fabrication and fraud in terms of collection and analysis of data by training the research assistants and monitoring their daily data collections. It tried as much as possible to be original and data obtained from various sources were acknowledged, whether quoted directly or paraphrased. This study was subjected to an anti-plagiarism procedure too, to confirm originality as per the Kisii University requirement. Finally, permission was sought from the respective relevant authorities like Kisii University, NACOSTI, County Commissioner of Kisumu and The Kisumu County Director of Education before the research was conducted.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Response Rate

420 respondents, who were selected from a sample of 1472 proprietors of SMEs with registrations, completed questionnaires. The 420 registered SMEs' owners and financial officials received the questionnaires from the researcher and her trained helpers. Table 4.1 displays the response rate.

Table 4.1: Questionnaire Return Rate

Sample size	Number	Percent
Distributed Questionnaires	420	100
Returned questionnaires	381	90.7
Not returned questionnaires	39	9.3

Source: Field Data (2021)

Table 4.1 shows that of the 400 and twenty (420) questionnaires that were distributed, 381 were completed and returned, accounting for 90.7% of the total questionnaires. This suggests that 39 surveys were not returned, accounting for 9.3% of the total sample. Nonetheless, a 90.7% response rate was attained. The total response rate of 90.7% is higher than what is advised for reporting and analysis (Mugenda & Mugenda, 2003). For analysis, a 50% return rate is sufficient (Babbie, 2003).

4.2 Screening and Preparation

Data were edited and cleaned up before being presented for the first time. An essential prerequisite for multivariate analysis is the cleaning along with screening of the raw data. Data screening aids in spotting possible violations of the fundamental ideas

behind multivariate techniques (Hair, et al., 2009). This is accomplished by handling errors, missing data, and outliers impartially. Ten surveys, or 2.4% of the 381 completed, were deemed incomplete along with could not be utilized for additional research. As a result, 371 questionnaires, or 88.3% of the sample size, were readable enough for additional analysis.

4.2.1 Analysis of Data Entry Errors

The three hundred and eighty one (381) questionnaires were all coded keyed into SPSS version 20 for further analysis. However, under variables money reserve ratio, market operations with an interest rate cap, and moral persuasion and financial innovations, there were respondents who had left blank spaces, making the responses invalid without further manipulation. Under the background information, 2 respondents never indicated their age bracket, another 2 never indicated their gender, 2 others did not state their length of stay in the business while 4 respondents did not mention their professional qualifications. Thus in total there were 10 questionnaires were removed due to incomplete responses and the questionnaires for 371 respondents were used for analysis.

4.2.2 Analysis of Outliers

A location that deviates greatly from other observations is called an outlier. The presence of outliers distorts the data, leading to equivocal findings that cannot be applied to the entire population (Hair et al., 2015). (Tabachnick et. al., 2013). The box plots in (APPENDIX III) illustrate the outliers for the following study variables: the interest rate cap, cash buffer ratio, open market operation, moral persuasion, and loan availability.

4.2.3 Analysis of Missing Data

There are several reasons why there are gaps in the data, including respondents declining to answer specific questions. The statistical evaluation will be skewed and produce inaccurate estimations if the impact of absent data is ignored. Ten respondents were eliminated because, as data entry mistakes indicate, they did not respond to questions Q1, Q2, Q4, Q5, Q6, B1, B2, B3, B4, B5, B7, C2, C3, C4, D2, E6, and F5.

4.3 Demographic characteristics of Respondents

The researcher assumed that there was a connection between the biodata of the respondents and the impact of financial innovations on credit availability as a result of monetary interventions. The primary background features were the following: age range, gender, educational attainment, duration of employment, professional credentials, and the respondents' role within the company.

4.3.1 Age of Respondents

In order to estimate the age of persons involved in operating the SMEs, those surveyed were asked to specify their age range. Table 4.2 shows the age bracket distribution for the sampled respondents.

Table 4.2: Age of Respondents

Age (YRS)	Frequency	Percent
< 20	8	2.2
20-39	262	70.6
40-59	101	27.2
60 and above	0	0

Total	**371**	**100**

Source: Field Data (2021)

According to Table 4.2's data, the bulk of respondents (70.6%) were in the 20–39 age range. Respondents with ages ranging from 20 to 59 comprised 97.8% of the sample. One plausible explanation for this could be that the majority of SMEs' owners in the research area are young people and/or adults within the age range of those who ought to be employed full-time. As a result, they have turned to business as a revenue stream. This means that authorities must enact targeted monetary policies for this particular group.

Table 4.2's data also shows that the respondents who were younger than 20 years old were underrepresented. This could be explained by the fact that most people in this age group are enrolled in school full-time. According to table 4.2's findings, strategies aimed at improving credit availability may be more effective if they concentrate on SMEs with owners who are older than 20. Ages beyond 60 were not represented among the respondents, most likely because they were unwilling to answer the questions.

4.3.2 Gender of Respondents

For the purpose to project the geographical distribution of SMEs by gender, those surveyed were asked to declare their gender. Table 4.3 displays the distribution of genders.

Table 4.3: Gender of Respondents

Gender	Frequency	Percent
Male	196	52.8

Female	175	47.2
Total	**371**	**100.0**

Source: Field Data (2021)

Males own or operate the majority of the businesses (52.8%), according to the data in Table 4.3. 47.2% of SMEs are owned or operated by women. This may suggest that a greater number of men than women are able to obtain asset-based loans, which allows them to operate their businesses. Because of this, legislators may need to create laws that would enable more women to start their own businesses by granting them access to loans. New loan products that have less borrowing limits, ushered in by financial advances, may also be advantageous to women.

4.3.3 Level of Education of Respondents

Table 4.4 compiles information on the respondents' educational attainment. It was important to establish the proportion of those in the informal sector who have gone through formal education. This may give a projection of those not formerly employed but are qualified.

Table 4.4: Level of Education of Respondents

Level	Frequency	Percent
Secondary	89	24.0
Diploma	145	39.1
Bachelor	111	29.9
Post graduate	8	2.1
Others	18	4.9
Total	**371**	**100.0**

Source: Field Data (2021)

As can be seen from Table 4.4, the majority of respondents (71.1%) have completed higher education and hold diplomas, bachelor's degrees, and postgraduate degrees. This suggests that a large number of college grads choose to starting their own firms, maybe as a result of a shortage of employment. Therefore, in order to empower recent college graduates to create stable avenues for income and employment, policymakers should think about offering them startup cash and guidance.

Conversely, Table 4.4 shows that only 2.1% of postgraduates in the sample population used to own or run SMEs. This is most likely because businesses favor them when it comes to job openings. Nonetheless, 24% of graduates from secondary schools pursued careers in business. This might be the result of their decision to look for a business as a means of income rather than continue their education since they are unable to do so. This is the group that policy makers along with implementers ought to focus on enabling to maintain economic stability. Others comprised of 4.9% of the respondents. This category may be those who did not transit to secondary level of education but engage in gainful businesses.

4.3.4 Length of Stay in Business

When asked how long they had been in business, respondents provided information. The results are shown in Table 4.5. Determining the duration of operation was essential since it revealed the SMEs' stability.

Table 4.5: Length of Stay in Business

Length (yrs)	Frequency	Percentage
<1	45	12.1

1-5	203	54.7
5-9	77	20.8
≥9	46	12.4
Total	**371**	**100.0**

Source: Field Data (2021)

Table 4.5's data indicates that 54.7% of the businesses have been operating for one to five years. Additionally, the data reveals that more than 75% of the companies have been in business for one to nine years. According to the data, 12.1% and 12.4% of the businesses have been in operation for less than a year and more than nine years, respectively. Table 4.5's results suggest that the majority of the enterprises are very new and may not have strong financial standing. Therefore, policymakers ought to develop and put into effect measures that would improve this group of entrepreneurs' access to finance.

4.3.5 Positions of Respondents in the Organization

To determine whether the respondents were business owners or employed by the owners, information about the roles they had within their firms was gathered. Table 4.6 presents the findings.

Table 4.6: Positions of Respondents in the Organization

	Frequency	**Percent**
Owners	281	75.7
Employed	90	24.3
Total	**371**	**100.0**

Source: Field Data (2021)

Table 4.6's results show that the majority of respondents—75.7%—were owners of their businesses while 24.3% were employed by owners of the businesses. This is an

indication that SMEs support many livelihoods either through ownership or employment.

4.4 Descriptive Statistics

4.4.1 Interest Rate Caps

The initial goal was to evaluate how the interest rate cap affected small and medium-sized businesses' ability to obtain loans. Each sentence asked respondents to rate their level of agreement on a five-point Likert scale: 1 meant not in any way (NA), 2 to a moderate extent (SE), 3 to a moderate amount (ME), 4 to an extensive degree (LE), and 5 to an exceptionally large extent (VLE). For every statement, the mean and standard deviation of the respondents' opinions are shown in Table 4.7.

Table 4.7: Interest Rate Caps

	N	Min	Max	Mean	Sd.
Lending rates on loans to SMEs were impacted by the debt ceiling	371	1.00	5.00	3.7035	1.15476
Interest paid by SMEs on their deposits were impacted by the debt ceiling	371	1.00	5.00	3.2615	1.34530
loans that are not performing by SMEs elevated as a result of the interest rate ceiling	371	1.00	5.00	3.7224	1.11550
Loan books of commercial banks shrunk due to interest rate cap	371	1.00	5.00	3.4636	1.20164
The microfinance institutions' lending SMEs' capacity was impacted by the interest rate cap	371	1.00	5.00	3.7062	1.18661
Loans to SMEs are ratified owing to interest rate ceilings, delayed	371	1.00	5.00	3.2642	1.34778
The amount of loans given to SMEs was Interest rate cap has an impact	371	1.00	5.00	3.7251	1.16707
The loan payback terms to Interest had an impact on SMEs. rate cap	371	1.00	5.00	3.6119	1.29876
Grand				**3.5573**	**1.2272**

Source: Field Data (2021)

The results shown in Table 4.7 demonstrated that the majority of respondents did, to a considerable degree, concur that interest rate caps had an impact on lending rates for SMEs seeking credit (Mean = 3.7053, SD = 1.15476). Additionally, respondents

(Mean = 3.2615, SD = 1.3453) moderately agreed that interest rate caps affected SMEs' deposit interests. Additionally, a majority of respondents (Mean = 3.7224, SD = 1.1155) agreed to a great extent that the interest rate cap contributed to an increase in non-performing loans by SMEs. The majority of respondents (Mean = 3.4636, SD = 1.20164) agreed that the interest rate cap was a contributing factor in the moderate shrinkage of commercial banks' loan books.

The interest rate cap had an impact on microfinance institutions' capacity to lend to SMEs, as a significant number of respondents (Mean=3.7062, SD=1.18661) also agreed. The respondents moderately agreed that interest rate caps were the reason behind the delays in the approval of loans to SMEs (Mean=3.2642, SD=1.34778). The respondents (Mean=3.7251, SD=1.16707) also agreed, at least in part, that interest rate limitations had an impact on the amount of loans given to SMEs. The respondents mostly agreed that the interest rate cap had an impact on the repayment terms of loans to SMEs (Mean=3.6119, SD=1.29876). Table 4.7 displays the grand mean score, which comes out at 3.5573. The mean of 3.5573 suggests that respondents agreed, generally, with the assertions that interest rate limitations had an impact on small and medium-sized businesses' ability to obtain financing.

The results of this investigation aligned with the conclusions drawn by multiple other writers. However, some research indicated that interest rate limitations had a favorable impact on SMEs' ability to obtain loans, while other studies found the opposite. For example, the study by Juan et al. (2018) discovered that interest rate caps improved the small and medium sector's access to financing in Colombia, as evidenced by an increase in the volume of loans given to them. The study further

found that there was an increase in the new loans issued to this sector. Mokeira (2019) also found that the capping of interest rate in Kenya had a positive and statistically significant relationship with the quantity of credits loaned to Home Afrika.

On the other hand it was revealed that interest rate cap led to an upsurge in non-performing loans by SMEs, leading to reduced credit uptake and loan approval for this sector (Okwany, 2017). Mehnaz and Bilal (2018) also found that interest rate caps led to an increase in non-performing loans which in turn led to a significant decrease in loans disbursed to the small and medium enterprise sector. Non interest levies were drastically increased which in turn diverted lending away from the SMEs to the corporate clients who were thought to be safer. Moreover, Alper et. al. (2017) also revealed that the law on interest rate cap triggered the drastic reduction in the loan books of smaller banks which resulted to the collapse of their issuance of credit to the small and medium enterprises. Ferrari et. al. (2018) also revealed that the law on interest rate cap lessened credit accessibility by the small and medium enterprises and other risky sectors across several regions of the world. Besides, Goodluck (2022) like other authors reiterated that interest rate capping caused credit meant for the SME sector to be diverted to other less risky sectors while the SMEs were charged hidden premiums which made the loans unaffordable by this sector. It was found that since the banks lent to the SMEs with stringent conditions there emerged informal lender who gave credit to the SME sector.

4.4.2 Cash Reserve Ratio

The study's second goal was to determine how the cash reserve ratio affected small and medium-sized businesses' ability to obtain loans. By asking participants to rate

their agreement or disagreement with the claims regarding the impact of the ratio of cash reserves on loan availability, pertinent data was gathered. The replies' averages and standard deviations are shown in Table 4.8.

Table 4.8: Cash Reserve Ratio

	N	Min	Max	Mean	Std
Credit supply to the SMEs is affected by a change of cash reserve ratio	371	1.00	5.00	3.6146	1.11970
Loan advances to SMEs are influenced by a change of cash reserve ratio	371	1.00	5.00	3.5040	1.17029
Liquidity of banks is influenced by a change of cash reserve ratios	371	1.00	5.00	3.4771	1.23743
Private sector lending is affected by a change of cash reserve ratio	371	1.00	5.00	3.5229	1.21317
Demand deposits by CBK is influenced by a change of cash reserve ratio	371	1.00	5.00	3.4232	1.24397
The lending behavior of banks to SMEs is Influenced by a change in cash reserve ratio	371	1.00	5.00	3.6739	1.16889
Change in loan uptake by SMEs is influenced by a change in cash reserve ratio	371	1.00	5.00	3.6442	1.21370
Grand				**3.5514**	**1.19531**

Source: Field Data (2021)

As shown in Table 4.8, credit supply to the SMEs is largely affected by a change in cash reserve ratio (Mean = 3.6146, SD = 1.1197).The findings also indicated that loan advances to SMEs are largely influenced by a change in cash reserve ratio (Mean = 3.504, SD = 1.17029). Similarly, liquidity of banks are affected to a moderate extent by a change in cash reserve ratio (Mean = 3.4771, SD = 1.23743).The findings further revealed that private sector lending is largely affected by a change in cash reserve ratio (Mean = 3.5229, SD = 1.21317). It was also revealed by the findings that demand deposits by the CBK is affected to a moderate extent by changes in cash reserve ratio (Mean=3.4232, SD=1.24397). The study also established that the lending behaviour of banks to SMEs is largely affected by a change in cash reserve ratio (Mean=3.6739, SD=1.16889). It is also revealed from the study that a change in cash reserve ratio largely causes a change in loan uptake by SMEs (Mean=3.6442, SD=1.21370).

