BANK FINANCIAL INNOVATIONS ON LENDING TO SMALL AND MEDIUM ENTERPRISES BY SELECTED COMMERCIAL BANKS IN KENYA

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A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILMENT OF REQUIREMENT OF THE AWARD OF DEGREE IN MASTERS OF BUSINESS ADMINISTRATION (FINANCE OPTION) OF KENYATTA UNIVERSITY

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DECEMBER, 2021

DECLARATION

Declaration by candidate:

This research project is my original work and has not been presented for a degree in any other University

…… ……

Signature Date

Denise Wandia Julius

D53/CTY/PT/38907/2016

Declaration by supervisor:

I confirm that the work in this research project was done by the candidate under my supervision

……. ……

Signature Date

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DEDICATION

I dedicated this research project to my family and friends. A special feeling of gratitude to my parents Mr. and Mrs. Julius Njiru Njagi for their love and encouragement. They remained committed towards giving us quality education.

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I thank You Almighty God for giving me the strength, knowledge, ability and opportunity to write this research project. I thank You for Your blessings throughout my academic journey.

I extend my gratitude to Dr. Eddie Simiyu. You supervised my work and I truly appreciate your invaluable support and inspiration throughout the entire project writing period. Your professional guidance, ensured I did not deviate from the core of my study. I also appreciate Kenyatta University for the enabling learning environment. KU is my university of choice.

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OPERATIONAL DEFINITION OF TERMS

Financial Innovations	Novel financial instruments and or the development of present ones to enable an organization to differentiate itself from rivals while improving its competitive position.
Product Innovations	Products innovation is the creation of new products that enable a firm to differentiate itself from rivals and at the same time improve its competitive position
Process Innovations	Process innovation refers to new ways of production that allow provision of new or existing products
Channel innovations	These are means that expand the reach of financial services beyond the traditional bank branch.
Institutional Innovations	These entails establishment of novel institutions structures in the organization where production process is to be carried out.
Relationship Lending	It is a credit mechanism where a bank acquires soft information about a customer as a result of extensive interactions hence gain from use of such information to Screen applicant's overtime.
Bank regulation	Constitute government controls whose objective is to make commercial banks operate transparently with their clients
SME	Small firms are those that employ 11 to 49 people and whose yearly sales does not exceed Kenya shillings 5

	million. Medium enterprises employ between 50 and 99 people.
Bank Financial Innovations	The creation of new or improved financial instruments that are unique to the banking sector and which enable a commercial bank to differentiate itself from rivals and at the same time improve its competitive position

LIST OF ABBREVIATIONS

ACH	Automated Clearing House
CBK	Central Bank of Kenya
KBA	Kenya Bankers Association
RTGS	Real Time Gross Settlement
SME	Small and Medium Enterprises
VIF	Variance Inflation Factor
ACH	Automated Clearing House

ABSTRACT

This study explored the effect of bank financial innovations on lending to small and medium enterprises (SMEs) by selected commercial banks in Kenya. Commercial banks in Kenya continued to deploy huge investments towards financial innovations and therefore this study sought to examine the presence of a significant relation linking financial innovations and lending to SME. Independent variables for the study included product innovations (business savings account and business loan account), Process innovations (Real time gross settlement and Automated clearing house), Channel innovations (Mobile banking and Agency banking), Institutional innovations (SME only branches/departments and extended banking hours,).Lending to small and medium enterprises by selected commercial banks in Kenya was the general objective for the study while specific objectives included, examination of the effect of product innovation, process innovation, channel innovation and institutional innovation by commercial banks in Kenya on lending to SMEs. Theoretical review included Schumpeter theory of innovation, financial intermediation theory, Credit rationing theory, Diffusion of innovations theory and Constraints induced financial innovation theory. Empirical literature review was gathered from previous studies conducted by other researchers regarding financial innovations. The study methodology adopted a descriptive research design. The population was commercial banks in Kenya that had their head office within Nairobi Central Business. Descriptive statistics and inferential statistics were analyzed with the help of SPSS version 21. Five year data beginning year 2015-2019 that related to 33 commercial banks was analyzed. Ethical considerations were upheld by providing research approval letters from NACOSTI and Kenyatta University as an assurance to respondents that the research was meant only for academic purpose. The data that was analyzed established that all the bank financial innovations adopted by the commercial banks in the study (Product p -value =0.032, Process p-value= 0.0035, Channel p- value= 0.0000, Institutional p- value= 0.0452) had significant effect on lending to SMEs since they reached P VALUE less than the 0.05 significance level. The Pearson correlation coefficient for Product innovation =0.593, Process innovation = 0.559, Channel innovation =0.548 and institutional innovation= 0.558 showed a moderate positive liner relationship between all the bank financial innovations and lending to small and medium enterprises by the selected commercial banks in Kenya. The study concluded that product, process, channel and institutional innovation were significant in explaining lending to small and medium enterprises by studied commercial banks. In addition, regulatory framework had a mediating impact on the relationship linking financial innovation and lending to SME's.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Lending directed to the private sector by commercial banks is on a decline after implementation of interest rate capping law in Kenya. Starting August 2016, financing rates for commercial banks were allowed up to an upper limit of 4 percent above the CBK base rate. Lending to SME's has been severely affected by the interest rate capping law because banks have resulted to risk profiling causing SME's loan applications to be classified under the riskiest category and thereby crowding them out. As stated by KAM (2018), Small and Medium Enterprises lending growth rate fell from a high of 25 percent by half of 2014 to a low of 1.2 percent by mid-2017, that being the lowest growth in a span of 10 years. A study by Kenya Bankers Association found that personal savings comprised 62 percent as a source of capital for SME's compared to 28 percent borrowed from commercial banks (KAM, 2018).

Banks consider SME's applicants expensive and risky to serve because they do not possess the desired securities to back their loans. Their uptake for loans is also low. Banks are therefore unwilling to advance additional funds to them at the prevailing market rates (KAM, 2018).Competition from Microfinance institutions has further affected lending to SME's. In keeping with CBK (2018) report, net loan advances by MFIs grew from Ksh 27.476 billion in 2013 to 43.051 billion in 2017.According to KAM (2018), vision 2030 draws attention to the significance of SMEs in furtherance of industrial transformation in an economy. SMEs are acknowledged for their place in employment creation which leads to

reduction in poverty. Additionally, SMEs, provide competition and therefore encourage innovation which leads to provision of better goods and services. The CBK National Economic Survey report of 2017posits that SMEs constitute 98 percent of businesses in Kenya. Further the SMEs provide 30 percent of annual employment opportunities in the Kenya economy. The report also indicated that SME businesses contributed to about 3 percent of the GDP.

Regulation and competition have caused commercial banks to pursue financial innovation to counter resulting negative impact on profitability. According to Ndwiga and Mania (2018), financial innovations have created new opportunities for commercial banks and increased new financial sector players fostering a unique competitive position which can lead to superior performance. According to Allan and Gale (1994) as cited in Achieng, Kagira and Nasieku (2015), the benefits of financial innovation to commercial banks include avoiding regulations and optimizing taxes, reducing transaction costs, reducing informational asymmetry in SME lending, increasing risk sharing opportunities and making financial intermediation more efficient and cheaper for clients

1.1.1 Banking Innovation

Aysel (2017), puts forward three categories into which financial innovations can be defined. Product innovations is defined as the creation of new products to meet clients' needs, process innovations as entailing the creation of novel processes that permit provision of new and or improvement of present products. In the third category, institutional innovations are perceived as constituting the establishment of new organization structures within the organization where production process is to be carried out. Lotto (2018), defines financial

innovations as the formation of creative financial instruments and or the improvement of present ones so as to enable a firm to differentiate itself from rivals and at the same time improve its competitive position. The study defines financial innovations in terms of product innovations (Credit card, unsecured loans and business club), process innovations as (mobile banking, RTGS, internet banking), institutional innovations as (Insurance services, credit rating bureaus, Islamic banking) Ngumi (2013) describes financial innovations as the application of improved solutions that meet changing needs fulfilled through more effective products, processes or novel ideas generated by the society. The study defined financial innovations as including m-banking, e-banking, automated banking outlets (ATMs), debit & credit cards, and e1ectronic funds transfer and point of sale terminals (POS).Brian (2018), defines products innovation as the creation of new products that enable a firm to differentiate itself from rivals and at the same time improve its competitive position. Financial products were defined in terms of Automated clearing house, and agency banking. Tahir (2018) interprets process innovation as different manner of running enterprises and applying information technology which includes use of the ATM‘s mobile and online banking. Dzombo (2017) defines channels innovations as a means that expands the reach of financial services beyond the traditional bank branch. Channels are used for distribution of banking products. Channel innovations are defined in terms of agency banking and e-banking.

1.1.2 Lending to SME’s

A key pointer of efficiency in SME finance concerns the role of 1ending technologies and the way banks deal with information opacity that characterizes most SME’s (Berg, 2015).Choice of lending technology adopted by a bank includes one of the ways in which a

bank solves the problem of opaqueness in SME lending. Banks may lend to SMEs based on hard information or soft information as employed in relationship lending technology. Hard information inc1udes of financia1 ratios ca1culated from certified audited financia1 statement and data assembled by credit bureaus.