The overall average response rate, as indicated in Table 4.8, is 3.5514. This indicates that small and medium-sized businesses' ability to get credit is significantly impacted by changes in the ratio of cash reserves. These results are in line with those of Onoh and Nwachukwu (2017), who found that the cash reserve ratio had a significant positive correlation with loan advances, suggesting that the ratio affected banks' lending practises. The research by Jamel et al. (2017) revealed a significant positive relationship between the cash reserve ratio and money supply, which is in line with the findings of Onoh & Nwachuku (2017). This suggests that if the cash reserve ratio increased, more loans would be granted.

Nonetheless, Primus (2016) discovered that borrowing to businesses was reduced as the cash reserve ratio rose. The study by Barata et al. (2017) produced similar results, reiterating that banks loaned less to risky sectors as the cash reserve ratio increased. The study emphasized that when cash reserve ratio was reduced, there was more credit loaned out and when it was increased, then the amount of loan disbursed reduced. Also, Garba et. al. (2018) found that effect of cash reserve ratio was negative but statistically insignificantly affected the lending behavior of banks in Nigeria since an increase in the cash reserve ratio did not influence the ability of the banks to issue more loans. The findings of Dhungana (2016) and Orji et al. (2022) were in agreement when they discovered that the cash reserve ratio had an indirect impact on the lending behavior of the banks, which in turn affected the lending interest rates and liquidity ratios that were used to distribute credit to small and medium-sized businesses.

4.4.3 Open Market Operations

The study's third goal was to investigate how open market operations affect small and medium-sized businesses' ability to obtain credit. Respondents were presented with statements on various ways in which open market operations may influence access to credit. Table 4.9 presents their mean extent of agreement with the statements.

Table 4.9: Open Market Operations

	N	Min	Max	Mean	Std
Government bond yields are affected by the activities of the open market operations	371	1.00	5.00	3.5040	1.24634
91 day treasury bill rates in the open market operations affects quantity of money loaned to SMEs	371	1.00	5.00	3.1725	1.13775
The repos rates in the open market operations influence the loan terms of the SMEs	371	1.00	5.00	3.2992	1.18754
The reverse repos rates in the open market operations affect the number of SMEs accessing loans	371	1.00	5.00	3.2749	1.19227
The purchase of financial instruments in the open market operations influences quantity of credit accessed by SMEs	371	1.00	5.00	3.3504	1.17226
Grand				**3.3202**	**1.18723**

Source: Field Data (2021)

From the results, it was established that government bond yields were affected by activities of the open market operations to a large extent. (Mean = 3.504, SD = 1.24634). The respondents agreed that 91 day treasury bill rates in the open market operations moderately affected quantity of money loaned to SMEs (Mean = 3.1725, SD = 1.13775). Other than that, the repos rates in the open market operations also moderately influenced the loan terms of the SMEs (Mean = 3.2992, SD = 1.18754). Additional research showed that the number of SMEs obtaining loans was only slightly impacted by the reverse repos rates in open market operations (Mean = 3.2749, SD = 1.19227). The respondents (Mean = 3.3504, SD = 1.17226) concurred that SMEs' access to credit was somewhat impacted by their purchases of financial instruments in open market activities. Table 4.9 displays the grand mean score, which comes out at 3.3202.

The grand mean of 3.3202 means respondents agreed to a moderate extent that open market operations affect access to credit. The findings are in tandem with the findings by Jamel, et. al. (2017) which revealed that the open market operations of the Central Bank of Jordan, through deposits and REPOs, was effective in influencing money supply. Banda (2022) also found that open market operations increased the reserves of the financial markets which made them raise the loans issued.

Nonetheless, open market activities were found to have a detrimental impact on bank lending and the availability of credit by Dhungana (2016) and Njiru (2016). Additionally, Garba et al. (2018) discovered a negative although statistically insignificant correlation between open market operations and bank lending practices. The study reiterated that the decision of banks to issue more loans was not affected by the open market operations. Besides, Mutwiri (2017) established that when there was a rise in the Treasury bill rates, the short term interest rates rose too which in turn limited the ability to access to credit by the customers.

4.4.4 Moral Suasion

The factors under moral suasion were examined to establish if they influence access to credit by SMEs. Respondents were asked to agree to items on whether it would result in access to credit. The mean and standard deviation of responses is presented in Table 4.10.

Table 4.10: Moral Suasion

	N	Min	Max	Mean	Std
Arguments made by the state on lower interest rates for SMEs by banks are influenced by moral suasion	371	1.00	5.00	3.7035	1.15476
government directive on the creation of money to include the informal sector are the consequence of moral persuasion	371	1.00	5.00	3.4987	1.21338
Establishing facilities for savings for Banks' lending to SMEs is as an impact of moral persuasion	371	1.00	5.00	3.2507	1.20773
The establishment of lending facilities for SMEs as a consequence of commercial banking of moral suasion	371	1.00	5.00	3.2992	1.30880
The availability of a loan guarantee program to SMEs is a facilitation moral suasion	371	1.00	5.00	3.3288	1.24974
Interest rates offered to MSMEs by MFIs is due to moral suasion	371	1.00	5.00	3.4555	1.27980
Grand				**3.4227**	**1.23570**

Source: Field Data (2021)

Table 4.10 shows that moral suasion plays a significant role in the government's ability to persuade banks to lower borrowing rates for small and medium-sized enterprises (SMEs) (Mean = 3.7035, SD = 1.15476). Additionally, the findings imply that the government's order on the establishment of funding for the informal sector's inclusion is only partially motivated by moral arguments (Mean = 3.4987, SD = 1.21338). Additionally, it is clear that commercial banks' introduction of savings programs for SMEs is only partially motivated by moral arguments (Mean = 3.2507, SD = 1.20773). Furthermore, the respondents did concur that moral persuasion has a moderate role in commercial banks' creation of lending facilities for SMEs (Mean = 3.2992, SD = 1.30880). The findings show that offering SMEs credit guarantee programs facilitates moral persuasion to a moderate extent (Mean = 3.3288, SD = 1.24974). The respondents (Mean = 3.4555 SD = 1.27980) also somewhat agreed that MFIs' rates of interest to SMEs are determined by moral persuasion. The grand mean of 3.4227 suggests that moral persuasion would have a moderate impact on credit availability.

The results are consistent with a research conducted in 2016 by Ryan-Collins, which highlighted the effectiveness of moral persuasion in securing finance for small and medium-sized businesses in Canada. Omoregie (2013) added that moral persuasion led to banks lending to small and medium-sized enterprises (SMEs) in the UK after the global financial crisis of 2007. The claim made by Koila (2016) claims the Central Bank of Kenya exerts moral pressure over financial firms is supported by the data in Table 4.10. Abuka et al. (2019) discovered, however, that banks significantly decreased their lending as a result of moral persuasion by the Ugandan government.

4.4.5 Financial Innovations

Using the mean and standard deviation, the study examined descriptive statistics related to financial innovations. Statements on financial innovations were provided to the respondents, and they were asked to agree. The outcomes are displayed in Table 4.11.

Table 4.11: Financial Innovations

	N	Min	Max	Mean	Std
The development of ATMs was impacted by financial innovation	371	1.00	5.00	4.2183	1.12384
The The creation of cell phones was as a result of financial innovation	371	1.00	5.00	2.7278	1.46445
Credit card innovation was credited to financial innovations	371	1.00	5.00	4.0566	1.00514
The development of mobile money occurred as a as a result of innovative finance	371	1.00	5.00	4.2722	.92049
The advent of online banking came because of advances in finance	371	1.00	5.00	4.1806	1.01462
The advent of mobile finance was due to innovations in finance	371	1.00	5.00	4.3046	.91027
The capability of using mobile devices to process loans facilitated by financial innovation	371	1.00	5.00	4.3774	.82063
The capability of making a mobile money deposit phones has been improved via financial innovation	371	1.00	5.00	4.4016	.91409
Grand				**4.0674**	**1.02169**

Source: Field Data (2021)

The results shown in Table 4.11 demonstrated that the majority of respondents did, in fact, agree, at least in part, that financial service innovation had an impact on the development of ATMs (Mean = 4.2183, SD = 1.12384). The majority of respondents did, however, somewhat concur that financial organization innovation led to the development of mobile phones (Mean = 2.7278, SD = 1.46445). However, the majority of respondents (Mean = 4.0566, SD = 1.00514) did, for the most part, believe that financial process innovation was responsible for the introduction of credit cards. The majority of respondents (Mean = 4.2722, SD =.92049) agreed to a great extent that financial product innovation led to the development of mobile money. Furthermore, the majority of respondents (Mean = 4.1806, SD = 1.01462) generally believed that financial organization innovation was responsible for the development of internet banking. The statistics also show that financial organization innovation played a significant role in the development of mobile banking (Mean =4.3046, SD =.91027). The majority of respondents did concur that financial process innovation has made it easier to process loan through mobile devices (Mean = 4.3774, SD =.82063). The findings show that most respondents also generally believed that financial service innovation has improved the capacity to deposit money using mobile phones (Mean = 4.4016, SD =.91409).

A grand average rating of 4.0674 is revealed by the findings shown in Table 4.11. The average score of 4.0674 suggests that participants mostly agreed with the claims that financial innovations had a significant impact on loan availability. Dabrowski (2017) concluded that the quick growth of digital banking, payments, and money transactions appeared to have replaced the need for cash. These findings are consistent with

Dabrowski's findings. Additionally, Kasekende (2016) demonstrated that the need for money in Sub-Saharan Africa was mostly explained by financial innovations. The analysis confirms that in the areas where financial innovations were present, the demand for money was comparatively steady. Although the association was not statistically significant, Simiyu and Oloko (2015) contend that mobile money, as a component of financial innovation, positively impacted the small and medium firm sector.

4.4.6 Access to Credit

Using the mean and standard deviation, the study also examined the descriptive statistics related to credit availability. Table 4.12 summarizes the results on credit availability.

Table 4.12: Access to Credit

	N	Min	Max	Mean	Std
A lot of SMEs are using lending programs. because financing is more easily accessible	371	1.00	5.00	3.9677	1.12179
The amount of loan to SMEs has increased due to enhanced access to credit	371	1.00	5.00	3.8113	1.12801
The time frame for loan payback to SMEs is reasonable as a result of easier access to credit	371	1.00	5.00	3.4987	1.30565

Grand		**3.7592**
1.18515		

Source: Field Data (2021).

Based on the results, most respondents agreed (Mean = 3.9677, SD = 1.12179) that more SMEs are using loan facilities as a result of easier access to credit. Furthermore, the results suggest that improved credit availability has contributed significantly to the rise in loans to SMEs (Mean = 3.8113, SD = 1.12801). Additionally, the respondents (Mean = 3.4987, SD = 1.30565) somewhat agreed that the loans to SMEs have appropriate payback terms because they have better access to credit. The elements on credit availability added up to an average of 3.7592 overall, suggesting that the previously indicated factors would generally increase credit availability.

4.5 Diagnostic tests

Regression analysis assumed normality, homogeneity of variances, multi-collinearity and independence of residuals/ auto-correlation (Hair et al., 2009; Field, 2009). Prior to inferential analysis these assumptions were verified using data diagnostic tests of normality, homogeneity of variances, multi-collinearity and independence of residuals/ auto-correlation. The results of these data diagnostic tests are presented in Table 4.13 to 4.15.

4.5.1 Test for Normality

The Kolmogorov-Smirnov and Shapiro-Wilk normality tests were employed to ascertain whether the sample was derived from a population with a normal distribution. A non-significant result (P>0.05) signifies normal distribution while a p<

0.05 implies violation of the assumption of normality. The results of these normality tests are presented in Table 4.13.

Table 4.13: Test of Normality

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.044	371	.082	.988	371	.003
Standardized Residual	.044	371	.082	.988	371	.003

Source: Field Data (2021)

Table 4.13 shows that the errors were normally distributed as the results of the Kolmogorov-Smirnov test statistic had a non-significant value that was greater than 0.05 and there was no difference between the significance of the value of the unstandardized residuals and the value of the significance of the standardized residuals. Nonetheless, there were significant results less than 0.05 in the Shapiro-Wilk test. According to Williams et al. (2013), multiple regression analysis can yield unbiased and consistent regression coefficients when all other assumptions are met, but the assumption of normal distribution of errors is not a sufficient condition. They also restate the fact that while the range of mistakes may not be normal, deductions made from the coefficients often grow more trustworthy as sample size increases. This is explained by the central limit theory, which states that as sample size rises, the distribution of samples of the coefficients will gravitate toward a normal distribution even in cases where the errors are not distributed normally (Williams et al., 2013).

4.5.2 Test for Homogeneity.

Regression and ANOVA both depend on the homogeneity of variances. The assumption of homoscedasticity states that the dependent variables' variance is constant throughout the range of the variables that are independent. Heteroscedasticity, which defies the linear regression assumption, occurs when the dependent variables' variance is uneven over the range of the independent variables. To evaluate the residuals' variance, a scatter plot—a representation of the regression-standardized residuals—was created. In Figure 4.1, it is displayed.

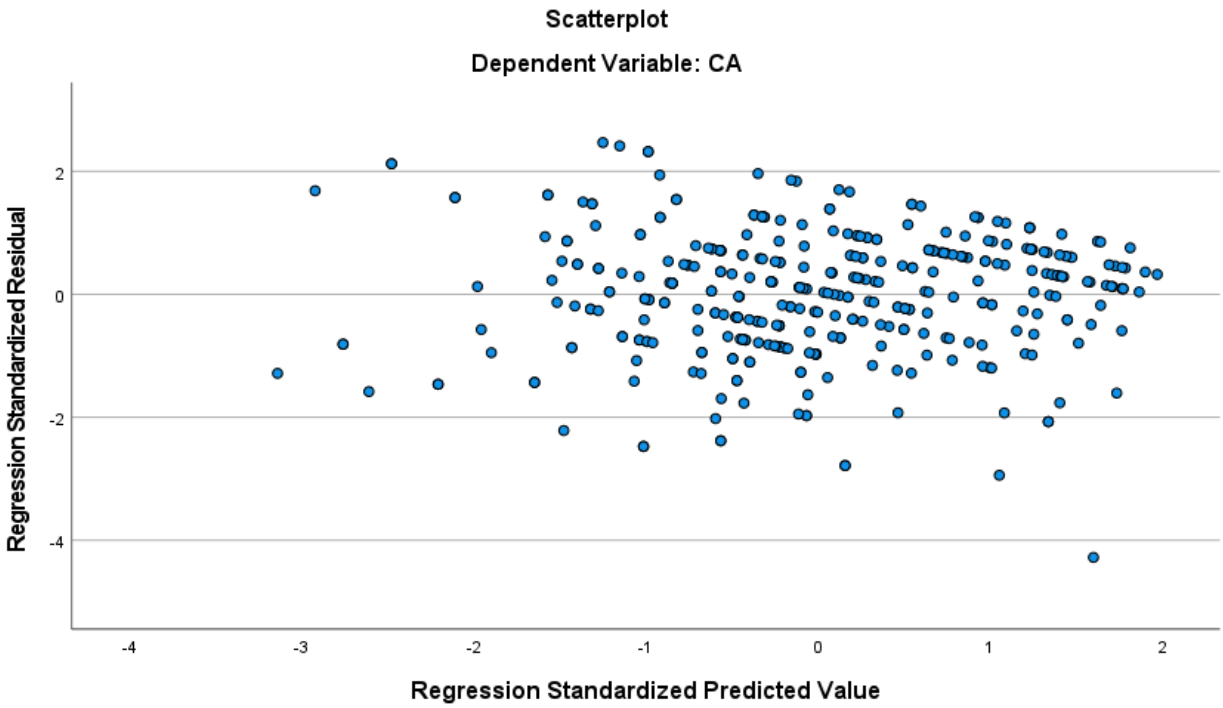

Figure 4.1: Scatter Plot

Source: (Field Data, 2021)

Figure 4.1's scatter plot shows that the information points are uniformly distributed on both perspectives of the y-axis and above and below 0 on the x-axis. This demonstrates that the assumption of homoscedasticity has been met.

4.5.3 Test for Multi-collinearity

Multi-collinearity, which presupposes that each of the independent variables in a linear regression are uncorrelated, was another assumption proposed. When multiple independent variables exhibit a significant association with one another, multi-collinearity is present. The predictive ability of individual variables is diminished when multi-collinearity is present. Flexibility and Difference to evaluate multi-collinearity, multi-collinearity statistics based on inflation factors (VIF) were employed. If there is a significant linear relationship between the variable in question along with the other independent variables, it is determined by the VIF. Tolerance levels less than 0.1 signify severe multi-collinearity issues, whereas VIF values more than 10 imply multi-collinearity. Multi-collinearity is absent when the VIF for each of the independent as well as dependent variables is less than three, and it is present when the VIF is greater than ten (VIF 10) (Field, 2009). Table 4.14 displays the mult-collinearity test findings.

Table 4.14: Test Multi-Collinearity

Variables	Collinearity Tolerance	VIF
Interest rate ceiling	0.620	1.614
ratio of cash reserves	0.540	1.850
Market operations in the open	0.905	1.105
Moral persuasion	0.746	1.341

Dependent variable access to credit

Source: Field Data (2021)

From the results in Table 4.14 the tolerances are less than 2.00 while VIF are less than 10. Multi-Collinearity is reflected by lower tolerances and higher VIF values (Hair et al., 1998). Tolerance values are greater than 0.1 indicating the non-existence of multi-collinearity (Field, 2009). Since the VIF are less than 10 it is concluded that there is no multi-collinearity between the independent variables that can affect their predictive power. Thus from the test results in Table 4.14 we can conclude that all the independent variables were suitable for regression analysis.

4.5.4 Test of Auto-Correlation

Auto-correlation refers to the degree to which the error terms in the regression models are correlated. This is depicted by the error term not being random but taking certain regular format. The test statistic generated by the Durbin-Watson tests has a range of 0 to 4. According to Gujarati and Porter (2009), numbers around the middle of the range, 2, indicate less autocorrelation, while values near 0 or 4 indicate more negative

or positive autocorrelation, respectively. The Durbin-Watson tests regarding residual independence are shown in Table 4.15.

Table 4.15: Test of independence of residuals

					Change Statistics					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.490[a]	.240	.232	.72770	.240	28.933	4	366	.000	1.908

a. Predictors: (Constant), MS, OMO, IRR, CRR

b. Dependent variable: CA

Source: Field Data (2021)

Results in table 4.15 shows a Durbin-Watson test of 1.908. According to Gujarati and Porter (2009) the result is within the acceptable range of 1.5 – 2.5. The value of the test lies between 0 and 4 with values of 2 meaning that there is no auto-correlation in the sample.

4.6 Correlation Analysis

Regression models were used to conduct additional analysis based on correlation. To investigate the association link between the research variables, correlation analysis was employed. The statistic used to quantify this level of link between the variables is the correlation coefficient. The degree of linear correlation between variables can be gauged using Pearson's Product Moment Correlation Coefficient (r) scale.

R, the coefficient of correlation, is a number that varies from -1 to +1, or $-1 \leq R \leq +1$. The degree of link (magnitude of proximity) and kind of association (positive,

negative, or none) between two variables are examined using the correlation coefficient. Determining the effect of monetary intervention strategies adopted by the banking system on loan availability was the aim of the current study. The degree of relationship between the key independent and dependent variables was usefully revealed by correlation analysis. Table 4.16 displays the correlations that exist between the variables.

Table 4.16: Correlations Matrix

		Interest rate cap	Cash reserve ratio	Open market operations	Moral suasion	Access credit
Interest rate cap	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	371				
Cash reserve ratio	Pearson Correlation	.604**	1			
	Sig. (2-tailed)	.000				
	N	371	371			
Open market operations	Pearson Correlation	.202**	.305**	1		
	Sig. (2-tailed)	.000	.000			
	N	371	371	371		
Moral suasion	Pearson Correlation	.400**	.484**	.267**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	371	371	371	371	
Access to credit	Pearson Correlation	.360**	.447**	.105**	.371**	1
	Sig. (2-tailed)	.000	.000	.000	.002	
	N	371	371	371	371	371

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

Source: Field Data (2021)

The results in Table 4.16 demonstrate a weak, positive, and statistically significant association (r=.360**, p<.01) among interest rate caps and credit availability. However, there was a moderately strong, positive, and statistically significant correlation (r=.447**, p<.01) between the cash reserve ratio and loan availability. Open market activities and credit availability also had a very weak, positive, and statistically significant association (r=.105**, p<.05). According to Gathi et al. (2019), there was a small but statistically significant positive association (r=.371**, p<.01) between moral persuasion and loan availability. Table 4.16's results suggest that cash buffer ratios, open market activities, interest rate caps, and moral persuasion all contribute favorably to SMEs in Kisumu County's ability to obtain credit. Regression analysis was possible since the information in Table 4.16 demonstrate the correlation between the study's variables.

4.7 Regression Analysis

The underlying hypothesis of this study was that financial innovations regulate the link involving monetary interventions and loan availability. We used linear regressions to test the hypotheses. For each of the four categories of monetary interventions, the first accessibility to credit was regressed. The association between credit access and each dollar intervention was then regressed in order to examine for the moderating impact of economic innovations in the relationship between monetary changes and credit access. The test results are presented at a 95% confidence level in sections 4.7.1–4.7.4.

4.7.1 Interest Rate Caps and Access to Credit

The study's primary goal was to evaluate how interest rate caps affected small and medium-sized businesses' ability to obtain loans. To determine if interest rate caps could predict SMEs' access to credit, a straightforward linear regression analysis was conducted. The hypothesis that the limit on interest rates has no statistically significant impact on small and medium-sized businesses' ability to obtain credit was examined in order to determine how the cap affects credit availability. The association was found by regressing access to credit on interest rate cap. The pertinent findings are shown in Tables 4.17a, 4.17b, and 4.17c.

Table 4.17 a: Model Summary of Regression of Credit Access on Interest Rate Caps

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.360[a]	.130	.127	.77567

a. Predictors: (Constant), IRR
Source: Field Data (2021)

R2=.130 is shown by the data in Table 4.17a. The amount of variance in the variable in question that the independent variable can account for is known as the R-squared value. According to R2=.130, this suggests that an interest charge cap predicts a 13% variance in credit availability amongst SMEs in Kisumu County. A study of variance was conducted in order to evaluate the regression model's overall significance and robustness. The findings are shown in Table 4.17 b.

Table 4.17 b: ANOVA for Regression of Credit Access on Interest Rate Caps

Model	Sum of Squares	Df	Mean Square	F	Sig

1	Regression	33.085	1	33.085	54.989	.000[b]
	Residual	222.012	369	.602		
	Total	255.097	370			

a. Dependent Variable: CA

b. Predictors: (Constant), IRR

Source: Field Data (2021)

The model fitness for the interest rate cap proved statistically significant, according to the ANOVA model ($F = 54.89$, $p<.05$). As a result, the interest rate cap was used to fit the model and anticipate credit availability. The person significance of the association between the fascination rate cap and credit availability was then determined using the t-statistic. Table 4.17c presents the results.

Table 4.17 c: Coefficients for Regression of Credit Access on Interest Rate Caps

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	2.266	.199		11.383	.000
	Interest rate cap	.406	.055	.360	7.415	.000

a. Dependent Variable: CA

Source: Field Data (2021)

As per the null hypothesis (H01), the interest rate cap does not have a statistically significant effect on the loanability of small and medium-sized enterprises. The findings show a linear relationship between SMEs' access to credit and the interest rate cap ($\beta=.360$, $p<0.05$), meaning that an increase or decrease in the interests rate cap would result in a 0.360 change in credit availability. The alternative hypothesis,

that there is a statistically significant impact of the interest rate cap on SMEs' ability to obtain credit, is thus accepted since the p-value is smaller than 0.05, and the null hypothesis is thus rejected.

The results of earlier research demonstrating a beneficial correlation between limitations on interest rates and credit availability are supported. For example, a research by Juan et al. (2018) on how interest rate caps affect financial inclusion found that the policies promoted and made it easier for business owners to obtain financing. Moreover, Mokeira (2019) found a significant and positive association between Home Afrika's total loan intake and interest rate capping. Table 4.17's findings, on the other hand, contradict the findings of Alper et al. (2019), who found that interest rate limitations played a role in the disintegration of loans to SMEs and the shrinkage of small banks' loan books. The current study supports the alternative hypothesis, which holds that the interest rate cap had a statistically significant impact on SMEs' ability to obtain loans. The regression equation of the results is as follows: $Y=\beta_0+\beta_1X_1+\varepsilon$; $Y= 2.266 +0.406X_1$

4.7.2. Cash Reserve Ratio and Access to Credit

Evaluating the impact of the ratio of cash reserves on SMEs' finance access was the second aim of the study. The hypothesis under investigation was that the percentage of reserve funds had no statistically significant impact on the creditworthiness of small and medium-sized enterprises. To ascertain the relationship involving the ratio of reserve funds and loan availability, regression analysis was used. The obtained results are displayed in Tables 4.18a, 4.18b, and 4.18c, respectively.

Table 4.18 a: Model Summary of Regression of Credit Access on Cash Reserve Ratio

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.447[a]	.200	.198	.74369

a. Predictors: (Constant), CRR

Source: Field Data (2021)

Table 4.18a's results indicate that R2 =.200. This demonstrates that the cash reserve ratio (R2 =.200) predicts fluctuations in credit availability by SMEs of 20.0%. An analysis of covariance was performed in order to assess the robustness and overall significance underlying the regression model. The findings are shown in Table 4.18 b.

Table 4.18 b: ANOVA for Regression of Credit Access on Cash Reserve Ratio

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	51.011	1	51.011	92.231	.000[b]
	Residual	204.086	369	.553		
	Total	255.097	370			

a. Dependent Variable: CA

b. Predictors: (Constant), CRR.

Source: Field (2021)

According to Table 4.18b's data, there is a statistically significant correlation ($F=92.231$, $p<0.05$) between the cash reserve ratio and SMEs' ability to obtain credit. As a result, the cash reserve ratio was used to fit the model and estimate credit availability. The person significance of the link between the cash reserve ratio along with loan availability was then established using the t-statistic. Table 4.18c summarizes the results.

Table 4.18 c: Coefficients of Regression of Credit Access on Cash Reserve Ratio

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	2.035	.179		11.383	.000
	cash reserve ratio	.472	.049	.447	9.604	.000

a. Dependent Variable: access to credit

Source: Field Data (2021)

Hypothesis (H_{02}) stated that cash reserve ratio had no statistically substantial impact on small and medium-sized businesses' ability to obtain loans. The findings show that the proportion of cash reserves set by the central bank (β=.447, $p<0.05$) has a linear relationship with loan availability. This also suggests that there would be a 0.447 change in credit availability for every unit change in the cash reserve ratio.The results are consistent with earlier research on the usefulness of the ratio of cash reserves as a monetary policy instrument. For example, Onoh and Nwachukwu (2017) discovered a positive correlation between the cash reserve ratio and commercial bank loan advances in Nigeria, whereas Orji et al. (2022) discovered a secondary correlation between the cash reserve ratio and lending to small and medium-sized enterprises.

Conversely, Garba, Akwe, and Dang (2018) discovered a negative and statistically insignificant correlation between the cash reserve ratio and bank lending practices. We can draw the conclusion that the results presented in Table 4.18 provide credence to previous research on the impact of ratio of cash reserves on credit availability. The data presented in Table 4.18 clearly show that the claim that the cash reserve ratio and loan availability have no statistically significant connection is unsupported. With

regard to the data in Table 4.18b, they thereby support the alternative hypothesis that there's a statistically significant connection between cash reserve ratio and SMEs' access to credit. The regression equation of the results is as shown: $Y=\beta_0+\beta_2X_2+\varepsilon$; $Y=2.035+0.472X_2$

4.7.3 Open Market Operations and Access to Credit

The third objective was analyzing how open market operations affected small and medium-sized enterprises' capacity to obtain financing. To explore this, the premise that open market activities have no statistically significant effect on small and medium-sized enterprises' creditworthiness was put to the test. Tables 4.19a, 4.19b, and 4.19c show the results of how credit availability is impacted by open market operations.

Table 4.19 a: Model Summary for Regression of Access to Credit on OMO

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.105[a]	.011	.008	.82685

a. Predictors: (Constant),OMO

Source: Field Data (2021).

An insignificant amount of the variance in credit availability anticipated by open market activities was explained by the findings in Table 4.19a (R2=1.1%, R2=.011). This could likely be explained by the fact that, given the amount of money needed to purchase securities on the open market, this industry hardly ever engages in open market activities. Table 4.19 b presents the results of an analysis of variance that was

performed in order to assess the overall significance and robustness of the regression model.

Table 4.19 b: ANOVA for Regression of Access to Credit on OMO

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.820	1	2.820	4.125	.043
	Residual	252.276	369	.684		
	Total	255.097	370			

a. Dependent Variable: CA

b. Predictors: (Constant), OMO

Source: Field Data (2021).

According to Table 4.19b's data, there is a statistically significant correlation ($F=4.125$, $\rho<0.05$) among open market operation as well as SMEs' ability to obtain credit. As a result, the model fit well to forecast credit availability through open market operations. The individual significance of the correlation between open market activities and credit availability was then evaluated using the t-statistic. Table 4.19c summarizes the results.

Table 4.19 c: Coefficients for Regression of Access to Credit on OMO

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	3.366	.176		19.148	.000
	open market operations	.104	.051	.105	2.031	.043

a. Dependent Variable: access to credit

Source: Field Data (2021).