Relationship lending is a credit mechanism where a bank acquires soft information about a customer as a result of extensive interactions hence gaining advantage from use of such information to screen applicant's overtime (Loumitioi, 2013). Attributes of soft information include difficultly to completely summarize in a numeric score, and knowledge of its context and environment will also be required to enhance its understanding (Liberti, 2018).Banks are viewed as information processors. Commercial banks obtain client information in various ways including diverse interactions with the clients. Such multiple interaction could be during provision of loans or when the customer is making deposits or obtained indirectly when a bank interacts with the community members such as suppliers. Information gathered in this manner is referred to as soft information. With this soft information resource, banks have an upper hand in extracting the excess that comes with their ability to reuse borrower specified information in screening. Soft information is utilized by relationship lenders to deal with opacity problems. (Kiama, 2012).Qualitative information captures personal character, management capabilities, social character cultural factors, environmental factors business and marketing conditions (Baskara, 2017). Character and conditions therefore are given more weight in relationship lending especially with respect to SME's who are opaque. Character is a biased by lending firm about the person seeking the funds. Management perform such evaluations to ascertain the integrity of the funds seeker evaluation of the personality of the borrower about management of the

borrowing firm. The assessment is performed to check the integrity and trustworthy of the borrower. Condition analyses reasons for the loan and the prevailing industrial, economic and environmental conditions. The aim is to group borrowers according to their susceptibility to adverse effects. (Peprah, 2017)

According to Banerjee (2016), duration of relationship between a bank and a firm is a proxy measure of amount of information about the borrower that is accumulated by the bank. The longer the relationship the greater the ability of the lender to accumulate information capital about the borrower. Relationship lending may be measured by proximity of personal relationship, intensity of meetings and communications, length as a customer, intensity of credit application, ownership of bank products, distance between bank and home, between business location and bank (Baskara, 2017)

1.1.3 Commercial Banks in Kenya

In Kenya, commercia1 banks are regulated by the Centra1 Bank of Kenya as provided for in the Banking ACT cap 488 (Siran, 2017).As stated in Shikumo (2015), borrowing from commercial banks is the commonly adopted manner of sourcing for funds by SMEs in Kenya. Lending to SME's by commercial banks in Kenya is largely influenced by individual bank definition for SME. Berg (2015) established that a key challenge in the analysis of SME finance is that of defining of who is considered a small and medium enterprise .The definition which differs widely across banks , for example according to FSD (2016) , Gulf African Bank defines SME's as those enterprises generating sales of between Ksh 3 million to Ksh 250 million and a loan size above 45 million per year while Eco Bank defines SME's as corporate and non-incorporated businesses with only a local presence and a credit turnover of between twenty thousand US dollars and five million US dollars per annum

(FSD, 2016). A unified definition of small enterprises by GoK, is firms are small when they employ 11 and 49 employees and generate a turnover not exceeding Ksh 5 mi11ion. Medium enterprises employ 50-99 people (KNBS, 2016)

1.2 Problem Statement

According to World Bank Kenya Economic update report for April 2018, non-public sector financing growth declined form a high of about 25 percent by middle of 2014 to a low of 2 percent in February 2018. Cytonn (2019) posits that credit growth to SME's showed a persistent downward trend that was indicated at a high of 21 percent in October 2015 falling to 5.4 percent in October 2016 and to 2 percent in June 2017.The problem was not unique to Kenya. According to Michael (2016) in the US markets SME loans had gone down by15 percent in commercial banks since the financial crisis of year 2008. Furthermore, SME loans represented barely 20 percent of business loan balances in 2015 showing a persistent downward trend from 34 percent in 1995. In a study of the European markets specifically Australia and Croatia, 5 percent of SME loan applications were rejected, 11 percent of firms whose loan applications were successful received less than they applied for and 1 percent declined the loan offer because they found the cost unacceptable (ADBI, 2018).In South Africa Mazanai and Fatoki (2012) as cited in Coetzee (2017) expounds that even if commercial bank loans appear as though they are the likely preferred financing option SMEs, only about a third of loan application are approved. The Central Bank of Kenya Bank Supervision Annual Report 2017posits that innovative financial products and use of multiple delivery channels such as e- banking and m-banking continue to impact the financial sector. To remain relevant in the current space banks keep adding to new products, expand existing ones and introduce new de1ivery channe1s. This is so as to enhance access

to SME clientele (CBK, 2017). Product innovations by commercial banks in Kenya for example include Stanbic bank Kenya specialized SME loan product called the SME trader loan which aims at addressing SME working capital needs. Institutional innovations would be represented by Commercial Bank of Africa SME branch at Kirinyaga road in Nairobi Central Business District which serves SMEs dealing in motor vehicle and machinery spare parts. From previous studies on banking innovations effect on financial performance, Ndwiga and Maina (2018), discussed financial innovations in terms of; product innovations (ATM, e-Wallet) and process innovations (mobile banking, agency banking and internet banking. Lotto (2018)), discussed financial innovations in terms of product innovations (Credit card, unsecured loans and business club), process innovations as (mobile banking, RTGS, internet banking), institutional innovations as (Insurance services, credit rating bureaus, Islamic banking), Tahir (2018), discussed financial innovations in terms of process innovation (ATMs, mobile banking, online banking) ,and institutional innovation (internet only banking, and specialist credit card firms), Masila (2018), explained financial innovations as mobile banking, internet banking, agency banking, ATMs. Kiplagat (2017), studied financial innovations as automated tel1er machines, credit cards, m ~banking, internet banking, funds transfer and debit cards. According Awinja (2015), financial innovations are e-banking, m-banking ATM banking, branch networking, and agency banking.

None of these studies focused on financial innovations in terms of product innovations (business savings account and business loan account), process innovation (RTGS and ACH), channels innovations (mobile banking and agency banking) and institutional innovations

(SME only branches and extended banking hours). Further these studies did not discuss bank regulation as a moderating variable

1.3 Objectives

The general objective was effect of bank financial innovations on lending to small and medium enterprises by selected commercia1 banks in Kenya.

Specific objectives:

1. To evaluate the effect of product innovation by commercia1 banks on lending to SMEs
2. To establish the effect of process innovation by commercial banks on lending to SMEs
3. To ascertain the effect of channel innovation by commercial banks on lending to SMEs
4. To verify the effect of institutions innovations by commercial banks on lending to SMEs
5. To explore the moderating effect of the regulatory framework on the relation linking financial innovation and lending to SMEs

1.4 Hypothesis

The hypothesis that directed the investigation were

HX_1: Product innovation by commercial banks has no effect on lending to SMEs

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HX_2: Process innovation by commercial banks has no effect on lending to SMEs

HX_3: Channel innovation by commercial banks has no effect on lending to SMEs

HX_4: Institutional innovation by commercial banks has no effect on lending to SMEs

HX_5: Regulatory framework has no moderating effect on the relation linking financial innovations and lending to SMEs.

1.5 Significance of the Study

This study assists policy formulation by CBK in the area of risk mitigation by providing information on bank financial innovations. The study has practical implications to SME's who become aware of bank financial innovations, their importance when adopted in business, and the emerging risks that they may pose to their businesses. This study also expands the academic sphere on the existing knowledge of bank financial innovations. The study of bank financial innovations in commercial banks is part of a wider area of the study of financial innovations where there exists complex inter-relationship. To researchers the study of bank financial innovation has many dimensions form which it can be analyzed and therefore an interesting area of research.

1.6 Scope of the Study

The study was limited to commercial banks in Kenya and which had their head office in Nairobi CBD. Thirty-three commercial banks were analyzed. Three units of observation were considered from each bank, namely, head of credit SME banking, head of product innovations and head of channel innovations. The total units of analysis therefore comprised ninety-nine respondents. The study used commercial bank data for previous years beginning the year 2015-2019.

1.7 Limitations Delimitations

The investigation collated primary data using questionnaires. Limitation of questionnaires which included confidence in responding was addressed by assuring respondents that data was strictly meant for academic research purpose. The researcher provided a research permit from NACOSTI and authority to document for conducting research from Kenyatta University. Commercial banks do not define small and medium enterprises in the same way,

since this depends on the operational criteria and business strategy used by each bank. Some banks define SMEs in terms of turnover, while others base their definition on the amount of credit involved(Perez, 2013).The researcher used the information from the commercial banks website to determine those commercial bank that lend to SMEs.

1.8 Organization of the Study

Chapter one included a background to the research study, an analysis of the independent variables which were bank financial innovations, an analysis of the institution studied which was the commercial banks and the analysis of the dependent variable which was lending to SMEs. Existing gap in knowledge was addressed in the problem statement, the research objectives described what the study expected to achieve, the hypothesis section indicated the predictive statements about the study based on the chosen population, and the scope of the study defined what the study was going to cover. Also covered in chapter one were limitations and delimitations of the study and the study organization. Chapter two presented an introduction to literature review. A discussion of the literature review in terms of theoretical literature, empirical literature and research gaps was presented. A conceptual framework for the re1ationship between the independent and dependent variables was also shown. Research methodology in chapter three explained the research design the empirical model, the study population, the sampling method, data collection instruments, data collection procedure, va1idity tests, reliability tests, data analysis, and the ethical consideration. Chapter four presented the collected data, showed how data was analyzed as well as the interpretation and analysis. Chapter five detailed the conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Literature review presented an overview of literature that supported the study. A theoretical review was presented followed by an empirical review that detailed previous studies that had been conducted. Research gaps identified were summarized and the frame of reference that showed the link connecting the predictor variable to the response variable was included.

2.2 Theoretical Review

Theoretical literature review is an examination of various theories relating to the study as advanced by different scholars. Theoretical review provided the researcher with a broad view of the research topic and was helpful in identifying research gaps.

2.2.1 Schumpeter's Theory of Innovation

Schumpeter (l928), posits supernormal profits which arise when businesses adopt innovations (for example when businesses produce new products, open new markets) do not last because other entrepreneurs are attracted to the supernormal margins and begin to imitate the innovations. In line with Schumpeter, for an economy in equilibrium and a firm innovates using borrowed funds from the bank, there will be a tendency by the firm to pay higher for inputs because of increased liquidity. This cause prices to go up. When other business begin to imitate using credit form the banks, the process s further expands, but this happens only up to a defined level so that even with increased output margins decline. This is because with no further innovation and firms continuing to repay borrowed funds, a

contraction in money supply arises causing prices to fall. This theory differentiates entrepreneurs from bankers. Entrepreneurs present innovations which form a state for profitable creative enterprises while bankers provide finance for the construction of the new ventures. Authors that have reviewed Schumpeter (1934) theory include Korir (2014), Mugane (2015), Ongwen (2015), and Ngumi (2013). This theory supports the independent variables; product, process, channel and institutional innovations

2.2.2 Financial intermediation Theory

Diamond (1984) Explains why financial intermediaries exist, the reason being the presence of market imperfections which prevent savers and investors from interacting in an optimal way. Informational asymmetries between savers and investors being cited as the key cause for market imperfections. According to Diamond, banks resolve the imperfection when they take the role of delegated monitors on behalf of savers and investors. Banks execute this role because of the information advantage they have that relates to both the investors and savers. Banks therefore are justified in charging a transaction cost for the service. This theory supports lending to SME's by commercial banks by justifying the higher transactional costs and higher interest on loans charged to this segment of bank customers. Authors who have reviewed this theory include Boyd and Prescott (1986), Williamson (1987), and (Muchiri, 2017)

2.2.3 Credit Rationing Theory

Forwarded by Joseph Stiglitz and Andrew Weiss (1981). The theory attempts to explain a situation of excess demand equilibria in credit market. It is generally expected that should demand exceed supply, prices will rise causing a decrease in demand until the point where

demand equal supply. Therefore, when the price mechanism is correctly functioning credit rationing should not exist.