Open market activities do not statistically significantly affect small and medium-sized businesses' ability to obtain credit, according to hypothesis (H03). The findings show that credit availability is linearly correlated with open market activity, and that a one-

unit change in opening market activity would result in a 0.105-unit change in credit availability. This is consistent with research by Banda (2022) that shows open market operations boost financial market reserves, enabling them to extend more loans. It was determined that open market activities and SMEs' ability to obtain financing had a statistically significant link. As a result, we find that open market activities have a statistically significant impact on SMEs operating in Kisumu County's ability to obtain credit, rejecting the null hypothesis. The regression equation of the relationship in Table 4.19c is as stated: $Y= \beta_0+\beta_3X_3+\varepsilon$;

$Y=3.366 +0.104X_3$

4.7.4 Moral Suasion and Access to Credit

The premise that ethical suasion has no statistically significant impact on small and medium firms' ability to acquire credit was used to examine the relationship between loan availability and moral suasion. The information in Tables 4.20a, 4.20b, and 4.20c illustrates how moral persuasion affects loan availability.

Table 4.20 a: Model Summary of Regression of Access to Credit on Moral Suasion

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.371[a]	.137	.135	.77228

a. Predictors: (Constant), MS

Source: Field Data (2021)

According to Table 4.20a's results, moral persuasion only partially (R2=.137) explains 13.7% of the variance in loan availability. A variance analysis was performed in order

to assess the robustness and general significance of the model of regression. The findings are shown in Table 4.20 b.

Table 4.20 b: ANOVA for Regression of Access to Credit on Moral Suasion

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	35.022	1	35.022	58.721	.000[b]
	Residual	220.075	369	.596		
	Total	255.097	370			

a. Dependent Variable: access to credit
b. Predictors: (Constant), moral suasion
Source: Field Data (2021).

Table 4.20b shows that there is a statistically significant correlation (F=58.721, $\rho<0.05$) between SMEs' moral persuasiveness and their ability to obtain loans.As a result, moral persuasion was used to fit the model and predict credit availability. Next, the individual significance of the correlation between moral persuasion and loan availability was evaluated using the t-statistic. Table 4.20c displays the results.

Table 4.20 c: Coefficient Table of Regression of Access to Credit on Moral Suasion

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	2.498	.163		15.290	.000
	moral suasion	.355	.046	.371	7.663	.000

a. Dependent Variable: access to credit
Source: Field Data (2021).

The findings show a linear relationship with statistical significance between moral persuasion and loan availability ($\beta=.371$ and $p<.05$). It was determined that a unit

change in moral persuasion would result in a.371 change in credit availability. As a result, we find that moral persuasion has a statistically significant impact on SMEs operating in Kisumu County's ability to obtain loans, rejecting the null hypothesis. The association on Table 4.20c has the following regression equation: $Y= \beta 0+ \beta 4 X4+\varepsilon$; Y=2.498+.355X4. For the variables, the multiple linear regression equation is Y=1.622+0.125X1+0.320X2-0.044X3 +0.180X4.

4.7.5 The Moderating Role of Financial Innovation

As directed by Fairchild & MacKinnon (2009), a hierarchical multiple regression approach was used to evaluate for moderation the effect of financial innovation (FI) on the relationship between credit and monetary interventions (MI) availability (CA). By putting the following theories to the test, the moderating influence of financial inventions on the link among monetary interventions and loan availability was investigated: Y = 1.622% + 0.125X1 + 0.320X2- 0.044X3 + 0.180X4.

H_{05a}: The relationship between the interest rate cap and small and medium-sized businesses' access to credit is not statistically significantly moderated by financial innovations.

H_{05b}: The relationship between the cash reserve ratio and small- and medium-sized businesses' access to credit is not statistically significantly moderated by financial innovations.

H_{05c}: The association between open market activities and small and medium-sized businesses' access to credit is not statistically significantly moderated by financial innovations.

H_{05d}: The association between moral persuasion and small and medium-sized businesses' access to finance is not statistically significantly moderated by financial developments.

4.7.5.1 Moderation of Financial Innovations on Interest Rate Caps and Access to Credit

The goal of the study was to evaluate how financial innovations affected the link amongst caps on interest rates and credit availability in a moderating way. The following theory was put forth:

H05a: There is no statistically noteworthy moderating influence of financial innovations on the connection between caps on interest rates and small- and medium-sized businesses' access to credit. The regression results are shown in Table 4.21.

Table 4.21 a: Model Summary of Moderation of Interest Rate Cap on Credit Access

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	.360	.130	.127	.77567	.130	54.989	1	369	. 000
2	.461	.212	.208	.73887	.082	38.664	1	368	. 000

a. Predictors: (Constant), IRR

b. Predictors: (Constant), IRR, Z

c. Dependent variable CA

Source: Field Data (2021)

The interest rate cap accounted for 13.0% of the variance in credit availability in model 1, which only included the interest rate cap as a predictor. This model's R square of 0.130 was attained. When interest rate caps and financial innovation were combined as predictors in model 2, the outcome was a coefficient of estimation of 0.212, meaning that interest rate caps and financial innovation together accounted for 21.2% of the variation in loan availability. The relationship between the interest rate cap and loan availability is moderated by financial innovation by 8.2 percent, according to the (R2 Change =.082). At the 5% level of significance, the increased variance was likewise shown to be statistically significant with F change = 38.664 and $p < 0.05$. The purpose of the one-way ANOVA was to see how well models 1 and 2 predicted credit availability. The findings were shown in Table 4.21b.

Table 4.21 b: ANOVA for Moderation of Interest Rate Caps on Credit Access

Model		Sum of Square	Df	Mean Square	F	Sig.
1	Regression	33.085	1	33.085	54.989	.000
	Residual	222.012	369	.602		
	Total	255.097	370			
2	Regression	54.193	2	27.096	49.633	.000
	Residual	200.904	368	.546		
	Total	255.097	370			

a. Dependent Variable: CA

b. Predictors: (Constant), IRR
c. Predictors: (Constant), IRR, Z

Source: Field Data (2021)

The regression model was found to have an excellent match for the data since p<0.05, as demonstrated by the model 1 f ratio values of F0.05 (1,369 =54.989, p =0.000). Similarly, F0.05 (2,368 = 49.633, p = 0.000) was the f ratio result obtained in model 2.Given that p<0.05, it was also concluded that the model provided an excellent match for the data. As a result, the study found that both models matched the data well. To find out if each of the independent variables in T tests revealed that the model significantly affected the availability of loans. Table presents the results. 4.21c.

Table 4.21 c: Coefficients for Moderation of Interest Rate Cap on Credit Access

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.226	.199		11.383	.000
	IRR	.406	.055	.360	7.415	.000
2	(Constant)	2.506	.194		12.949	.000
	IRR	-.106	.098	-.094	-1.089	.277
	Z	.109	.017	.539	6.218	.000

a. Dependent Variable: CA

Source: Field Data (2021)

The findings for model 1, which regressed interest rate caps on loan availability, showed that the coefficients that were beta standardized with values of (sig = 0.000, t = 7.415, β =.360). The interest rate cap may have had a statistically significant impact because p < 0.05 along with the standardized beta coefficient, β =.360, were both positive. positive affect on SMEs' ability to obtain credit at the 5% level of significance (0.05). On the other hand, the second model shows that credit availability

increased by 0.539 units (β =.539, t = 6.218, p = 0.000) for the standardised coefficients beta, with financial innovation tempering interest rate caps. This shown that the interest rate cap plus financial innovation had a statistically significant positive effect on SMEs' loan-obtaining capacity. Table 4.21c above clearly shows that β changed in model 2 from.360 in model 1 to.539 in model 2.

Consequently, it is noteworthy that the interest rate had no statistically significant impact on credit availability following the addition of the interaction variable Z (β = -.094, t = -1.089, p = 0.277). This implies that the impacts of an interest rate cap are lessened when it is implemented gradually. Consequently, the research provided compelling evidence of the moderating effect of financial ingenuity on the relationship between loan availability and interest rate caps. Thus, the alternative is accepted, and the hypothesis H05 (a), according to which the interest rate cap and loan availability for small and medium-sized Kenyan businesses in Kisumu County are correlated but not statistically significantly moderated, is rejected. The study shows that the relationship between interest rate limitations and credit accessibility for small and medium-sized Kenyan firms in Kisumu County was tempered by financial innovation.

4.7.5.2 Moderation of Financial Innovation on Cash Reserve Ratio and Access to Credit

The hypothesis that follows was developed in order to evaluate the degree to which financial innovations have regulated the relationship between the proportion of reserve funds and loan availability: There is no statistically significant moderating

effect of financial innovations on the relationship between the cash reserve ratio and the availability of credit for small and medium-sized enterprises. The outcomes are displayed in Table 4.22a.

Table 4.22 a: Model Summary of Moderation of CRR on Credit Access

				Change Statistics				
R	R Square	Adjusted R Square	Std Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
.447	.200	.198	.74369	.200	92.231	1	369	. 000
.496	.246	.242	.72292	.046	22.514	1	368	. 000

a Predictors: (Constant), CRR

b Predictors: (Constant), CRR, W

c Dependent Variable: CA

Source: Field Data (2021).

Using the ratio of cash reserves as the sole predictor, a coefficient of estimation of 0.200 was obtained, meaning that the cash reserve ratio was responsible for 20.0% of the variation in small and medium-sized firms' access to finance. The cash reserve ratio along with financial innovation together accounted for up to 24.6% of the variance in credit availability in model 2, which includes both variables as predictors. This finding was confirmed by a coefficient of determination of 0.246. The value of the R2 change is 0.046. That being said, the relationship involving the proportion of cash reserves and credit availability is tempered by financial innovation. Additionally, the extra variance was demonstrated to be statistically significant at the 5% level (F

change = 22.514, p < 0.05). One-way ANOVA was used to determine if the two models were a good match for the data, and the results are shown in Table 4.22b.

Table 4.22 b: ANOVA for Moderation of CRR on Credit Access

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	51.011	1	51.011	92.231	.000
	Residual	204.086	369	.553		
	Total	255.097	370			
2	Regression	62.777	2	31.389	60.061	.000
	Residual	192.320	368	.523		
	Total	255.097	370			

a. Dependent Variable: CA

b. Predictors: (Constant), CRR

c. Predictors: (Constant), CRR, W

Source: Field Data (2021).

In With regard to model 1, the obtained f ratio results were $F_{0.05}$ (1,369 = 92.231, p =0.000) This showed whether or not the data corresponded to the regression model because p < 0.05. Similar to model 1, model 2's f ratio values were F0.05 (2,368 = 60.061, p = 0.000), which indicated that p < 0.05 indicated that the model likewise fit the data well. After coming to the conclusion that both models matched the data well, t tests were run to see whether there were any significant statistical effects of the

model's independent variables on loan availability. The outcomes are displayed in Table 4.22c.

Table 4.22 c: Coefficients for Moderation of CRR on Credit Access

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.035	.179		11.383	.000
	Reserve Ratio	.472	.049	.447	9.604	.000
2	(Constant)	2.264	.180		12.553	.000
	Reserve Ratio	.062	.099	.059	.627	.000
	W	.084	.018	.444	4.745	.000

a. Dependent Variable: CA

Source: Field Data (2021)

For the first model, where the cash reserve ratio is the only predictor, the standard coefficients of beta for the first model were $\beta = 0.447$, $t = 9.604$, and $p = 0.000$. Since p is less than 0.05 and the standardized beta coefficient was 0.447, which was positive, this suggested a moderating effect that is favorably statistically significant on the cash reserve ratio at the 5% level of significance (0.05). The second model demonstrates a drop in the cash reserve ratio's moderating influence on credit access to 0.444 units ($\beta = 0.444$, $t = 4.745$, $p = 0.000$) for the standardized coefficients beta. This effect is explained by financial innovation. Given that the standardized beta coefficient was positive and the cash reserve ratio was statistically significant (p is less than 0.05), it can be concluded that the ratio positively moderated credit availability. Therefore, it is important to highlight that even while the effect

decreased, the cash reserve ratio continued to have a statistically significant impact on loan availability (β = 0.059, t =.627, p = 0.000) when financial innovation along with cash reserve ratio were combined.

As a result, the study denies the following hypothesis by supporting the moderation of financial innovation on the relationship between the ratio of cash reserves and loan availability: The relationship between Kenyan small and medium-sized firms' cash reserve ratio in Kisumu County and their access to credit was not significantly moderated by financial innovations. The study discovered that financial innovation acted as a moderator in the relationship between the ratio of cash reserves and the accessibility of credit for small and medium-sized Kenyan enterprises in Kisumu County.

4.7.5.3 Moderation of Financial Innovation on Open Market Operations and Access to Credit

The following hypothesis was tested in order to determine the moderating influence of financial innovations on the relationship among open market operations and loan availability. The relationship between open market activities and small and medium-sized firms' access to financing is not statistically significantly moderated by financial innovations.

The study also attempted to investigate whether financial innovation mitigated the impact of open market operations on SMEs' financing availability by hierarchical regression. By regressing credit access on the relationship between open market operations and financial innovations, the hierarchical regression made it possible to

investigate the impact of open market operations on credit availability. The analyses of hierarchical regression were shown in Tables 4.23a, 4.23b, and 4.23c. The model is summarized in Table 4.23a.

Table 4.23 a: Model Summary of Moderation of OMO on Credit Access

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig
1	.105	0.011	0.008	0.82685	0.011	4.125	1	369	0.043
2	.321	0.103	0.098	0.78843	0.092	37.832	1	368	.000

a. Predictors: (Constant), OMO

b. Predictors: (Constant), OMO, S

Source: Field Data (2021)

The study found that open market operations contributed to 1.1% of variance attributable to access to credit due to an achieved coefficient of determination of .011. These results were presented in model 1 in which access to credit was regressed on open market operations. With a 0.103 coefficient of determination, model 2, which analyzed the relationship between open market operations and financial innovation and correlated credit availability, explained 10.3% of the variation in credit availability. The results showed that the R2 change was 0.092, which indicates that there is a 9.2 percent moderating effect of financial innovation on the relationship

between loan availability and open market activities. The study also observed that this rise in The financial innovation has a statistically significant effect on the variation in loan availability at the 5% level of significance. P < 0.05 and F change = 37.832 were the causes of this.

ANOVA was used to determine whether the two models that is, model 1 (with open market operations as the only predictor) and model 2 (with open market operations and financial innovation as predictors) were a good fit for data. The examination on whether the models were a good fit for data was examined using the f test at 5% (0.05) level of significance and the results presented in Table 4.23b.

Table 4.23 b: ANOVA for Moderation of OMO on Credit Access

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.820	1	2.820	4.125	.043
	Residual	252.276	369	.684		
	Total	225.097	370			
2	Regression	26.338	2	13.169	21.185	.000
	Residual	228.759	368	.622		
	Total	255.097	370			

a. Dependent Variable: CA

b. Predictors: (Constant), OMO

c. Predictors: (Constant), OMO, S

Author: Field Data (2021)

The model 1 achieved the f ratio results of F (1, 369 = 4.125) with a p value of < 0.05 leading to a conclusion that the model was a good fit for data at 5% level of

significance since p is less than 0.05. The results further revealed that the F ratio results stood at F (2, 368 = 21.185) with p< 0.000, leading to It may be concluded that model 2 adequately fitted the data at a level of significance of 5% because p < 0.05. After it was shown that the two models adequately explained the data, access to credit was dependent on the connection involving open markets and financial innovations to see if open market operations was an independent predictor of credit availability. This was done using two-tailed t tests with a level of significance of 5%. The outcomes were shown in Table 4.23c.