This theory shows borrowers who are denied loans while willing to pay higher rates than the than the market interest rate. It was observed that increasing interest rates could increase the riskiness of a bank loan portfolio and hence decrease bank profit. Information asymmetry where banks are faced with borrowers who they do not have adequate information about. Banks will therefore apply a screening criterion such as interest rate charged on a loan. Risky borrowers will tend to accept higher interest rates because their projects have a lower success rate and therefore more likely to default. Borrowers who deem their projects less risky will be Unwilling to pay more for a loan. This therefore leads to situation of excess demand equilibria in credit market. The theory has been reviewed by Bruce Greenwald in adverse selection in the labour market (1979). This theory supports the dependent variable by explaining the view adopted by commercial banks when lending to the SME segment

2.2.4 Diffusion of Innovation Theory

Rogers (2003) posits that diffusion of innovation is the manner in which change spreads over time in a socia1 system. Innovations are said to spread when they are adopted by people. But the pace of adoption is not simultaneous across the population. Rogers (2003) underscores the importance of understanding the characteristics of a population before launching an innovation so as to determine the strategies to use in order to appeal to different adopter populations. Five categories of adopters in the economy identified include innovators who are earliest to try the innovation even without much information being provided about the innovation, early adopter's include opinion leaders who upon gathering information about the innovation are go ahead to adopt , the early majority wait to hear

success stories for them to be convinced to adopt an innovation, the late majority are skeptical and wait for the early majority to try the innovation first, laggards are the conservatives who are most difficult to adopt innovations. The theory has been reviewed by Brian (2017), Ngumi (2013), and Arthur (2018) in financia1 innovation on financia1 performance of commercial banks. The theory supports the independent variables: product, process, channel and institutional innovation

2.2.5 Constraint Induced Financial Innovation Theory

Si1ber (1983) posits that the profit maximizing objective of commercial banks is the prime reason for financial innovation. In the pursuit for profit maximization, financial institutions especially banks face restrictions and limitations, some external in the form of policy and others internal in the form of organizational management and leadership style. In keeping with Silber (1983), the constraints on one hand guarantee the stability of management but on the other hand reduce the efficiency of a financial institution. Financial institutions therefore strive towards casting them off.

This theory supports the independent variable, financial innovations by commercial banks by arguing that the motive for the expenditure by commercial banks towards financial innovation is so as to enable them realize their goal of profit maximization. The theory has been reviewed by Haret and Simuyu (2017).

2.3 Empirical Literature

Empirical literatures examine actual studies that present statistical associations between variables for a study conducted by earlier researchers.

2.3.1 Product Innovations and Lending to SMEs

In a study conducted in Lebanon on bank product innovation on profitabi1ity and return on assets of commercia1 banks Sujud and Hashem (2017) observed variables inc1uding cards (debit, credit) Auto teller machine, POSs, EFTs mobile and e-banking. Descriptive survey research design and judgmental sampling was adopted. A sample of 200 staff from the banks was used in the study. The study found that bank innovations affect profitability and return on assets positively. Muiruri (2012), in a study of product alterations on earnings report for commercial banks in Kenya, credit cards, mobile, agency and e-banking, were studied. Descriptive research was applied, the population was 44 commercial banks and a sample size of 16 banks chosen basing on ownership of the banks: 3 non- locally owned banks7 banks incorporated in Kenya, 3 banks owned by non - Kenyans but locally incorporated, 3 locally owned with government control. The period covered was 5 years from 2008-2012. Data was co11ected using questionnaires. The product innovations positively impacted on banks performance and were highly used by the banks studied

2.3.2 Process Innovations and Lending to SMEs

Muchiri (2017) studied process innovations in terms of ATM banking, e-banking, and ACH. The researcher applied cross sectiona1 survey. The popu1ation was 43 commercial banks and a sample of 39 commercial banks chosen. Questionnaires collected data and analysis of data completed through SPSS. The study found a positive contribution of process innovations on financial performance of commercial banks. Ziporah (2014) studied process innovations in terms of ATM banking, e- banking, and m- banking. Applied in study: descriptive research, popu1ation of 43 commercia1 banks, and secondary data from

published annual financial reports. Data analysis was through SPSS version 18.0. The study found that online banking had no significant impact on process innovation

2.3.3 Channel Innovations and Lending to SMEs.

Ndwiga and Maina (2018) studied effect of financial innovation as an a1ternative channel of delivery for financial performance of commercia1 banks. This was a Kenya study. Innovations studied included m-banking, agency banking and e--banking. Cross sectiona1 survey design was app1ied. The population investigated was commercia1 banks in Kenya. Qualtrics survey software was used to administer online questionnaires and secondary data was obta1ned from annua1 reports. The study found that channel innovations and financial performance have a significant positive relationship.

Gichungu and Oloko (2015) probed the impact of agency web and m-banking on the income statement for commercial banks in Kenya. A popu1ation of was 43 commercia1 banks used. Secondary data comprised annually published reports for the time period 2009-2013. The time span from 2009-2013 was selected because of major technological innovations that were implemented by the banks during this time period. Multiple regression, along with the Pearson Corre1ation Coefficient were applied in analyzing data. Findings indicated a significant relationship between channel innovation and financial performance of commercial banks.

2.3.4 Institutional Innovations and Lending to SMEs

Lotto (2018) Studied financial innovations in terms of institutional innovations (Insurance services, credit rating bureaus, Islamic banking). The population for the study was 15 MFI in Tanzania. The whole population was used for the study. The study collated data using

questionnaire and face to face interview. The findings reached showed institutional alterations have a remarkable positive effect on earnings report for MFIs in Tanzania. Tahir (2018), while researching institutional innovation, discount broking firms, internet banking, and specialist credit card firms were studied. Population studied was commercial banks in Pakistan. The study comprised twenty-three commercial banks. Secondary data for years 2007 -2016.The study found that the variable had no significant impact on financial performance.

2.3.5 Financial Innovation and Regulatory Framework

Baicu (2011), studied the impact of financia1 innovation on banking regu1ation, following the global financial crisis of 2008. The study concluded that regulatory framework is responsible for rating the safety of innovations, limiting access to the innovations by investors and providing warning about their risks. According to the study regulatory framework keeps a balance between innovation and progress on one hand and safety and stability on the other hand. Therefore, financial innovation will be seen to vary according to the existing regulatory framework

2.3.6 Financial Innovations and Lending to SMEs

In Irungu (2014), cheque truncation, RTGS, credit reference bureaus, credit derivatives and ATMs were the desired independent variables to study the impact of financial alterations uncertainty management of commercial banks. Descriptive research was applied and a population of 43 banks chosen, the period studied was 2003 -2013.Secondary data was used. The investigation established that financial innovations positively impacted management of credit risk. While studying effect of financia1 innovations on risk management in carried out

in Kenya targeting commercial banks Waweru (2012) found that current accounts ,sav1ngs accounts, cred1t reference bureaus and automated trading system at the securities exchange had a positive corre1ation with the overaI1 risk management framework for commercial banks.

2.4 Summary of Research Gaps

Summary of research gaps showed unexplored areas by previous researchers identified during empirical literature review.

Tab1e 2.1: Summary of Research Gap

Year Researcher	Variables used	Methodology	Key Findings	Research gaps
2018 Maina and Ndwiga	Product (ATM &e-wallet) Process innovations (mobile, agency and internet banking)	Cross-sectional research design -Online questionnaires Population: 11, listed commercial banks -census sample -Secondary data	Financial innovation and financial performance is correlated with process innovation being significant	-Study focused only on listed commercial banks in Kenya
2018 S H Tahir 2018	-ATM -Internet -POS -Mobile Banking	-Descriptive research design -Population: Pakistan banks -Sample: Pakistan banks regulated by SBP -Secondary data- 2007- 2016	-Variables had no notable impact on activity ratios of money taking banks in Pakistan	-Pakistan study -channel innovations excluded -Period 2007- 2016
2018 Lotto	-Product innovations - Process innovations -institutional	-Population: 15 MFI banks -Tools; questionnaire and face to face	-Product, process and institutional innovations have a positive	-Study analyzed micro finance banks in Tanzania

	innovations	interviews -Census study	sway on financial performance of MFI banks in Tanzania	
2017 Dzombo	Channel innovations	-Exploratory study -Population 42 commercial banks -Sample 42(census) - primary and secondary data Analysis with SPSS	Found that when used as a multichannel strategy, agency and e-banking have a notable pessimistic effect on financial performance at 5 percent significance level	Study analyzed only Channel innovations
2017 Hiyam Sujud and Bauthenia Hashem	-mobile banking -Debit and credit cards -ATMs -Point of sale -Electronic funds transfer	-Descriptive Survey - Commercial banks in Lebanon -Judgmental sample -200 bank staff	Bank innovations affect positively the ROA and profitability of commercial banks in Lebanon	-Study was in Lebanon
2016 Ruth Sum	-Product Innovations -Process Innovation -Survive innovations	-Descriptive -Population: 11 Sacco's Sample -:77 staff -Primary data	Variable were statistically significant and should be considered in decision making	-Analyzed Sacco's
2016 Catherine Mugane	-Product Innovation -Service Innovation -Organizational Innovation	-Explanatory -- Research design -Population 43 commercial banks -Census sample -Primary data	There is a negative and significant R/ship between product innovation and Return on	-Focused on organizational innovations

			assets	
2014 Simiyu, Ndiang'ui, Ngugi	-M-Kesho -Eazzy 24/7 -Cash back -Agency banking -ATM	-Case research design -Population 1600 - Data: primary - Tool: Questionnaire and interview	There is a remarkable direct R/ship between customer needs and the need for financial innovation	-Study focused on one bank -Study did not distinguish between product, process, channel and institutional innovations
2014 C,A, Jegede	ATM	-Population 25 banks -census survey Data tools, questionnaires	ATMs as a financial innovation is important and needs to be channeled to promote banking sector growth	-Study focused on ATMs only
2013 Patrick Ngumi	-ATM -Debit cards -Credit Cards -POS terminal -Mobile Banking -Internet banking -Electronic funds transfer	-Descriptive Survey -Population 42 commercial banks	Bank Innovations have positive impact on earnings report for commercial banks in Kenya	-Period to December 2013

2.5 Conceptual Framework

Conceptual framework showed a diagrammatic representation of the anticipated relationship between the study variables.