Table 4.23 c: Coefficients for Moderation of OMO on Credit Access

Model		Unstandardized Coefficients	Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	
1	(Constant)	3.366	.176		19.148	.000
	OMO	.104	.051	.105	2.031	.043
2	(Constant)	3.754	.179		20.961	.000
	OMO	-.535	.115	-.539	-4.655	.000
	S	.127	.021	.712	6.151	.000

Dependent Variable: CA

Author: Field Data (2021)

The results for the open market operations influence on access to credit stood at β = 0.105, $t_{0.025}$ (1,369 = 2.031, p = 0.043). These results indicated that the open market operations had a statistically substantial impact on loan availability at the 5% significance level since p was less than 0.05. The results further revealed that open market operations showed a favourable correlation with loan availability to the magnitude of 0.105 implying that a unit change to the open market operations will be associated with 0.105 increases in the access to credit.

According to the second model, credit availability rose as open market activities developed and were restrained by financial innovation to 0.712 units since $\beta = 0.712$, $t_{0.025}$ (2,368 = 6.151, p = 0.000).

These results revealed that financial innovations effectively tempered the connection between credit availability and open market activities by stepping up the effect of open market operations on access to credit. It is important to note, however, that even while the effect was greatly reduced, open market operations still had a statistically significant affect on loan availability (β = -0.539, t = -4.655, p = 0.000) with the combination of financial innovation and open market operations.

The alternative was thus accepted, leading to a finding that financial technologies have a highly significant regulating effect on the relationship among open market operations and credit access by SMEs in Kisumu County. Consequently, the null hypothesis, which held that financial developments have no in statistical terms significant facilitating effect on the connection between open market businesses and credit access by Kenyan medium-sized businesses in Kisumu County, was rejected.

4.7.5.4 The Moderation of Financial Innovation on Moral Suasion and Access to Credit

The subsequent hypothesis was developed in order to evaluate the moderating impact of financial breakthroughs on the impact of moral persuasion on credit availability: Financial innovations do not statistically significantly moderate the effect of moral persuasion on small and medium-sized businesses' ability to get loans.

The study therefore sought to undertake a hierarchical regression in order to examine if financial innovation moderated moral suasion and access to credit. The hierarchical regression enabled the examination of the effect of moral suasion on access to credit by using the interaction between moral suasion and financial innovation. The hierarchical regression analyses are presented in Table 4.24a, Table 4.24b and Table 4.24c.

Table 4.24 a: Model Summary of Moderation of Moral Suasion on Credit Access

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	.371	.137	.135	.77228	.137	58.721	1	369	.000
2	.431	.186	.182	.75120	.049	21.991	1	368	.000

a. Predictors: (Constant), MS
b. Predictors: (Constant), MS, T

Source: Field Data (2021)

As shown in model 1, which represents the results of a regression analysis between access to credit and moral suasion, the study concluded that moral suasion explained 13.7% of the variance that might be attributed to credit availability. According to model 2 results, moral persuasion and financial innovation both had coefficients of determination of 0.186, meaning that these two factors accounted for 18.6% of the variance in credit availability. It is interesting that, with a R square change of 0.049,

financial innovation adds an extra 4.9% variance to the availability of credit. The study further noted that this increase in influence of the financial innovation on the variance to the access to credit is statistically significant at 5%. This was attributable to F change = 21.991 with $p < 0.05$.

The ANOVA was used to determine whether the two models that is model 1 (with moral suasion as the only predictor) and model 2 (moral suasion and financial innovation as predictors) were a good fit for data. The examination on whether the models were a good fit for data was done using the f test at 5% (0.05) significant threshold and the outcomes shown in Table 4.24b.

Table 4.24 b: ANOVA for Moderation of Moral Suasion on Credit Access

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	35.022	1	35.022	58.721	.000
	Residual	220.075	369	.596		
	Total	255.097	370			
2	Regression	47.432	2	23.716	42.026	.000
	Residual	207.665	368	.564		
	Total	255.097	370			

a. Dependent Variable: CA

b. Predictors: (Constant), MS

c. Predictors: (Constant), MS, T

Source: Field Data (2021)

The model 1 achieved the f ratio results of F (1, 369 = 58.721), with p value = 0.000 leading Since p is less than 0.05, it may be concluded that the model provided a satisfactory fit for the data at the 5% level of significance. The results further revealed

that in model 2 the F ratio results stood at F (2, 368 = 42.026), $p < 0.05$, indicating that model 2 was an excellent match for the data at the 5% level of significance, with a p value of 0.000. When it was determined that the two models matched the data well, the two-tailed t tests were conducted at the 5% level of significant to see whether moral persuasiveness was a significant predictor of credit availability with an interaction term T. Table 4.24c provided the findings.

Table 4.24 c: Coefficients for Moderation of Moral Suasion on Credit Access

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.498	.163		15.290	.000
	MoralSuasion1	.355	.046	.371	7.663	.000
2	(Constant)	2.689	.164		16.391	.000
	MoralSuasion1	-.064	.100	-.067	-.641	.522
	T	.088	.019	.490	4.689	.000

a. Dependent Variable: CA

Source: Field Data (2021).

Regarding the impact of moral persuasion on credit availability, the findings were $\beta = 0.371$, t0.025 (1,369 = 7.663, $p = 0.000$). Because p was smaller than 0.05, these findings showed that moral persuasion had a statistically significant impact on credit availability at the 5% significance level. The findings also demonstrated a positive correlation between moral suasion and loan availability, with a magnitude of 0.371. This suggests that a unit change in moral suasion will be linked to a 0.371 rise in credit availability.

According to the study, in model 2, financial innovation moderated moral suasion improved loan availability by 0.490 units $\beta = 0.490$, t0.025 (2,368 = 4.689, $p = 0.000$). These findings suggest that the results were statistically significant at a 5%

level even in the presence of the interaction between financial innovations and moral persuasion. It is evident that moderation significantly decreased the favorable to negative and statistically insignificant impact of moral persuasion on credit availability.

The study's conclusion was that financial innovation moderated the relationship between moral persuasion and funding availability for small and medium-sized Kenyan firms in Kisumu County. This resulted in the rejection of the null hypothesis, which held that there was no statistically significant moderating effect of financial innovations on the relationship between moral persuasion and financing availability for Kenyan small and medium-sized firms.

4.7.6 Summary of Research Hypotheses and Conclusions.

The summary of research hypotheses and conclusions is presented in Table 4.25.

Table 4.25: Summary of Research Hypotheses and Conclusions.

Hypothesis	ρ	Conclusion
H_{01}: Interest rate caps have no statistically meaningful impact on small- and medium-sized businesses'	.000	$H_{01}$is not supported
H02 The cash reserve proportion has no statistically noteworthy effect on small and medium-sized businesses' ability to get loans.	.000	H_{02} is not supported
H03: Micro, small, and medium-sized businesses' ability to get credit is not statistically significantly impacted by open market activities.	.043	H_{03} is not supported
H04: There is no statistically significant impact of moral persuasion on micro, small, and medium-sized businesses' ability to	.000	H_{04} is not supported

H_{05a} Interest rate caps and loan availability are not statistically significantly mediated by financial innovations..	.000	H_{05a} is not supported
H_{05b} The relationship between credit availability and the amount of money buffer ratio is not significantly moderated by financial innovations, according to statistical analysis.	.000	H_{05b} is not supported
H_{05c} The association between open market activities and loan availability is not moderated by financial innovations in a way that is statistically significant.	.000	H_{05c} is not supported
H_{05d} The relationship involving moral persuasion and loan availability is not statistically significantly moderated by financial developments.	.000	H_{05d} is not Supported

Source: Field Data (2021)

An overview of the direct as well as indirect impact of monetary measures on SMEs' ability to get credit is shown in Table 4.25. It is clear from Table 4.25's hypothesis test findings that there is a substantial correlation between financial interventions and credit availability. Furthermore, the link involving monetary interventions and loan availability is moderated by financial developments. The findings shown in Table 4.25 indicate that there is a moderating effect of financial innovation on the direct relationships between interest rate ceilings, cash reserve ratios, open market operations, and moral persuasion. The conceptual framework in Figure 2.1 suggested that the cash reserve ratio, an interest rate cap, open market activities, and moral persuasion, and loan availability were all statistically strongly associated. Financial innovation was also identified as a statistically significant mediator of relationships.

4.7.7 Proposed Model

The framework shown in Figure 4.2 provides a visual representation of how monetary interventions affect small and medium-sized businesses' ability to get credit in Kisumu County, Kenya. Additionally, it illustrates how financial innovations function to moderate the connection between macroeconomic interventions and loan availability for Kenya's small- and medium-sized business sector.

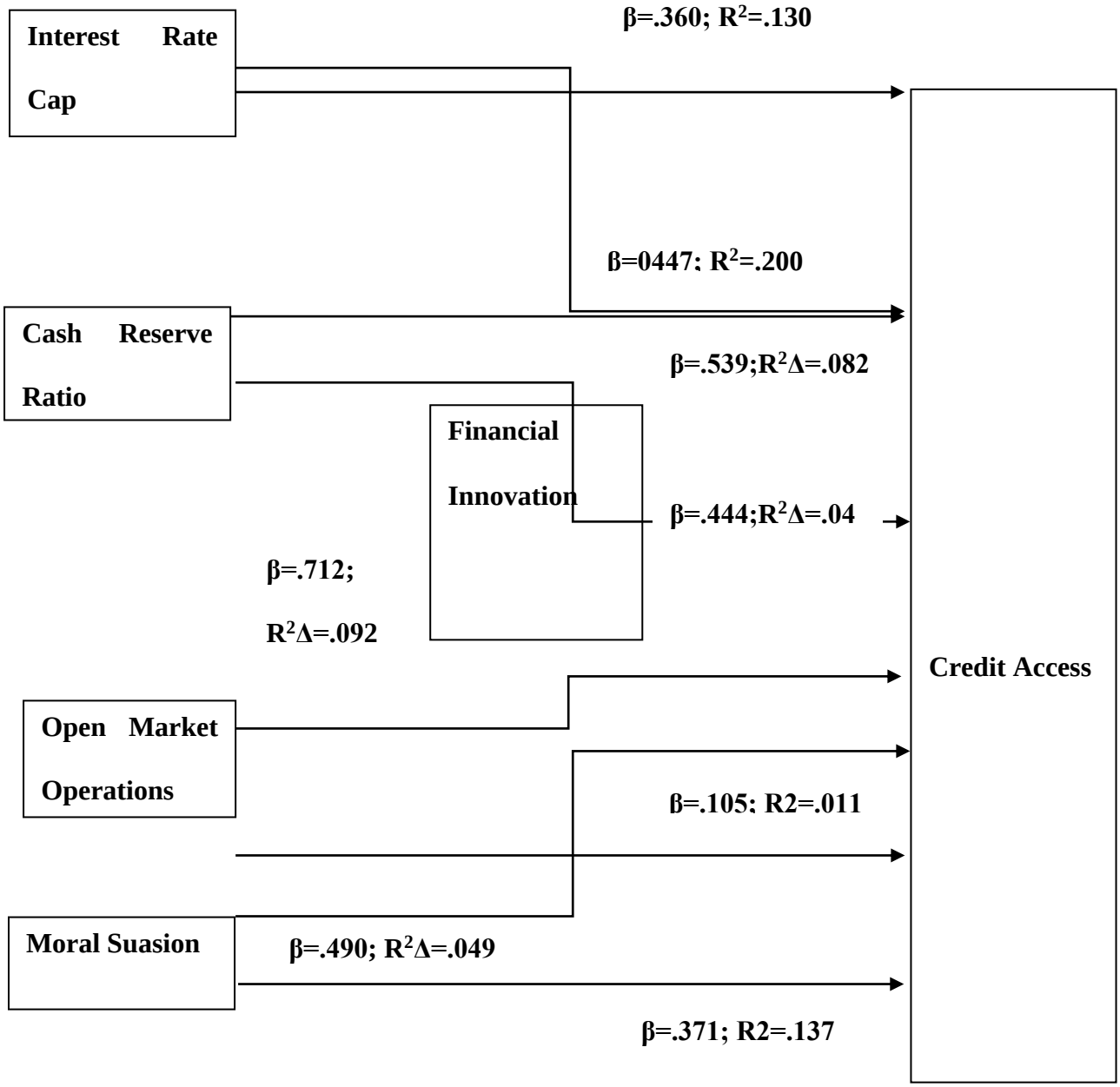

Figure 4.2: Proposed Model

Source: (Author, 2023)

In the model the findings of the direct and the hierarchical relationships are displayed. From the findings it is visible that monetary interventions had statistically noteworthy impact on the availability of credit by SMEs in Kisumu and that the effect was moderated by financial innovations.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Findings

With a focus on the moderating impacts of financial innovations, the main goal of this study was to evaluate the effects of financial initiatives on the ability of small and medium-sized firms in Kisumu County, Kenya, to acquire financing. This chapter provides an overview of the results for every one of those objectives. Five objectives were developed in order to assess how financial innovations have moderated the impact of financial intervention on small- and medium-sized businesses' access to credit. Using descriptive statistics, the respondents' level of agreement with assertions linking the variables was ascertained. In order to confirm the results of the hypothesis, single- and multiple-linear regression analyses were also carried out.

5.1.1 The Effect of Interest Rate Caps on Access to Credit by SMEs.

The initial goal was to determine how interest rate limitations affected small and medium-sized businesses' ability to obtain loans. The majority of respondents believed that interest rate caps had an impact on lending rates for SMEs, SMEs' non-performing loans, SMEs' ability to borrow money from MFIs, the amount of loans given to SMEs, and the SMEs' payback schedule. However, they did moderately agree that interest on deposit, shrinking of loan books and delay in the ratification of Interest rate caps had an effect on lending to SMEs. The majority of respondents believed that interest rate caps affected SMEs' ability to get finance.

A modest, positive, although statistically significant association was found via correlation analysis at a significance threshold of 5%. The interest rate cap favorably and statistically significantly affected loan availability, according to another finding derived from basic linear regression analysis. Interest rate caps explained 13% of the variation in credit availability, according to the coefficient of determination.

5.1.2 The Effect of Cash Reserve Ratio on Access to Credit by SMEs.

The second goal examined how small and medium-sized businesses' access to credit was impacted by the cash reserve ratio. It was found from descriptive statistics because the majority of responders agreed that changes in cash reserve ratio would affect credit supply to SMEs, loan advances to SMEs, private sector lending, lending behavior of banks to SMEs and loan uptake by SMEs. On the other hand, the respondents did moderately agree that liquidity of banks and demand deposits by the CBK were affected by changes in the cash reserve ratio. The majority of respondents, on average, agreed that variations in the cash reserve ratio had an impact on loan availability by SMEs.