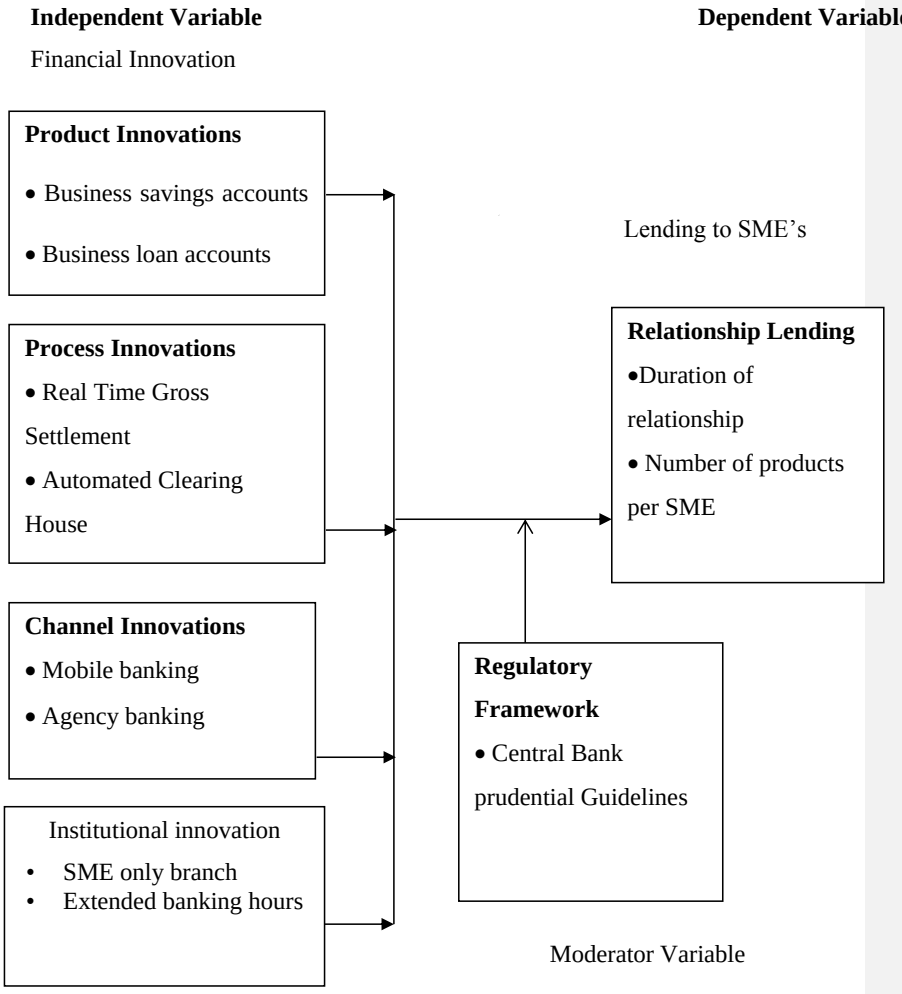

Figure 2.1: Conceptua1 Framework

Source (Researcher, 20l9)

Figure 2.1 showed the variables for the study. The independent variables product, process, channel and institutional innovations were changed to test their effect on the dependent variable. The dependent variable; lending to SMEs was being tested and measured.

CHAPTER THREE

RESEACH METHODOLOGY

3.1 Introduction

This chapter sets out the research methodology that was adopted to meet the objectives of the study. The section discusses the research design, the empirical model, the research population, method of sampling, data gathering instruments, and the procedures to be followed in data collection, va1idity of test, and reliability of test, data ana1ysis process and observance of ethical consideration by the researcher.

3.2 Research Design

Research design points to the manner followed by a researcher in putting together the all the parts of the study so as to demonstrate logic and to ensure that the research problem is fully addressed. Research designs types include descriptive, correlational, experimental, exploratory cross-sectional. The researcher used descriptive research design. Mugenda and Mugenda (2003), posits that a descriptive research designing provides an effective and meaningful manner to organize and summarize data.

3.3 Empirical Model

This study used multiple predictor variables therefore multiple regression analysis was the model applied in data analysis. In keeping with (Mugenda and Mugenda, 2003), the model is used to find out if a set of independent variables in aggregate predict a given dependent variable. The multivariate regression model was as follows:

Model 1: Direct relationship (Reduced model)

$Y= \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$

Model 2: Moderated Relationship /Interaction Effect

$Y= \alpha_0 + \beta_1 X_1.M + \beta_2 X_2.M + \beta_3 X_3.M + \beta_4 X_4.M + M\varepsilon$

Model 3: Full model

$Y= \alpha_0 + \beta_1 X + \beta_2 M + \beta_3 XM$

Where $X= (X_1, X_2, X_3, X_4)$

Where,

Y =Dependent variable; Lending to SMEs

α_0 =Constant term

$\beta_1 - \beta_4$= Regression coefficient

X_1= Independent variable that measures product innovation

X_2 = Independent variable that measures process innovation

X_3 =Independent variable that measures channel innovation

X_4 =Independent variable that measures institutional innovation

M= Moderator variable: Regulatory framework

ε = Error term

3.4 Operational Definition of Variables

Operational definition of terms defined the terms and measurement used during field work.

Table 3.1 Operational Definition of Variables

Type of the variable	Indicator of the Variable	Measurement of Variable	Measurement Scale
Dependent Transactional Lending	-Financial Statement Lending -Asset based lending	-Number of financial statement loans -Number of asset-based Loans	Likert scale I--V Likert scale I--V
Dependent Relationship Lending	-Duration of Relationship -Products per client	-Number of years client has been banked -Number of products used by the client	Likert scale I--V Likert scale I--V
Independent Product Innovation	Business savings Accounts	-Number of accounts -Number of transactions	Likert scale I--V Likert scale I--V
	Business Loans Accounts	-Number of loans -Size of loan	Likert scale I--V Likert scale I-V
Independent Process innovation	RTGS	-Number of transactions -Volume of transactions	Likert scale I--V Likert scale I--V
	ACH	-Number of processed Cheques -Number of loans	Likert scale I--V Likert scale I--V

		against un cleared Cheques	
Independent Channel Innovations	Mobile Banking	-Number of subscribers -Transaction volumes	Likert scale I--V Likert scale I--V
	Agency banking	-Transaction numbers -Transaction vo1umes	Likert scale I--V Likert scale I--V
Independent Institutional Innovations	SME only branches	-Percentage of relationship loans -Volume of loans	Likert scale I—V Likert scale I—V
	Extended banking Hours	-Percentage change in number of clients -Percentage change in number of loans	Likert scale I—V Likert scale I—V

3.5 Population

In line with Mugenda Mugenda (2003), a population includes specifically described persons, happenings and services that are being investigated. The study population was commercial banks in Kenya whose head office was within Nairobi Central Business and which extended lending to SMEs as per information in their website as at 30th September 2019. According to CBK bank supervision annual report 2017, 42 commercials banks operated in Kenya where two banks had been placed under receivership and one was

under statutory management. Nairobi CBD was chosen because of ease of accessibility, time available for the study and resources available to the researcher.

3.6 Sampling Technique

Sampling entails selecting a section of the population to participate in the study. Sample sizes in the range 10 percent -50 percent is allowed in descriptive research, (Mugenda, Mugenda, 2003). Thirty-three commercial banks constitute 78.6 percent of the population. In sampling, two commercial banks under receivership, one under statutory management, one that banks large family business, one that engages in private lending, two that bank corporates and three that bank individuals and corporates were excluded, leaving a sample containing 33 commercial banks that lend to SMEs. A census of the 33 commercial banks in the sample was adopted. Three units of observation were considered from each bank, namely, head of credit SME banking, head of product innovations and head of channel innovations. The total sample therefore comprised 99 respondents. The respondents were chosen because they were responsible for aggregating data and for decision making under their units. On this ground the researcher believed they were best suited to respond to the questionnaire.

3.7 Data Collection Instrument

Questionnaires were used to collect data. (Ngumi 2013) defined questionnaires as measuring tools that ask individua1s to answer statements. Questionnaire was appropriate for this study because it was flexible to the work demands of the respondents. It allowed the respondent to answer the questionnaire at a time which fits well within their work

schedule. Questionnaires also ensured standardization of questions asked to all respondents hence improving the consistency of data that was collected.

3.8 Data Collection Procedure

Drop and pick of questionnaires was used. Drop and pick method was chosen because it was less costly to the researcher since the head offices for the banks were located within the central business district which was conveniently accessible to the researcher. Documents to allow research were obtained from Kenyatta University and Nationa1 Commission for Science, Techno1ogy and Innovation (NACOST1).Respondents were requested to fill the questionnaire within a period of 5 days so as to facilitate timely analysis of data.

3.9 Validity Test

Va1idity test refers to the magnitude to which the research tools estimate what they are required to measure. Validity was measured using data from a pilot study. According to Ngumi (2013) a pilot test not less than five percent up to ten percent of the target sample should constitute the test. Five questionnaires were sent to the respondents for pilot purpose. According to Munjiru (2013) a pilot study aids in is refining the questionnaire. The researcher is also able to perform a prior estimation of the validity of data that was gathered. Face validity of the questionnaire was performed by ten experts (lecturers) to ensure consistency of questions.

3.10 Reliability Test

Reliability refers to the ability of research instruments to measure characteristics of interest over time or after repeat trials and provide consistent results. Cronbach alpha was

ca1culated to measure the reliability or internal consistency of elements in the researchers interview question form. Values for cronbach's alpha range from 0 to one. According to Munjiru (2013) Cronbach alpha value of above 0.7 was acceptable. The results of the pilot test are as depicted in Table 3.2. Findings indicated that all the variable had cronbach's alpha value of above 0.7 and therefore they were reliable.