The outcome from the simple regression analysis revealed that cash reserve ratio had a positive statistical significant effect on access to credit. This had also been confirmed by correlation analysis. The study found a coefficient of determination. The implication of this is that cash reserve ratio contributes to 20% of the variation in access to credit. These study findings advances research in this area as it shows the mechanisms by which cash reserve ratio influences credit access for small and medium sized enterprises.

5.1.3 The Effect of Open Market Operations on Access to Credit by SMEs.

Objective three sought the effect of open market operations affect small and medium businesses' ability to get loans. Most of the respondents concurred that open market operations affected government bond yields. They however, moderately agreed that credit supply by financial institutions were affected by the 91 day treasury bills in the OMO, cost of credit was affected by the repo rate in the OMO, credit supply was affected by reverse repo rates in the OMO, lending behavior of banks was influenced by the sale and purchase of financial instruments in the OMO and that credit supply to SMEs was affected by activities of the OMO respectively. The respondents, on average, somewhat believed that open market activities had an impact on SMEs' ability to get financing.

To ascertain the result, a straightforward regression analysis was performed. The results showed that SME credit availability was positively statistically significantly impacted by open market operation. at a 5% significant level. The coefficient of determination implied that open market operations contributed to only 1.1% of the variation in access to credit by SMEs. This is possible because most SMEs may not be in a position to take part in the open market operations to raise funds for business.

5.1.4 The Effect of Moral Suasion on Access to Credit by SMEs.

Objective four was on how moral persuasion affects small and medium-sized businesses' ability to obtain finance. The respondents largely agreed that moral suasion caused the government to persuade banks to reduce interest rates for SMEs. They did, however, somewhat concur that government regulations on the establishment of funds for the informal sector's inclusion and the establishment of

savings accounts for SMEs by commercial financial institutions, creation of loan facilities for SMEs, provision of loan guarantee schemes to SMEs and the interest rates to SMEs respectively, were all acts of moral suasion by the government. The respondents also generally agreed to a moderate extent that moral suasion had an effect affect SMEs' ability to get finance.

Moral persuasion has a positive statistically significant influence on loan access, according to the results of the basic regression analysis. According to the coefficient of determination, 13.7% of the variation in SMEs' access to finance can be attributed to moral persuasion. The findings of this study provide empirical evidence about the influence of moral persuasion on credit availability.

5.1.5 The Moderation of Financial Innovations on Monetary Interventions and Access to Credit by SMEs

The ultimate goal was to determine how financial innovations affected the way that monetary policy affected the availability of credit. There were four subobjectives within this main goal. This study set out to examine the assertion that financial innovations affect how each of the four monetary treatments affects a borrower's ability to obtain credit. The four objectives were put to the test using hypothesis testing. The methodology by Fairchild & MacKinnon (2009) was applied in order to examine the hypotheses. Initially, the statistical significance of the direct relationship was determined by regressing accessibility to credit on all of the predictor factors. An analysis of hierarchical multiple regression was done to determine whether financial innovations (FI) had a moderating influence on the link between monetary

interventions (MI) as well as credit access (CA). Credit access needed to be regressed on the variables that are independent (IRR, CRR, OMO, and MS) as the initial step. Regressing credit availability based on interaction terms was the second phase. To put it another way, the interactions reveal whether or not the linkages account for more fluctuations in the parameter of interest than the variables that do not depend on one another can. The moderator effect is apparent if the interaction term explains a statistically significant rise or fall in the dependent variable's variance. 5.1.5.–5.1.8 summarizes the findings.

5.1.5.1 The Moderation of Financial Innovations on Interest Rate Cap and Access to Credit by SMEs

The first moderating hypothesis (H05a) stated that the impact of interest rate constraints on the ability of small and medium-sized firms to get loans is not statistically significantly moderated by financial innovations. The method described in Fairchild & MacKinnon (2009) was used to test the hypothesis. First, by regressing loan availability on interest rate ceilings, the importance of the direct link was examined. Regressing credit availability on the interest rate cap revealed a substantial and positive correlation between interests rate cap and credit availability, with $\rho < 0.05$. After that, a hierarchical analysis was carried out by regressing credit availability on the relationship between financial innovations and interest rate caps. The significance test results demonstrated a statistically significant and beneficial association between interest rate caps and financial innovation. It was proven that

financial innovations reduced the effect of an interest rate cap on credit availability because the β in model 2 was larger than the β in model 1. Additionally, R2 changed by.082, or from.130 to.212. Furthermore, a considerable portion of the variance was explained by financial developments. Given that the independent variable and the moderating variable are both significant predictors of loan availability, it was concluded that financial innovations regulated the relationship between interest rate caps and these availability factors.

5.1.5.2 The Moderation of Financial Innovations on Cash Reserve Ratio and Access to Credit by SMEs

The second theory was to show that the connection between the proportion of cash reserves and the financing capacity of medium- and small-sized companies was not significantly moderated by financial innovations.

To assess the significance of the direct link, credit availability was first regressed using cash reserve ratio. There was a significant and positive correlation between the two variables when accessibility to credit was regressed on the cash reserve ratio. After that, a hierarchical study was carried out by regressing loan availability on the relationship between the cash reserve ratio and financial innovations.

A statistical significant and positive correlation among the cash reserve percentage and financial innovation was found by the significance test results. Model 2's β was somewhat less than Model 1's β, while R2 increased by.046, from.200 to.246,. This demonstrated that, when the variance increased slightly, financial innovations

increased the impact that cash reserves on lending availability, moderating the effect of the cash reserve ratio on credit availability. Furthermore, a substantial amount of the variance was explained by financial innovations. Financial innovations were found to have an impact on the link between the ratio of cash reserves and credit availability since credit availability was significantly predicted by both the moderating overall independent factors.

5.1.5.3 The Moderation of Financial Innovations on Open Market Operations and Access to Credit by SMEs

The impact of financial advancements in the impact of transparent markets on accessible credit was explored by testing the hypothesis that financial innovations do not statistically attenuate the consequence of free market activities on the loan-accessibility of companies that are small or medium-sized. First, access to credit was regressed on open market activities to examine the relevance of the direct relationship. The variables had a strong and positive correlation, according to the findings of regressing credit availability on open market activities. Next, by regressing credit availability on the relationship between financial innovations and open market operations, a hierarchical regression was carried out.

The results of the significance test made it clear that there was a statistically significant and favorable connection between financial innovation. It was determined that financial innovations tempered the effect of open markets on credit availability by increasing the influence of open market operations on credit availability when

variation increased, as the β in model 2 is bigger than the β in model 1 and R2 changed by 9.8%. Furthermore, financial innovations account for a sizable portion of the volatility. It was determined that financial innovations moderate the link between open market operations and credit availability given that the independent variable and the moderating variable both significantly predict the availability of credit.

5.1.5.4 The Moderation of Financial Innovations on Moral Suasion and Access to Credit by SMEs

Testing the null hypothesis—financial innovations have no statistically significant moderating influence on the connection between moral persuasion and loan availability for small and medium-sized businesses—allows researchers to examine the relationship between moral persuasion along with loan availability as well as the moderating effect of financial innovations. Regressing access to credit on moral persuasion was the first method used to test the relevance of the direct relationship. Regressing loan availability on moral persuasion revealed a statistically substantial and positive association between the two. After that, loan availability was regressed in order to perform a hierarchical regression on the relationship among financial innovations as well as moral persuasion.

Innovation in finance and moral persuasion have a significant and positive association, according to the significance test results. It was determined that financial innovations tempered the effect of moral persuasion on loan availability by amplifying the of moral suasion on credit access as the variation grew, as evidenced

by the fact that the β in model 2 is bigger than the β in model 1 and that R2 increased by.049. Furthermore, financial innovations account for a sizable portion of the volatility. As both the independent and moderating variables are important predictors of credit availability, it was found that technological advances regulated the relationship amongst morality along with SMEs' access to credit.

5.2 Conclusion

The purpose of the study was to determine how the money accessibility of small- and medium-sized Kenyan businesses in Kisumu County was affected by interest rate the ceilings, cash reserves ratios, open market activities, and moral justifications, in that order. The study further sought to examine on whether financial innovations acted as a mitigating factor in the impact of monetary interventions (interest rate cap, open market activities, the cash reserve ratio, and moral suasions) on the access to credit. The following conclusions were made: In the initial The purpose of the study was to find out how interest rate caps affected the SMEs in Kisumu County's ability to obtain financing. The study's conclusions showed that interest rate caps greatly increased SMEs in Kisumu County's capacity to obtain loans. The study also demonstrated that raising the interest rate ceiling will facilitate SMEs' access to loans. The study found that interest rate limitations had a major impact on the disparity in small and medium-sized to credit in Kisumu County. The results proved to be in line with a Colombian study that showed this intervention made it easier for people to get credit. It did, however, go counter to a research conducted in Nairobi County, Kenya, which found that despite efforts to lower borrowing costs, interest rate limitations decreased the

accessibility of credit for business owners. It is for this reason that different studies on this issue have produced contradictory results. The impact of the proportion of cash reserves on loan availability was the study's second goal. The research indicated that the cash reserve ratio had an advantageous and statistically significant effect on loan availability based on the obtained statistical data. The study also concluded that an increase in cash reserve ratio was associated with an increase in access to credit amongst the SMEs in Kisumu County. It was concluded that cash reserve ratio contributed to a significant ratio of the variation in credit access by SMEs. It is further concluded that the findings in this study are supported by most studies, for instance, the studies in China and Nigeria which revealed that a change in cash reserve ratio influenced loan growths in banks in that more customers could access loans more due to increased cash reserve ratio. However, the findings contradicted some studies which found that cash reserve ratio negatively affected credit supply to SMEs.

The third goal looked at how open market processes affected people's ability to get credit. According to the study's findings, open market activities have a favourable and statistically significant impact on loan availability. The study also concluded that an increase in open markets operations was associated with an increase in access to credit amongst the SMEs in Kisumu County. However, open market operations contribute minimally to the variation on credit access. This is in agreement with the studies in Jordan and Kenya which concluded that open market operations influenced money supply and lending behavior The study conclusions are however inconsistent with the conclusions in other studies which concluded that open market operations negatively affected credit supply.

The study's fourth goal was to determine whether moral persuasion affected credit availability. According to the study's findings, getting credit was positively and statistically significantly impacted by moral persuasion. The study also found that among SMEs in Kisumu County, moral suasion had a positive correlation with credit availability, and that a rise in moral suasion would end up in a rise in credit availability. It was also determined that a certain amount of the variation in credit availability was due to moral persuasion. The results of this study are consistent with those of other studies conducted in Canada, Europe, and Uganda, which corroborated the findings by stating that the governments of those countries convinced their banks to lend money to small businesses, with the effect being greater for banks that were the target of moral persuasion. Nonetheless, other research found that most people thought banks would continue to function well even in the absence of government assistance.

Examining if financial innovation provided a dampening impact on the connection between interest rate ceilings and the availability of financing for SMEs in Kisumu County was the study's sixth goal. The study came to the conclusion that loan availability was positively and statistically significantly impacted by the relationship between interest rate caps and financial innovations. The study also found that loan availability among SMEs in Kisumu County was positively connected with the interplay between interest rate caps and financial innovations, and that a stronger correlation would result in easier access to credit. Based on the statistical findings, the study also came to the conclusion that financial innovations moderated the impact of interest rate caps on credit availability. This was indicated by a slight increase in

the coefficient of drive (R2 change), which suggested that financial innovations added 8.2% to the variation in credit availability.

Investigating whether financial innovation has a moderating effect on the relationship among cash reserve ratio and credit availability for small and medium-sized enterprises (SMEs) in Kisumu County was the sixth goal of the study. According to the study's findings, SMEs' ability to obtain credit was positively and statistically significantly impacted by the relationship between cash reserve ratio and financial innovations. The study also found that, among SMEs in Kisumu County, the relationship between cash reserve ratio and financial innovations was positively correlated with loan availability, and that, as these two variables increased, so would credit availability. Additionally, statistical evidence suggests that financial innovations moderated the connection between the cash reserve ratio and credit availability. This is indicated by a shift in the coefficient of determination, which suggests that financial innovations explained a greater portion of the variation in credit availability.

Examining if financial innovation provided a moderating effect on the connection between open market operations and credit availability for SMEs in Kisumu County was the seventh goal of the study. The study found that SMEs' ability to obtain credit was positively and statistically significantly impacted by the relationship between open market activities and financial innovations. The study also found that there was a positive correlation between loan availability for SMEs in Kisumu County and the connection between open market operations and financial innovations, and that more interaction between the two would result in more credit availability. The study also

found that, as the R2 changed significantly, indicating that innovations in finance contributed an additional percentage to the variation in credit availability, open market operations' impact on SMEs' access to credit in Kisumu County was statistically and significantly mitigated by financial innovation.

The study's eighth goal was to determine if financial innovation affected the correlation between SMEs in Kisumu County's ability to obtain financing and moral persuasion. According to the study's findings, SMEs' ability to obtain financing was positively and statistically significantly impacted by the relationship among financial innovations and moral persuasion. The study also found that, among SMEs in Kisumu County, the relationship between moral persuasion and financial innovations was positively connected with loan availability, and that, as these interactions increased, so would credit availability.

Furthermore, statistical data suggests that financial innovations have a moderating effect on the statistically significant relationship between moral suasion and credit availability. This is due to a rise in the coefficient of determination, which added to the volatility in credit availability.

5.3 Theoretical Implications

The objective of this The study's goal was to ascertain how financial interventions affected Kisumu County's small- and medium-sized businesses' capacity to obtain loans. It explained in further detail how financial innovations mitigate the effect of economic interventions on the financing capacity of small and medium-sized enterprises. Three theories served as the foundation for the study: Friedman's

monetarism theory, Wicksell's loanable funds theory, and the Keynesian liquidity preference theory. The results of the study supported the three theories, making them applicable in similar studies.

According to the liquidity the theory of preference, interest rates are primarily determined by the strategy employed to reserve the power to influence future consumption. Thus, a person's liquidity preference refers to whether they would like to have currency in liquid form or whether they would be prepared to give it up for a certain amount of time. Since the idea of liquidity preference was incorporated into the theory of the demand for money, Keynes was able to show that the money supply and liquidity preference work together to determine interest rates. The results thus show that the amount of money supply is impacted by interest rate limitation. The results show that the interest rate cap significantly and favorably impacted SMEs' ability to obtain loans. Thus, this theory can be accepted and applied to investigate how interest rate caps affect the ability of small and medium-sized enterprises (SMEs) to obtain loans. Monetary authorities have the power to influence investment processes by managing the amount of money in circulation and the speculative decisions people make regarding liquidity.

On the opposite hand, the idea of loanable funds contends that Interest rates are influenced by the availability and consumption of loanable money. The predicted rate of return on an investment is compared to the interest rate. There will be a strong demand for loanable money for investments if the interest rate is lower, and vice versa. In order to satiate their need for liquidity, some people also wish to store loanable money as idle cash. Hoarding will increase with low interest rates and vice

versa. On the other hand, the sources of loanable money include bank credit, savings, and disinvestments.

When banks give money quickly without first determining a borrower's creditworthiness, the default rate would increase leading to business risks. This would in turn cause financial institutions to charge higher premiums to enable them compensate for the default risks. It is because of these risks that banks put in place such hurdles as collaterals, credit scorings, availability of bank accounts or savings, provision of guarantors and the like before supplying credit to their clients. They also prefer setting interest rates at levels that would incorporate the premiums. However, interest rates should be allowed to fluctuate freely to cover the transaction costs and prevent the banks from rationing supply of funds to the riskier sectors. The study's findings show that, despite OMO's negative effect whenever all the variables were adjusted for together, interest rate caps, cash reserve ratios, open market operations, and moral persuasion are all viable means of offering loanable funds that have had a significant impact on SMEs' access to credit. The equilibrium interest rate, which is the point where the supply and demand for loanable money converge, can be found using this approach.

The monetarists' theory argues that supply of money in the economy should be increased gradually and in a predictive manner. They posit that price correlates directly with the quantity of money in the economy. The implication is that the monetary intervention tools should be used to gradually and in a predictive manner increase the quantity of money until an equilibrium rate of interest is attained. SMEs

will also be able to access credit if supply is adequate and the interest rate is at the desired level for the clients.

5.4 Implication for Policy and Practice

5.4.1 Implication for Policy

Striking a balance in the monetary intervention tools to be employed by the Central Bank, by and large, depends on the existence of a monetary policy. This policy would offer guidance on the best mix of monetary tools to be used to optimize the well-being of any economy by controlling the quantity of money and its accessibility. The study findings reveal that monetary interventions can enhance access to credit by SMEs. They also show that The impact of monetary intervention on loan availability is mitigated by developments in finance. Policies that would ensure implementation and control of the monetary interventions should be formulated. Mechanisms for firm checks should be crafted to ensure efficient and effective implementation of the same. These policies should be reviewed regularly to ensure they are current and offer proper guidance. Their implementation could ensure optimum utilization of the investment channels hence ensuring growth and stability of the economy.

5.4.2 Implication for Practice

This study set out to ascertain how monetary interventions affected SMEs in Kisumu County's ability to obtain loans. It was also looked at how financial innovations affected the link amongst monetary interventions and SMEs' ability to get financing. Empirical literature show mixed reactions regarding how monetary intervention models affect borrowers' ability to obtain loans by SMEs. Besides, most findings on interest rate cap posit that interest rate caps inhibited credit access by SMEs.

However, the findings on moral suasion reveal that persuasions and directives enhance credit accessibility by SMEs. Financial innovations have also been found to enhance access to credit by SMEs.

The results of the four independent variables of this study had a statistical significant contribution to access to credit by SMEs. Even though OMO had a significant effect on access to credit, its contribution was minimal unlike the other three interventions. This may imply that the instruments used in the open market operations may not be accessible by the small traders due to the minimum amount required for investment. The players of the financial markets could therefore think of innovative ways to customize products for the small traders in the open market operations. The other three monetary intervention tools could be put into full use to ensure optimum access to credit by SMEs.

This study discovered that by expanding the variety of loans available to SMEs, financial innovations enhanced the impact of monetary intervention on credit availability. The analysis confirmed that innovations in finance moderated the connections and that monetary interventions had a substantial impact on SMEs' ability to get loans. The use of financial innovations should therefore be encouraged as a bridge that would enhance access to credit by SMEs. This is a major contribution to knowledge as no study has established this fact. The other contribution is the derivation of an output model from the empirical data and which could guide the monetary policy players in providing a link between monetary interventions, financial innovations and access to credit.

5.5 Recommendation for Policy and Practice

The results have a number of real-world implications for small business finance management. First, reasonable measures that central banks can take to influence the supply and demand of money in the small business sector include interest rate ceilings, cash reserve ratios, open market operations, and moral persuasion. Managers of monetary policy at central banks can improve the financial inclusion of small and medium-sized enterprises by concentrating on regulating interest rates and the amount of cash on hand for credit. Based on research on the function of financial innovations and the effects of monetary intervention on loan availability, the current study can offer a number of recommendations. Numerous suggestions for a central bank can be made based on the findings that the sale of public securities and convincing bankers to enhance funding for medium- and small-sized companies can lead to. First and foremost, policies that aim to increase small and medium-sized businesses' access to capital should support open market operations, cash reserve ratios, interest rate caps, and moral persuasion. These interventions ought to center on regulating interest rates by imposing a minimum percent on deposit including a maximum percent on loans intended for the sector, guaranteeing cash flow, and convincing lenders to grant loans with favorable terms to the SME sector.

Additionally, the central bank can improve financial inclusion policies by setting lower interest rates for lending facilities to small and medium-sized businesses and greater interest rates for depositors in the microfinance sector. Selective open market activities can also affect the amount of credit extended to a powerful industry, such as small and medium-sized businesses.

Regulations have to be centered on enhancing the outcomes of free market operations and moral persuasion regarding loan availability. An enhancement in their direct impact on the financial inclusion of small and medium-sized enterprises should be the goal of these financial interventions. Policies should also work to enhance the way financial innovations are used in the interaction between the sale and acquisition of government securities and the selective credit control that affects small and medium-sized businesses' ability to get credit.

According to the study's conclusions, policymakers should prioritise sector-specific initiatives above general ones in order to improve access. The results imply that sector-specific monetary interventions can enhance the small and medium sector's access to financing in addition to having policy consequences. Any strategy aimed at the industry should, in particular, take advantage of the importance of rates of interest and banks' capacity to generate credit with the funds that they hold. Moreover, sector-specific initiatives should emphasize how financial innovations improve credit availability. Policies can specifically focus on innovations that will support industry-specific goods, services, procedures, and organizational innovations related to credit acquisition. Therefore, the issue of credit exclusion can be effectively handled by improving the balance-sheet function of financial innovations. Furthermore, the small and medium-sized business sector can contribute more to the solution of unemployment issues by creating monetary policies tailored to their needs.

While the current study's findings increase our understanding of how Financial innovations have a statistically significant moderating effect on the finance that small

and medium-sized businesses receive. The consequences of monetary interventions go beyond monetary interventions and SME credit availability.

From the study findings it was concluded that financial innovations moderate the influence of monetary actions on loan availability by SMEs. There is no study that has had such findings and this is a great contribution to the small business finance. In that connection a new model (Fig. 4.2) has been developed that would enhance access to credit by the SMEs incorporating monetary interventions and financial innovations.

5.6 Recommendation for Further Studies

The study made the following numerous recommendations for additional research on the various monetary interventions: The nation has abolished interest rate capping, even though this study shows that it positively and statistically significantly affects SMEs' ability to obtain financing. The report recommends looking into how the country's SMEs' access to credit might be affected by the removal of the interest rate cap.

The report also mentions that the Central Bank of Kenya has persisted in using moral persuasion, specifically urging commercial lenders to refrain from raising their interest rates to levels prior to the country's interest rate cap, even after the interest rate restriction was repealed. According to the report, there should be research on how these moral arguments affect SMEs' ability to obtain credit facilities (without the need for an interest cap regulation).

The individual correlations between rates of interest caps, cash reserve ratios, open market activities, as well as moral suasion against credit access among SMEs in

Kisumu were found to be moderated by financial innovation. However, innovative financial services, creative financial goods, new financial procedures, and innovative financial organization innovations made up the financial innovation. The report suggests looking at how these financial innovation levels affect the connection between monetary actions and small business lending availability.

The study's empirical design has produced a variety of useful applications along with implications for banks and monetary policy authorities that target small and medium-sized business owners and finance officers with their products. Nevertheless, some of the problems not addressed in this study might have answers with more research. Using qualitative analysis, in particular, can help clarify the type of interventions that modify the monetary interventions-credit relationship.

It is further recommended a study with the same independent variables be done with the dependent variable focusing on the performance of the banking sector. This is because these interventions directly affect the quantity of money held by the banks and it would be important to find out if they impact on the banks positively or negatively and if it trickles down to their clients.

In order to gain a deeper understanding of the moderating influence of each financial innovation on the linkages between each monetary intervention on credit availability, data analysis techniques can also be improved to incorporate route analysis. Unanswered questions necessitate additional research, in addition to suggestions for improving the technique for examining the issue of financial participation in small company financing. For example, further research is needed to determine which of the

four innovations in finance that were taken into consideration in this study is the most significant mediator in the connection between credit availability and monetary interventions. Contextual factors that could affect sectorial credit demand can be included in these studies as moderators. Research that uses mediation analysis can help us better understand the impact of innovations and interventions aimed at facilitating credit access in the microfinance industry. Therefore, studies focusing on small and medium-sized businesses' sectoral access to finance in Kisumu County, Kenya, and elsewhere can be improved by honing the conceptual and analytical frameworks employed in the study.

The results of the investigation were outlined in the current chapter, along with an analysis of the findings that agreed and disputed with those of earlier research. In order to provide a wider perspective on the efficacy of monetary measures in boosting the financial access of unbanked small companies in emerging economies, like Kenya and elsewhere, the results were grounded in empirical evidence. In this chapter, real-world ramifications and practical applications of the findings were discussed. The research findings' implications for management and policy led to additional suggestions being made by the study. Specifically, recommendations for realistic and doable steps have been proposed to close the conceptual, methodological, empirical, and contextual gaps that the current study has exposed.

The study's conclusions led to the conclusion that financial innovations mitigate the impact of monetary intervention on SMEs' ability to obtain loans. Such findings have never been found in a study, and this makes a significant contribution to the financing of small businesses. In that connection a new model has been developed that would

enhance access to credit by the SMEs incorporating monetary interventions and financial innovations.

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APPENDICES

APPENDIX I: Letter of Introduction

Dear Respondent,

RE: EFFECT OF MONETARY INTERVENTIONS ON ACCESS TO CREDIT AMONG SMALL AND MEDIUM ENTERPRISES IN KISUMU COUNTY, KENYA: THE ROLE OF FINANCIAL INNOVATIONS

As a PhD candidate at Kisii University, I am presently investigating how financial innovations play a role in the impact of macroeconomic interventions on small and medium-sized businesses' ability to obtain credit in Kisumu County, Kenya. This is a requirement for my degree, and the data you provide will be kept completely confidential and used only for academic purposes. Please be as honest as you can when answering the questions so that this study can be effectively completed. Your information will be handled with the highest secrecy and used only for academic purposes.

Your assistance and cooperation is highly appreciated. Thank you in advance for your cooperation.

Yours faithfully,

Rosalyne Adhiambo Osir
Adm. No: DCB/10418/15

APPENDIX II: Questionnaire

EFFECT OF MONETARY INTERVENTIONS ON ACCESS TO CREDIT AMONG SMALL AND MEDIUM ENTERPRISES IN KISUMU COUNTY, KENYA: THE ROLE OF FINANCIAL INNOVATIONS

Section A: Background Information

1. What is your age? {Tick appropriately}
   i. Below 20yrs ☐
   ii. 20-39yrs ☐
   iii. 40-59yrs ☐
   iv. 60yrs and above ☐
2. What is your gender? {Tick appropriately}
   i. Male ☐
   ii. Female ☐
3. What is your highest level of education? {Tick appropriately}
   i. Secondary ☐
   ii. Diploma ☐
   iii. Bachelor ☐
   iv. Post graduate ☐
   v. Others {please specify} ☐
4. How long have you been in business? {Tick appropriately}
   i. Less than 1yr ☐
   ii. 1 to less than 5yrs ☐
   iii. 5 to less than 9yrs ☐
   iv. 9yrs and above ☐
5. What is your position in your organization? {Tick appropriately}
   i. Owner ☐
   ii. Employed ☐

For section B-G Please rate your agreement with the following statements on a scale of 1 to 5, where 1 means you don't agree at all; 2 means you agree to a small amount; 3 means you agree to a moderate extent; 4 means you agree to a big extent; and 5 means you agree to an extremely large degree (VLE).

Section B: Interest rate cap

	NA 1	**SE 2**	**ME 3**	**LE 4**	**VLE 5**
The interest rate cap had an effect on lending rates for loans to SMEs.					
The interest rate cap has an impact on SMEs' deposit interest rates.					
Interest rate caps contributed to an increase in SMEs' non-performing loans.					
Commercial banks' loan books decreased as a result of the interest rate cap.					
The rate of return cap had an impact on the ability of microfinance institutions to lend to SMEs.					
Interest rate limitations cause a delay in the ratification of financial assistance to SMEs.					
The interest rate cap affected the amount of loans given to SMEs.					
The interest rate cap affected how long SMEs had to repay loans.					

Section C: Cash Reserve Ratio

	NA 1	SE 2	ME 3	LE 4	VLE 5
Credit supply to the SMEs is affected by a change of cash reserve ratio					
Loan advances to SMEs are influenced by a change of cash reserve ratio					
Liquidity of banks is influenced by a change of cash reserve ratios					
Private sector lending is affected by a change of cash reserve ratio					
Demand deposits by CBK is influenced by a change of cash reserve ratio					
The lending behavior of banks to SMEs is influenced by a change in cash reserve ratio					
Change in loan uptake by SMEs is influenced by a change in cash reserve ratio					

Section D: Open Market Operations

	NA 1	SE 2	ME 3	LE 4	VLE 5
Government bond yields are affected by the activities of the open market operations					
91 day treasury bill rates in the open market operations affects quantity of money loaned to SMEs					
The repos rates in the open market operations influences the loan terms to the SMEs					
The reverse repos rates in the open market operations affects the number of SMEs accessing					

loans					
Purchase of financial instruments in the open market operations influences quantity of credit accessed by SMEs					

Section E: Moral Suasion

	NA 1	SE 2	ME 3	LE 4	VLE 5
Moral suasion plays a role in the government's persuasion of banks to lower credit rates for small and medium-sized enterprises.					
Moral persuasion led to government directives on the establishment of funding for the informal sector's inclusion.					
Commercial banks' provision of savings options for SMEs is a result of moral persuasion.					
Commercial banks provide credit facilities for SMEs because they are morally persuaded to do so.					
Offering SMEs a loan guarantee program is a moral suasion facilitation.					
MFIs' interest rates for SMEs are determined by moral persuasion.					

Section F: Financial Innovation

	NA 1	SE 2	ME 3	LE 4	VLE 5
The development of financial services has an impact on the creation of ATMs.					
Financial organization innovation led to the use of cell phones in financial transactions.					
The development of financial processes led to the creation of credit cards.					
Innovations in financial products led to the development of mobile money.					
Innovations in financial organizations led to the launch of internet banking.					
Innovations in financial organizations led to the launch of mobile banking capabilities.					
Financial process innovation has made it simple to process loans via mobile devices.					
Financial service innovation has improved the capacity to deposit money using a mobile device.					