Table 3.2: Reliability Test of Constructs

strategic management determinants	Cronbach's Alpha	Comments
Product innovation	.822	Accepted
Process innovation	.816	Accepted
Channel innovation	.786	Accepted
Institutions innovations	.788	Accepted
Regulatory framework	.742	Accepted
Lending to SME's	.791	Accepted

3.11 Data Analysis

Due to the extensive data that is ordinarily collected during research adopting a well ordered and logical analysis of the data will be of paramount importance (Munjiru, 2013). This study used descriptive statistics including mean, median and mode to present quantitative descriptions in a manageable form. Inferential statistics were applied to make inferences from the sample about the entire population in the study; The Pearson correlation coefficient was best used test the strength of the relationship between the independent and dependent variables. Multiple liner regression test determined the statistical significance of the independent variables (product, process, channel and institutional innovations) on the dependent variables (lending to SME's). Statistical software for Social Sciences (SPSS) aided in data analysis.

3.11.1 Diagnostic Test

Diagnostic examinations were performed to assess the model presumptions and explore whether there were findings with unacceptably huge effect on the investigation. Test included,

3.11.1.1 Linearity Test

It was expected that the relation linking the dependent variable and the independent variable would be linear and would portray a straight-line pattern once plotted on a graph of dependent against independent variable. Least squares regression analysis mapped the appropriate line of fit for the observed data. Least squares reduced the sum of squares of the vertical digressions from all points to the appropriate line fit.

3.11.1.2 Test for Multicollinearity

Multicollinearity is when two or more explanatory variables in the regression model influence one another. The consequence being difficulty in isolating individual effects of the dependent variables. Multicollinearity was incorporated to rule out presence high correlation among the independent variables. While interpreting the Variance inflation Factor (VIF), DeForest et al., (2018) maintained that a VIF that approaches 10 implied severe multicollinearity and a near-complete correlation between a variable and a linear combination of the other independent variables in the regression model.

3.11.1.3 Test for Heteroscedasticity

When the variance of the error term was not constant and when it appeared to be influenced by the values of Independent variable, heteroscedasticity needed to be ruled out. The problem could be due to measurement errors. Heteroscedasticity was treated by

weighted regression where a variable that changed with the variance of error term was identified and used to weight the values for the error term leading to reduction in the variance.

3.11.1.4 Test for Normality

The test for normality investigated whether the error term assumed a bell shape curve with an average of zero and a standard deviation equal to one. A normal curve was expected when a frequency polygon curve for error terms was plotted.

3.11.1.5 Anova Test

Anova test was applied to the random and samples taken from populations that were independent of each other. Therefore, randomizing samples selected ensured independence which was required for Anova application. Anova tests also satisfied the assumption of homogeneity and normality.

3.12 Ethical Consideration

In keeping with Mugenda Mugenda (2003), researchers are required to keep anonymous the identity of a respondent. A researcher should desist from referring to a respondent by name or revealing their cultural or ethnic background and must promise to protect the information given in confidence by the respondent. Any disclosure of such information must be preceded by consent form respondent. This study upheld confidentiality where respondent's information was used for academic purposes only. The researcher provided research approval letters from NACOSTI and Kenyatta University

CHAPTER FOUR

DATA ANALYSISPRESENTATION AND INTERPRETATION

4.1 Introduction

In chapter four the researcher gives an analysis of the data that was gathered. Further the researcher interprets this data to render it useful to the information users. The researcher then discusses the findings after which the fin findings are presented in the form of tables, graphs and charts where appropriate. The researcher ensured the presentation form used created the appropriate impression to the information users and also enhanced its understandability .Descriptive and inferential statistics were used in data analysis. Research objectives were central in guiding presentation results. Research questions guided the organization of the chapter. The researcher also captured the response rate from interviewees and the distribution of characteristics of the target audience.

4.2 Response Rate

This section gives results on the response rate. It is an illustration of how the researcher managed to collect data from the respondents who were sampled as a representative of the target population.

Table 4.1: Response Rate

Response Rate	Frequency	Percent
Returned	90	90.9
Unreturned	9	9.1
Total	99	100

Table 4.1 is the response rate table which shows the proportion of feedback attained by the researcher from the interviews in the study sample. This research attained a response rate of 90.1 percent. 9.1 percent included questionnaires which were not returned and those whose feedback was not applicable for the study. Mugenda Mugenda (2013) recommends a response ratio of 70 percent and more. Therefore response ratio achieved by this study was acceptable for the study to proceed.

4.3 Respondents' Demographic

4.3.1 Gender

The research explored the gender of the interviewees. The resu1ts are as shown in Figure 4.3.

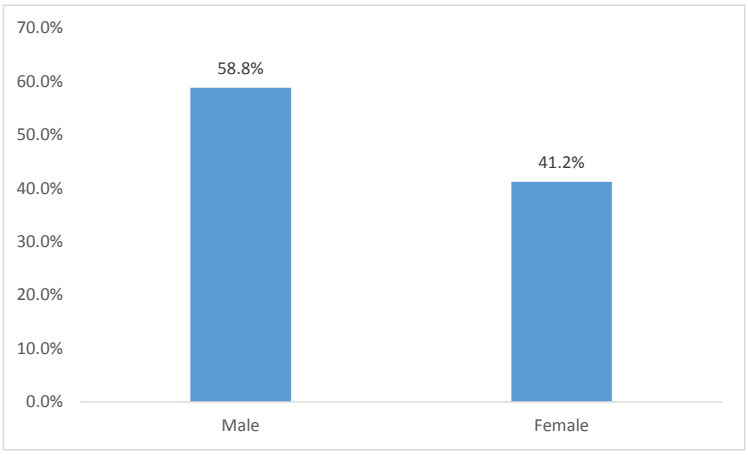

Figure 4.1: Gender

From the study findings, most (58.8 percent) of the respondent were ma1e, while 41.2 percent were fema1e.

4.3.2 Working Duration in the Bank

The investigation was carried to find out the duration respondents had been working for their respective banks. Results are shared in figure 4.2

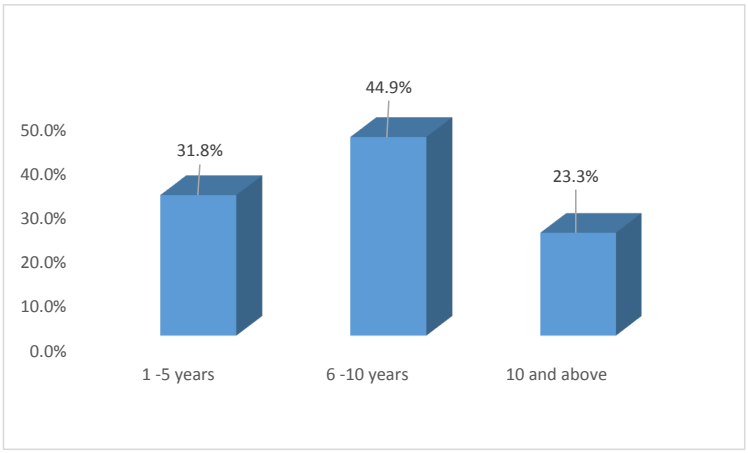

Figure 4.2: Working Duration in the Bank

From the study findings, most (44.9 percent) of the respondent have served in their particular bank for 6-10 years, 3I.8percent for l-5 years while 23.3percent for l0 years and above. This implies that majority of the respondents had an extensive working experience and hence higher chances of giving reliab1e data with regards to effect of bank financial innovations on 1ending to sma11 and medium enterprises by selected commercia1 banks in Kenya.

4.3.3 Department

Interviewees were asked to indicate the department that they head. Figure 4.3 tabulates findings from the research. Study results are given in Figure 4-3

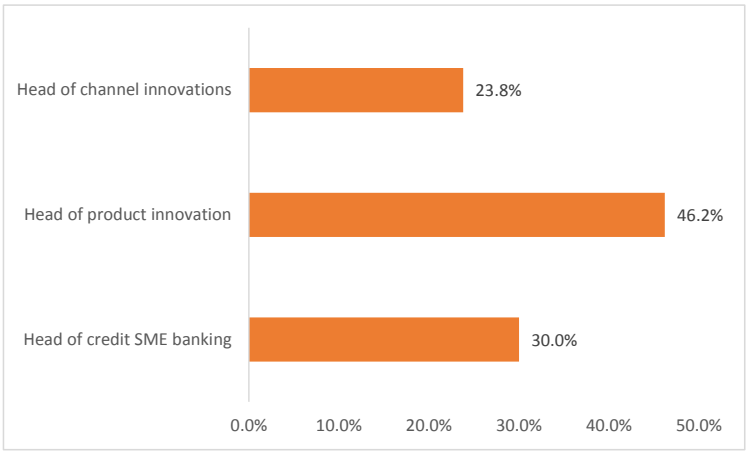

Figure 4.3: Departments

According to the study findings, majority of the respondents (46.2 percent) were head of product innovation, 30 percent were head of credit SME banking while 23.8 percent were head of channel innovations.

4.4 Financial Innovations

4.4.1 Common Financial Alterations adopted

Interviewees were asked to indicate the common financial innovation adopted by their banks. Figure 4.4 shows the findings of the study. Interviewees were asked to indicate the most common financial innovation adopted by their respective banks to be mobile banking. Findings for the study are given in Figure 4.4

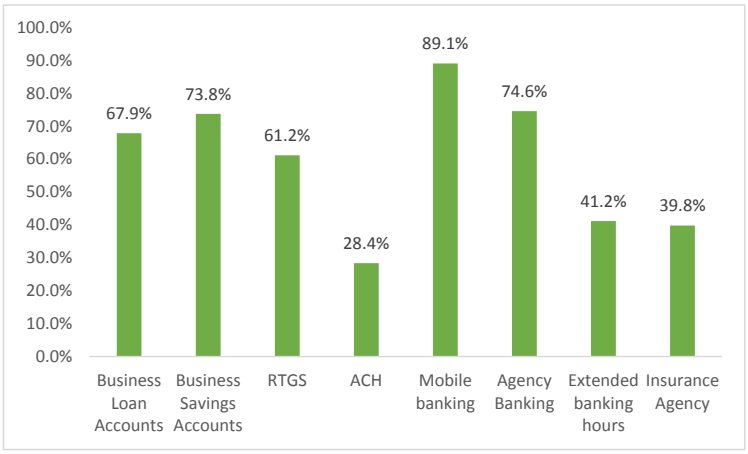

Figure 4.4: Common financial Innovations adopted

From the research findings most of the interviewees (89.1 percent) indicated the most common financial innovation adopted by their respective banks was mobile banking, 74.6 percent indicated agency banking, 73.8 percent indicated business savings account, 67.9 percent indicated business loan accounts, 61.2 percent indicated RTGS, 41.2 percent indicated extended banking hours 39.8 percent indicated insurance agency while 28.4% indicated ACH

4.4.2 Specific Financial Innovation Tailored for SMEs

Respondents were required to indicate if their banks have specific innovations tailored to SMEs. Figure 4.5 illustrates the findings of the study.