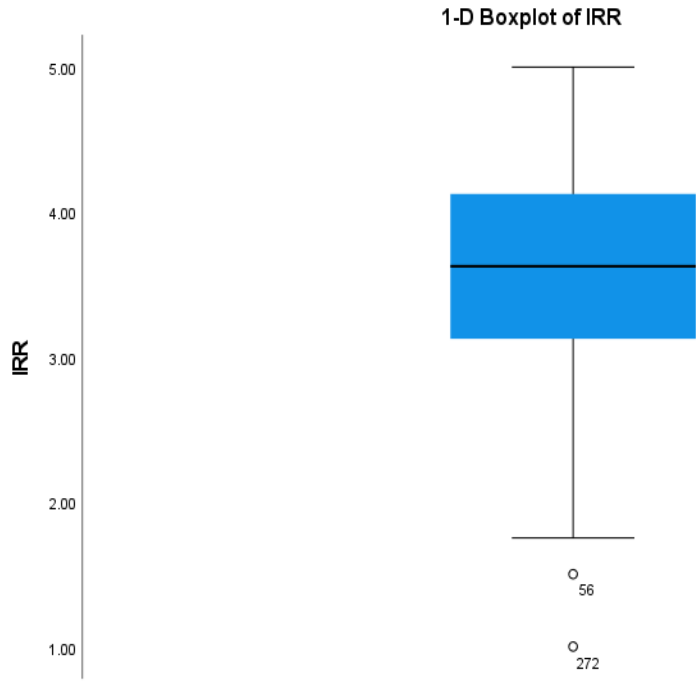
Section G: Access to Credit

	NA 1	SE 2	ME 3	LE 4	VLE 5
Due to easier access to financing, a large number of SMEs are using loan facilities.					
Because SMEs now have easier access to finance, more loans have been given to them.					
Due to easier access to financing, SMEs' loan payback terms are affordable.					

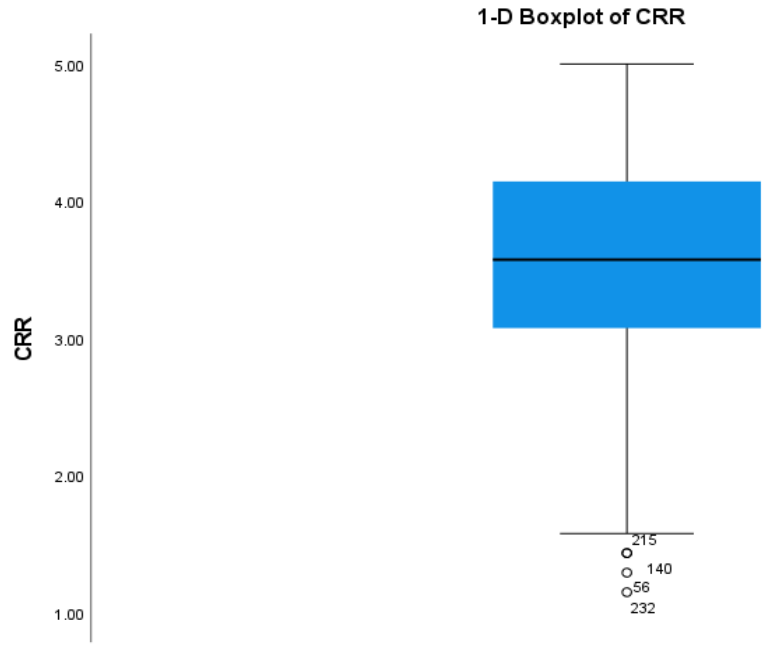
Thank you for your cooperation.

APPENDIX III: Box Plots Showing Outliers

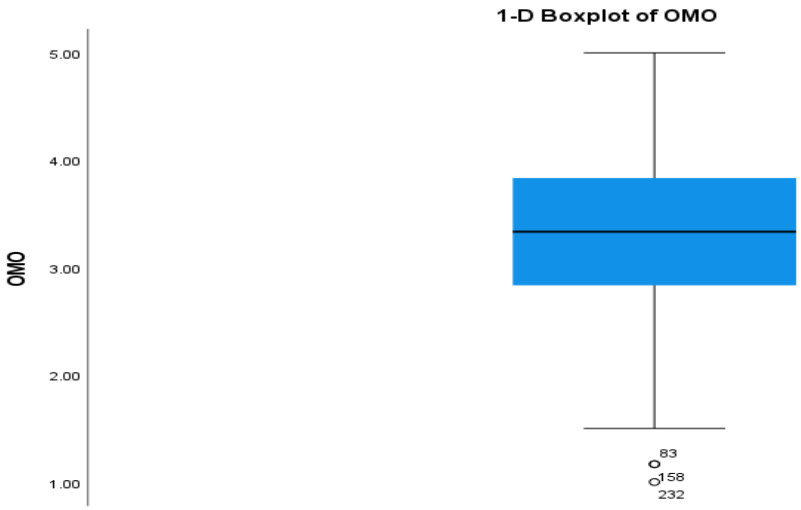
Interest Rate Cap



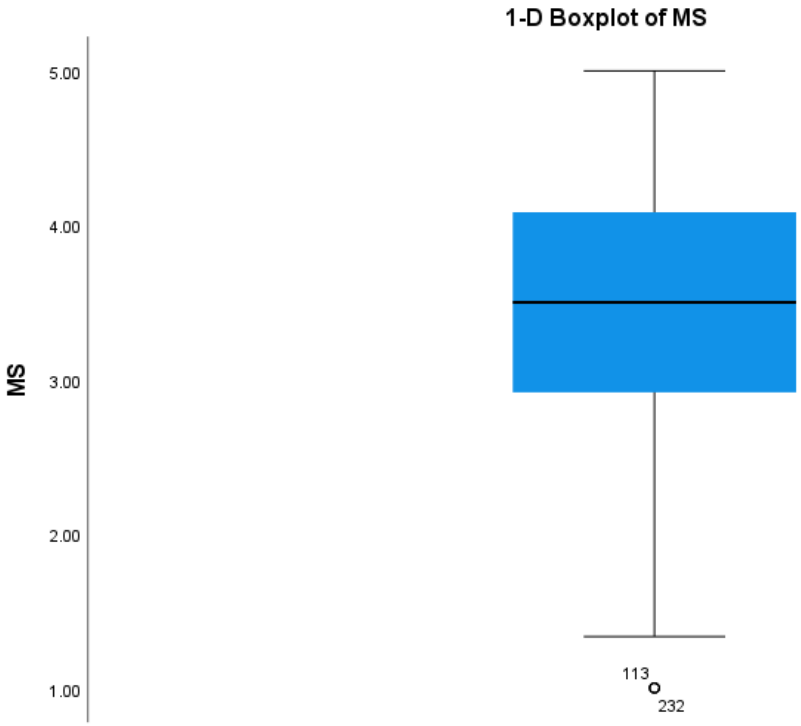
Cash Reserve Ratio



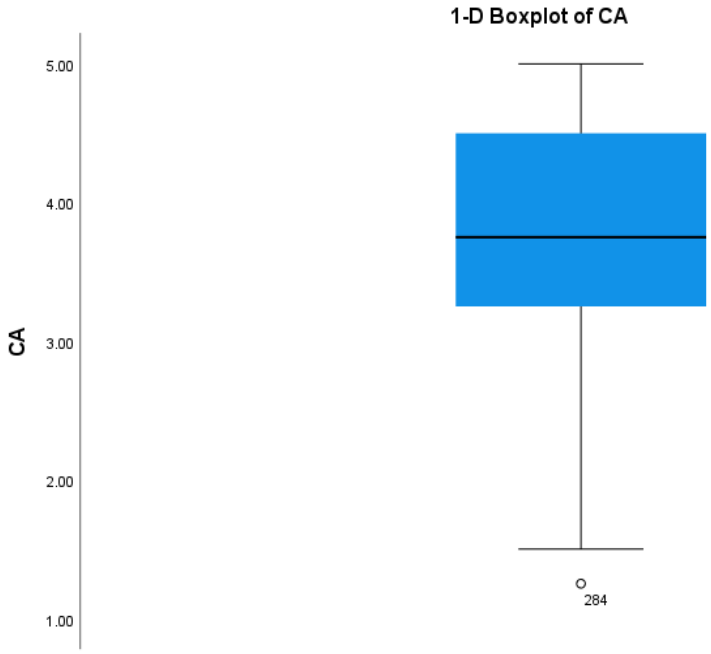
Open Market Operations



Moral Suasion



Access to Credit



APPENDIX IV: Ministry of Education Approval

REPUBLIC OF KENYA

MINISTRY OF EDUCATION
State Department of Early Learning & Basic Education

Telegrams:"schooling",Kisumu
Telephone: Kisumu 057 - 2024599
Email: countyeducation.kisumu@gmail.com

When replying please quote

COUNTY DIRECTOR OF EDUCATION
KISUMU COUNTY
PROVINCIAL HEADQUARTERS NYANZA
3RD FLOOR
P.O. BOX 575 – 40100
KISUMU

REF: CDE/KSM/GA/3/24 IV/80

3rd January, 2020

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION
MS. ROSALYNE OSIR– NACOSTI/P/19/3093

The above named is from Kisii University.

This is to certify that she has been granted authority to carry out research on ***"The role of financial innovations in the relationship between monetary interventions and access to credit among medium, small and micro enterprises in Kisumu County"*** for the period ending **18th December, 2020.**

Any assistance accorded to her to accomplish the assignment will be highly appreciated.

FOR: COUNTY DIRECTOR OF EDUCATION - KISUMU

JAIRUS L. AMUTALA
For: COUNTY DIRECTOR OF EDUCATION
KISUMU COUNTY

APPENDIX V: Nacosti Approval

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 198759

Date of Issue: 18/December/2019

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APPENDIX VI: Publication

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EFFECT OF MORAL SUASION ON ACCESS TO CREDIT AMONG MICRO, SMALL AND MEDIUM ENTERPRISES IN KISUMU COUNTY

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Abstract

Purpose: The purpose of this study was to investigate the effect of monetary interventions on access to credit by micro, small and medium enterprises in Kisumu County, Kenya. The specific objective was to assess the effect of moral suasion on access to credit by micro, small and medium enterprises in Kisumu County. The theory supporting this study was the monetarism theory by Milton Friedman of 1967. It states that when money supply expands, it lowers interest rates and when money supply decreases, it raises interest rates making loans more expensive and slowing down economic growth.

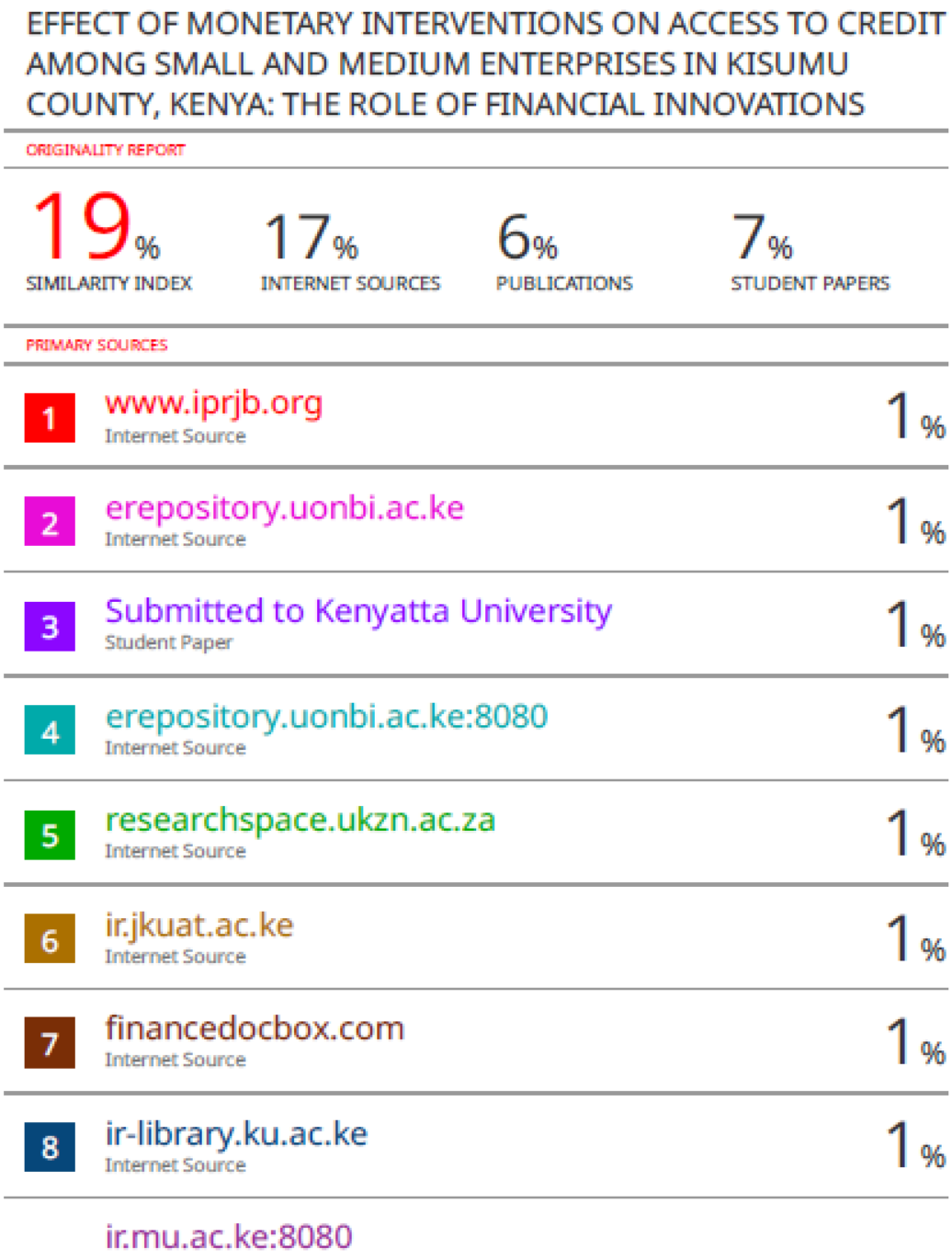
Methodology: The study adopted a descriptive research design. The target population was the 1,472 micro, small and medium enterprise groups registered at the department of Social Services in Kisumu County, Kenya. A confidence level of 95% was adopted to obtain a representative sample based on the formula by Yamane Taro. A closed ended questionnaire was administered to a stratified sample of 420 finance managers of the micro, small and medium enterprises. A Cronbach's alpha of 0.801 confirmed the reliability of the instrument while its validity was assessed by expert opinion of finance professionals. Data diagnostic tests and descriptive analysis provided a basis for the inferential analysis, based on correlation and regression analysis. Results showed that moral suasion has a statistically significant effect on access to credit by micro, small and medium enterprises.

Findings: The findings provide empirical evidence that moral suasion is significant for interventions targeting access to credit by MSMEs.

Unique contribution to Theory, Practice and Policy: This study contributes to the practice of MSMEs because it recommends that access to credit by MSMEs depends on the direct effects of moral suasion. This sector should therefore take advantage of the interventions available to them through moral suasion. The study contributes to policy by recommending that policy-makers ought to employ sector specific interventions through moral suasion by setting aside funds for this sector to be managed by the financial institutions. They could also provide credit guarantees to the MSME sector to cushion the banks from non-performing loans. Contribution to theory

Keywords: *Moral Suasion, Access to Credit, Micro, Small and Medium Enterprises, Entrepreneur*

APPENDIX VI: Plagiarism Report



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