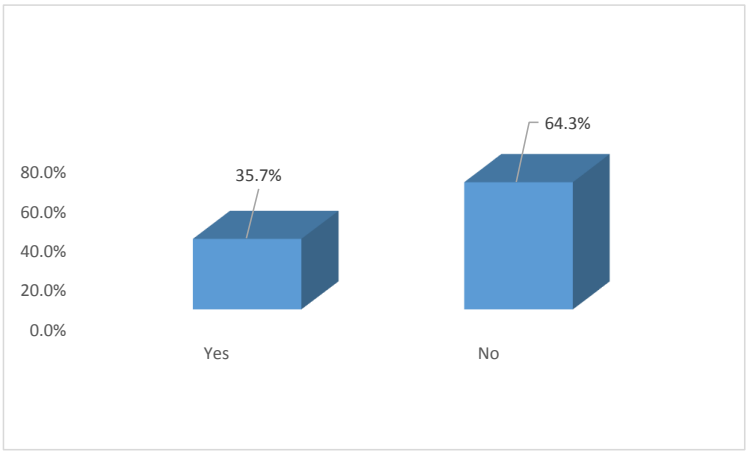

Figure 4.5: Specific Innovations Tailored to SMEs

From the resultsof the study, majority of the interviewees indicated that their bank do not have specific innovations tailored to SMEs while 35.7 percent indicated that their bank have specific innovations tailored to SMEs.

4.4.3 Product Innovations

The study aimed to prove the effect of product innovation by commercial banks on lending to SMEs. The responses were rated on a five place likert scale where 1 indicated Not at all, 2 denoted little, 3 denoted Neutral, 4 denoted Agree,5 denoted strongly agree. The outcome was as illustrated in Table 4.2.

Table 4.2: Product Innovations

	Mean	Std. Deviation
Tailoring loan accounts to specific needs of SMEs has increased number of accounts	4.032	0.613
Majority of SMEs have increased their deposits because of tailored business savings accounts	4.096	0.465
Uptake of innovative products by SMEs has reduced information opacity among SMEs	3.936	0.700
Introduction of innovative products has positively impacted on lending to SMEs	4.011	0.374
Most SMEs most SMEs can adequately service the loan amounts extended to them	4.064	0.504

From the study findings, majority of the interviewees strongly agree that most SMEs have been able to add to their deposits as a result of tailored business savings account (mean=4.096), most SMEs can sufficiently pay the loan facilities they provide them (mean=4.064), tailoring loan accounts to specific needs of SMEs has increased number of accounts (mean=4.032) and that introduction of innovative products has positively impacted on lending to SMEs (mean=4.011). In addition, respondents agreed that uptake of innovative products by SMEs has reduced information opacity among SMEs (mean=3.936). This implies that as a result of product innovation by commercial banks, most SMEs increased their deposits because of tailored business savings account, most SMEs can adequately service the loan amounts extended to them, tailoring loan accounts to specific needs of SMEs has increased number of accounts and that introduction of innovative products has positively impacted on lending to SMEs

4.4.4 Process Innovations

The study aimed to prove the effect of process innovation by commercial banks on lending to SMEs. The responses were rated on a five element 1ikert scale where 1=Not at

all 2=Little 3=Neutral 4=Agree 5=strongly agree. The results were as illustrated in Table 4.3.

Table 4.3: Process Innovations

	Mean	Std. Deviation
Clearing of Cheques within one day through ACH has enhanced SME transaction numbers	4.021	0.672
Real time settlements through use of RTGS has led to increased funds transfers by SMEs	4.106	0.310
Most SMEs have saved on time they spent doing banking as a result of process innovations	3.964	0.564
Process innovations avail timely funds for use in the business	4.117	0.701
Use of process innovations provides information that can be used for loan appraisal	3.785	0.189

From the results in Table 4.3, the answerers strong1y agreed that process innovations avails timely funds for use in the business (mean=4.117), real time settlements through use of RTGS has led to increased funds transfers by SMEs (mean=4.106) and that clearing of Cheques within one day through ACH has enhanced SME transaction numbers (mean=4.021). In addition, most SMEs have saved on time they spent doing banking as a result of process innovation (mean=3.964) and that use of process innovations provides information that can be used for loan appraisal (mean=3.785). The implication from the findings was that process innovations availed timely funds for use in the business, real time settlements through use of RTGS had led to increased funds transfers by SMEs and that clearing of Cheques within one day through ACH had enhanced SME transaction numbers.

4.4.5 Channel Innovations

The research sought to establish how channel innovation by commercial banks affects lending to SMEs. The responses were rated on a five point 1ikert scale where l- Strong1y

disagree, 2 - Disagree, 3- Neutral, 4 -Agree and 5 – Strong1y agree. The results were as illustrated in Tab1e 4.4.

Table 4.4: Process Innovations

	Mean	Std. Deviation
Most SMEs have cut on the time they spend when doing banking as a result of mobile banking	4.266	0.444
Most SMEs have saved on the time undertaken to do banking as a result of agency banking	4.192	0.396
Agency banking has enhanced use of bank accounts leading to more information for appraising SMEs for loans	4.287	0.478
Channel innovations provide convenience and are preferred by SMEs compared to transacting from the bank.	3.700	0.460
Channel innovations avail complementary information for use in loan appraisal	3.897	0.590

Table 4.4 indicates that the respondents strongly agreed that agency banking has enhanced use of bank accounts leading to more information for appraising SMEs for loans (mean=4.287), most SMEs have saved on the time they took to do banking as a result of mobile banking (mean=4.266) and that most SMEs have saved on the time undertaken to do banking as a result of agency banking (mean=4.192). In addition respondents agreed that channel innovations had availed complementary information for use in loan appraisal (mean=3.897) and that channel innovations provided convenience and were preferred by SMEs compared to transacting from the bank hall (mean=3.700). The implication was that agency banking had enhanced use of bank accounts leading to more information for appraising SMEs for loans, most SMEs saved on time they spent doing banking because of mobile banking and that most SMEs had cut on time they took to do banking because of agency banking.

4.4.6 Institutional Innovations

The purpose of this investigation was to prove the effect of institutions innovations by commercial banks on lending to SMEs. Feedback was rated on a five place 1ikert scale where l=disagreeing strongly, 2 = Disagree, 3- Neutral, 4 - Agree and 5- agreeing strongly. The results were as illustrated in Table 4.5.

Table 4.5: Institutional Innovations

	Average	Std. Deviation
Extending banking hours translated to increased transactions by SMEs.	3.866	0.460
Extended banking hours has enhanced SME banking convenience	4.149	0.358
SME only braches improve service to customers	4.128	0.553
Use of Institutional innovations provides information that is used for loan appraisal	3.780	0.522
SME only branches help to improve relationship between customer and bank	4.266	0.512

Basing upon the study, majority of the answerers were strongly in agreement that SME only branches help to improve relationship between SME customers and commercial banks (mean=4.266), extended banking hours has enhanced SME banking convenience (mean=4.149) and that SME only braches improve service to customers (mean=4.128). Further, respondents agreed that extending banking hours has led to increased transactions by SMEs (mean=3.866) and that use of Institutional innovations provides information that is used for loan appraisal (mean=3.780). This had the implication that SME only branches help to improve relationship between customer and bank, extended banking hours has enhanced SME banking convenience and that SME only braches improve service to customers.

4.4.7 Regulatory Framework

It was the interest of the study to establish the moderating effect of the regulatory framework on the relationship between financial innovation and lending to SMEs. The feedback was ranked on 5 element likert scale where l =Strong disagreement, 2= Disagree, 3= Neutral, 4= Agree and 5 -Strong agreement. The results were as illustrated in Table 4.6.

Table 4.6: Regulatory Framework

	Mean	Std. Deviation
Regulatory framework is an impendent to financial innovation supply	4.077	0.882
Regulatory framework enhances consumer protection	3.750	0.437
Financial innovations have added to the degree of association between SMEs and banking institutions	4.212	0.750
Regulatory framework provides a framework for risk management and control	4.058	0.235
Regulatory framework is informed by risks that could arise from use of financial innovations	4.289	0.957

Reached from the study findings, majority of the interviewees were strongly in agreement that regulatory framework was informed by risks that could arise from use of financial innovations (mean=4.289), financial innovations have added to the degree of connection between SMEs and banking institutions (mean=4.212), regulatory framework is an impendent to financial innovation supply (mean=4.077) and that regulatory framework provides a framework for risk management and control (mean=4.058). In addition, respondents agreed that regulatory framework enhances consumer protection (mean=3.750). This is an indication that regulatory framework is informed by risks that could arise from use of financial innovations, financial innovations have amplified the degree of association between SMEs and banking institutions, regulatory framework is an

impendent to financial innovation supply and that regulatory framework provides a framework for risk management and control.

4.4.8 Lending to SMEs

Interviewees were asked to gauge their degree agreement with regard to the statements that follow concerning lending to SMEs. The responses were classified based on a 5 element 1ikert scale where l=Strong in disagreement, 2=Disagreement, 3=Neutra1, 4 =Agreement and 5= Strong in agreement agree. The results were as illustrated in Table 4.7

Table 4.7: Lending to SMEs

	Mean	Std. Deviation
Financial innovations have added to the degree of connections between SMEs and banking institutions	4.500	0.505
Product innovations increase product uptake which enhances information relied upon during relationship lending	3.692	0.612
Product innovations increase product uptake which enhances information relied upon during relationship lending	4.077	0.269
Financial innovations enhance lending to SMEs	4.019	0.700

Deduction reached from the study was that most of the interviewees strongly accepted that financial innovation had intensified the level of association existing between SMEs and banking institutions (mean=4.500), product innovations increased product uptake which enhances information relied upon during relationship lending (mean=4.077) and that financial innovations enhanced lending to SMEs (mean=4.019). Meaning that financial innovations have added to the degree of connection between SMEs and banking institutions in Kenya.

4.5 Diagnostic Tests

Research work may be susceptible to various forms of bias. Such bias may include presence of outliers in research data, selection bias. Diagnostic tests are therefore conducted to address such bias with the aim of evaluating the diagnostic tests. This study performed various dialogistic tests including linearity tests, multicollinearity tests, heteroscedasticity tests, normality test, and anova tests.

4.5.1. Linearity test

Durbin Watson test was used to check seria1 corre1ation among factors. When residual terms from different, normally adjacent time periods are corre1ated, then it is said that the disturbance term is serial1y corre1ated. Seria1 correlation affects the efficiency of ordinary least squares estimator. Durbin Watson seria1 correlation test performed checked if the study variab1es were corre1ated. The test results are found on Table 4.8 below.

Table 4.8: Linearity test

Test	Statistic
Durbin –Watson	2.235

Source Research Investigation

Table 4.8presents the Durbin – Watson seria1 correlation test results value va1ue to be 2.235 which is more than two suggesting absence of serial correlation.

4.5.2 Multicollinearity Test

Multicollinearity is present when more than one explanatory element in a multi -linear regression representation are strong1y correlated. A group of independent variables exhibits exact multicollinearity when there exists above one exact direct relationship among some of the variables. Multicollinearity escalates normal deviations leading to false findings .This research employed Tolerance and Variance Inf1ation Factor (VIF) technique to test for mu1ticollinearity in the study elements where values above 0.2 for tolerance and values below 10 for VIF indicated no multicollinearity. The findings as tabulated in Table 4.9 showed no multico1linearitysince the values for Tolerance were above 0.2 and for VIF were below 10, meaning that use of regression investigation in estimating the effect of bank financia1 innovations on loaning to small and medium enterprises by selected commercia1 banks in Kenya was justified.

Table 4.9: Coefficients[a]

	Collinearity Statistics Tolerance	VIF
Product innovation	.500	2.000
Process innovation	.608	1.646
Channel innovation	.633	1.580
Institutions innovations	.493	2.027
Regulatory framework	.242	4.132

4.5.3 Heteroscedasticity Test

Heteroscedasticity was analyzed using Breusch-Pagan test. This test assumes constant variance among the disturbance terms (homoscedasticity).When the assumption is upheld by the regression model it means the results are reliable. Where the P-value is below

the0.05 significance level, Ho is rejected implying presence of heteroscedasticity. Results of heteroscedasticity tests are shown in Table 4.10.

Table 4.10: Test for Heteroscedasticity

BreuschPagan / CookWeisberg test for heteroscedasticity			
Ho: Constant variance			
Variables: fitted values			
	Chi2 (1)	=	1.34
	Probability> chi2	=	0.2476

Source; Researcher (2021)

Table 4.8 shows that the disturbance terms in the regression model had equal variance. The test statistic (chi-square) value was 1.34 with a P-value above the significance level 0.05 equal to 0.2476.This indicated constant variance in the data set. Ho was accepted meaning the data was homoscedastic.

4.5.4Normality Test

The application of inferential statistics parameters assumes data is normally distributed. This assumption was proved by conducting both the Kolmogorov-Smirnov test and the Shapiro-Wilk test. Shapiro-Wilk test gives more accurate results for small data samples and is acceptable for deciding on kurtosis and skewness of data. In both test the null hypothesis requires the error terms to assume a bell shape when plotted. In deciding, the null hypothesis is rejected when the p values fall short of the0.05 significance levels since this would mean that the data is deviating from the normal distribution

Table 4.11: Shapiro-Wilk Test for Normality

Variables	Kolmogorov_Smirnov[a]			Shapiro_Wilk.		
	Statistic	df	Sig.	Statistic.	Df	Sig.
Product innovation	0.216	89	.057	0.725	89	.059
Process innovation	0.348	89	.086	0.675	89	.051
Channel innovation	0.316	89	.161	0.726	89	.217
Institutions innovations	0.326	89	.328	0.743	89	.774
Regulatory framework	0.349	89	.108	0.636	89	.210

From table 4.11 Shapiro-Wilkinson P- values for all the variables exceeded the 0.05 significance level and the null hypothesis was not rejected. This meant that the data followed a normal distribution. Further, when the Kolmogorov –Smirnov tests was applied, the P- values obtained were above the 0.05 significance level. The null hypothesis was not rejected. This was prove that the data satisfied the normality assumption.

4.5.5 Anova Test

Anova test is applied when observations are random and samples taken from populations are independent of each other. Therefore, randomizing samples selected ensures independence which is required for Anova application. Anova tests also satisfy the assumption of homogeneity and normality.

Table 4.12: Anova Test

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	115.28	5	23.056	16.384	0.0002[b]
Residual	118.188	84	1.407		
Total	233.468	89			

According to the findings in the table, homogeneity and normality existed because the regression results had p values equal to 0.0002 which is less than 0.05 when tested at 5 percent significance one tail test.

4.6 Correlation Results

Table 4.13: Correlation Results the Explanatory Variables versus Explained Variable

	Lending	Product innovation	Process innovation	Channel innovations	Institutional innovations
Lending	1				
Product innovation	0.593	1			
Process innovation	0.559	0.654	1		
Channel innovations	0.548	0.742	0.25	1	
Institutional innovations	0.558	0.272	0.528	0.25	1

The Pearson correlation coefficient for all independent variables versus dependent variable was computed and established as 0.593 for product innovation, 0.559 for process innovation, 0.548 for channel innovations, and 0.558 for institutional innovation. The deduction that was drawn from table 4.13 was that a modest positive liner link connecting the predictor variables and lending to SME's existed since the correlation coefficient lay between 0.4 and 0.6.This was in line with Dancey and Reidy's (2004) categorization.

4.7 Regression Analysis Results of Financial Innovation and Performance

Table 4.14: Regression Analysis Results for all Independent variables Vs Dependent

Mode1	R	R Squared	Adjusted R Squared	Std. Error of the Estimate
1	0.889[a]	0.790	0.753	0.896

The regression investigation showed a coefficient of determination R^2 =0.790. This meant that 79 percent of variation in the financing to SME's could be accounted for by a unit change of all independent alterable (product innovation, process innovation, channel innovations and financial innovation). The remaining percentage of 21 percent was accounted for by other variab1es not captured by the regression model but represented by the error term (e). The results are presented on Table 4.14

Table 4.15: Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
(Constant)	3.936	0.765		5.145	0.0000
Product innovation	0.741	0.236	0.646	3.140	0.0032
Process innovation	0.667	0.215	0.526	3.102	0.0035
Channel innovations	0.737	0.123	0.645	5.992	0.0000
Institutional innovations	0.549	0.2654	0.442	2.069	0.0452

Significance of the relationship between the predictor variables and the response variable was proved using the t- test. The null hypothesis requires regression coefficient (beta) to have a significance equal to zero meaning slope for beta equal zero which implies absence of a relationship between financial innovations by the selected commercial banks and lending to SMEs.

The findings for the beta coefficient of the resulting model in table 4.15 showed that the constant $\alpha = 3.936$ was remarkably different from 0, since the p- value = 0.000 is less than 0.05.

Table 4.16: ANOVA Results for predictor Variables versus Response Variable

Model		Sumof Squares	Df	Mean Square	F	Significance
1	Regression	77.84	4	19.460	21.015	0.00000
	Residual	78.71	85	0.926		
	Total	156.55	89			

a. Predictors: product innovation, process innovation, channel innovations and financial innovation

b. ResponseVariab1e: Lending to SME's

Further, F-test was carried out to test the null hypothesis that there is no relationship between financial innovations by commercial banks and lending to SME's. The ANOVA test in Table 4.16 shows that the significance of the F-statistic 0.000 is less than 0.05 meaning that null hypothesis was rejected. Therefore the regression model was adequate in explaining that there is a relationship between financia1 innovations by commercia1 banks and lending to SME's

4.8 The mediating impact of Regulatory framework on the Association linking Financial Innovation and Lending to SMEs.

The mediating effect of regulatory framework on the link between financial innovation and lending to SMEs was analyzed using the Baron and Kenny (1986) four-step method and the 1inear regression method. First step entailed initiating a direct regression between the independent variable, financial innovations and the dependent variable 1ending to

SME's but when keeping the mediator variable regulatory framework constant. R^2 and beta coefficients are required to be statistically significant for the process to move to next step, if not the process stops and the researcher deduces that regulatory framework does not play a mediator role for the link between financial innovations and lending to SMEs. The second step involved regressing the predictor variable (financial innovations) on the mediator variable (regu1atory framework). 1f the results were statistically significant (below 0.05 alpha value), the process moved to step 3 because the necessary condition for moderation existed. Step three involved establishing whether regu1atory framework influences loaning to SMEs. A simple linear regression model was used. Where results are statistically significant then moderation effect is implied. The final process was about regressing regression resu1ts for the effect of financial innovation and regulatory framework on the response variable, financing to SMEs. This was a necessary condition in testing for moderation.

Table 4.l7 shows the results of step one of testing for moderation.

Table 4.17: Regression Results for the Effect of financial innovation on the lending to SME's

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.516[a]	0.266	0.243	0.50376

a Predictors: (Constant), financial innovation

ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.

1	Regression	2.944	1	2.944	11.591	.002[b]
	Residual	22.352	88	0.254		
	Total	25.296	89			

V. Dependent Variable: lending to SME's
W. Predictors: (Constant), financial innovation

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.102	0.892		0.114	0.001
	Financial innovation	0.847	0.249	0.516	3.402	0.002

a. Dependent Variable: lending to SME's

Table 4.17 shows that financial innovation had a direct effect on the lending to SME's as indicated by a coefficient value of 0.516. Findings in the table depicted the influence of financial innovation on the lending to SME's as significant. Values obtained being R Square = 0.266, F = 11.591, $p < 0.05$ with 26.6 percent of the variation in the lending to SME's explained by financial innovation. The F ratio indicates that the regression of financial innovation on the lending to SME's is significant at $p < 0.05$, implying that the regression model had the goodness of fit. The beta was equally significant ($\beta = 0.847$, $t = 3.402$, $p < 0.05$). The first mediating requirement that the predictor variable be related the response variable directly is therefore fulfilled.

Table 4.18 shows the summary of results of step two of testing for moderation

Table 4.18: Regression Test of the Effect of Financial innovation on Regulatory framework

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.247	.061	.054	0.45695
Predictors: (Constant), Financial innovation				

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.936	1	1.936	9.353	.003
	Residual	18.216	88	.207		
	Total	29.467	89			
Dependent Variable: Regulatory framework						
Predictors: (Constant), Financial innovation						

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.946	.265		11.117	.000
	Financial innovation	.216	.071	.247	3.042	.003
Dependent Variable: Regulatory framework						
Predictors: (Constant), financial innovation						

The results presented in Table 4.18 indicate that Financial innovation had a positive and significant effect on Regulatory framework (R=0.247,P< 0.05). Financial innovation explained 6.1 per cent (R^2=0.061,F=9.353, p < 0.05) of the variation in Regulatory framework, leaving 93.1 per cent as being expounded on by other elements, not captured by the model. The results confirm the influence of Regulatory framework in the relationship between financial innovation and lending to SMEs thus allowing to step 3 to be investigated.

Step three involves testing for the moderating effect of regulatory framework on the Lending to SMEs. The results of this step are presented in Table 4.19

Table 4.19: Regression Results Depicting the Effect of Regulatory framework on Lending to SMEs

Model Summary

Model	R.	R. Square	Adjusted the R^2	Std. Error of Estimate
1	.364[a]	0.132	0.105	0.54776

a. Predictors: (Constant), regulatory framework

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.464	1	1.464	4.88	.034[b]
	Residual	26.4	88	0.3		
	Total	27.864	89			

a. Dependent Variable: lending to SME's

b. Predictors: (Constant), regulatory framework

Co-efficientsa

Model		Un-standardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	1.273	0.145		8.779	0.002
	regulatory framework	0.52	0.135	0.364	3.852	0.034

a. Dependent Variable: lending to SME's

Table 4.19 presents a weak relationship between regulatory framework and the lending to SME's (R=0.364) with regulatory framework explaining a 13.2 percent variation in the lending to SME's. The difference of 86.8 percent is accounted for by variables not considered in this model. The third moderation condition that the independent variable should be linked to a large extent to the dependent variable without the existence of the moderating variable is therefore fulfilled.

Table 4.20 shows a summary of the results of step four of testing for moderation.

Table 4.20: Regression Results for the Effect of Financia1 innovation and Regulatory framework on Lending to SME's

Model -R	R^2	Adj-R^2	Std. Error of Estimate	R^2 change	F-change	df	Sig. F Change
1. 0.516[a]	0.266	0.243	0.5038	0.516	10.141	1	0.000
2. 0.623[b]	0.388	0.256	0.4734	0.107	1.252	1	0.000

a. Predictors (Constant-), financial innovation
b. Predictors (Constant-), financial innovation, Regulatory framework

ANOVA[a]

Mode1	Sumofsquares	D-f	Meansquare	F	Sig.
Regression 1.	2.455	1	2.944	11.591	0.002[b]
Residua1	22.352	88	0.254		
Tota1	24.807	89			
Regression 2.Residua1	4.249	2	1.856	8.838	0.003 [c]
	18.27	87	0.210		
Tota1	22.519	89			

a. Dependent Variable: lending to SME's

b. Predictors (Constant), Financial innovation

c. Predictors (Constant), Financial innovation, Regulatory framework

Co-efficients[a]

Model	Un-standardized coefficients		Standardized coefficient	T	Sig.
	Beta	Std. Error	Beta	Values	
(Constant-)	0.102	0.012		8.500	0.011
1stFinancial innovation	0.847	0.149	0.516	5.684	0.022

(Constant)	0.216	0.104		2.077	0.035
2ndFinancial innovation	0.257	0.133	0.471	1.932	0.071
Regulatory framework	0.065	0.011	0.322	5.909	0.019

a. Dependent Variable: lending to SME's

Table 4.20 indicates a strong relationship among financial innovation, regulatory framework and lending to SME's with a correlation coefficient of 0.623 (P value= 0.000). The coefficient increased from 0.516 to 0.623 representing an increase of 0.107 when regulatory framework were introduced as a predictor in the model. This implies that the inclusion of regulatory framework enhanced the relationship between financial innovation and Lending to SME's by an additional 10.7 percent. The R^2 also increased from 0.266 to 0.388 (P value=0.000). With the presence of regulatory framework, the model becomes stronger as shown in Table 4.20. Therefore regulatory framework have a moderating effect on the relationship between financial innovation and lending to SME's, which leads to the conclusion that hypothesis5, is supported in the current study.

4.9 Hypotheses Testing

Multiple linear regression investigation was used to test the five hypothesis as represented in tables 4.15 and 4.20.

4.9.1 Hypothesis Testing for Product innovations

HX_1: Product innovation by commercial banks has no effect on lending to SMEs

Multiple linear regression was applied in testing the hypothesis and determined using p value. HX_1 was to be rejected for p- values less than the significance level of 0.05 and not rejected for P-values above the significance level. As shown in table 4.l5, the p-value for

this hypothesis was 0.0032. A worked out t-statistic value of 3.l40 which was larger than the critical t-statistic of l.96 supported the findings. Rejecting the conjecture was justified. The alternative hypothesis that product innovation by commercia1 banks has a consequential effect on lending to SMEs in Kenya in Kenya was adopted.

4.9.2 Hypothesis Testing for Process innovations

HX_2: Process innovation by commercial banks has no effect on lending to SMEs

HX_2 was to be rejected for P-values below the significance level of 0.05 and not rejected for p-values above the significance level. Multiple linear regression was used to test the hypothesis and determined using the p-value. Analysis in table 4.15 gives p-value of 0.0035 for this hypothesis. A computed t-statistic value of 3.l02 which exceeded the critical t-statistic of l.96 supported the findings. Deduction being to adopt the alternate hypothesis that Process innovation by commercia1 banks has a significant effect on lending to SMEs in Kenya in Kenya and reject the null hypothesis.

4.9.3 Hypothesis Testing for Channel innovations

HX_3: Channel innovation by commercial banks has no effect on lending to SMEs

Multiple linear regression was applied in testing the HX_3 and decided using the p value. H_{o3} was to be rejected for p-values less than the significance level of 0.05 and not rejected for values above the alpha- value of 0.05. The resulting p-value for this hypothesis which was equal to 0.0000 is shown in table 4.15 and findings were confirmed by a computed t-statistic value of 5.992 which was greater than the critical t-statistic of l.96. Rejecting the conjecture was substantiated. Conclusion being that the alternate

hypothesis; Product innovation by commercia1 banks has a significant effect on lending to SMEs in Kenya in Kenya be adopted

4.9.4 Hypothesis Testing for Institutional Innovations

HX_4: Institutional innovation by commercial banks has no effect on lending to SMEs

To test HX_4, multiple linear regression was adopted and settled upon using p- value. HX_4 was to be rejected for p-values less than the 0.05 alpha value and not rejected for P-values above the 0.05 significance level. P-value for this hypothesis was 0.0452 as indicated in table 4.15. A worked out t-statistic value of 2.069 which was more than the critical t-statistic of l.96 confirmed the findings. Rejecting the null hypothesis was therefore defended. The a1ternative hypothesis that Product innovation by commercia1 banks has a significant effect on lending to SMEs in Kenya in Kenya was adopted.

4.9.5 Hypothesis Testing for Regulatory Framework

HX_5: Regulatory framework has no moderating effect on the relationship between financial innovations and lending to SMEs

The hypothesis was tried using multiple linear regression and determined using p-value. As shown in Tab1e 4.20the coefficient elevated from 0.5l6 to 0.623 representing an increase of 0.l07 when regu1atory framework was included as a predictor in the mode1. This implied that the inclusion of regu1atory framework enhanced the relationship between financial innovation and lending to SME's by an additional l0.7 percent. The R^2 also increased from 0.266 to 0.388 (P value=0.000). With the presence of regu1atory framework, the model become stronger as shown in Tab1e 4.20. Therefore regulatory framework had a moderating effect on the association between financial innovations and

lending to SME's, contribute to the conclusion that hypothesis 5, and is supported in the current study.

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Chapter five gives a synopsis of the findings from the research results and the inferences which were drawn. The researcher also discusses the policy recommendations relating to the financial innovations studied. In addition the researcher calls for further studies on financial innovations and lending to SMEs by other scholars. The formation for this chapter followed the study objectives.

5.2 Summary of Findings

The study revealed that as a result of product innovation by commercial banks, majority of SMEs had been able to add to their deposits because of tailored business savings account, most SMEs could adequately service the loans advanced to them, tailoring loan accounts to specific needs of SMEs had increased number of accounts and that introduction of innovative products had positively impacted on lending to SMEs.

In addition, the study established that process innovations availed timely funds for use in the business, real time settlements through use of RTGS had led to increased funds transfers by SMEs and that clearing of cheques within one day through ACH had enhanced SME transaction numbers.

The study also revealed that channel innovations had enhanced the use of bank accounts leading to more information for appraising SMEs for loans, most SMEs had cut on time

spent doing banking as a consequence of mobile banking, and that most SMEs had saved on time spent doing physical banking because of agency banking.

Furthermore the study established that institutional innovations helped to improve associations between SME customers and commercial banks. Extended banking hours had enhanced SME banking convenience and that SME only branches improved service to customers.

Moreover, the study revealed that regulatory framework was informed by risks that could arise from use of financial innovations. Financial innovations intensified the level of association linking SMEs and banking institutions. Regulatory framework was found to provide a framework for risk management and in addition it was observed to bean impendent to financial innovation supply.

5.3 Conclusions

The intent of the investigations was to examine the consequences of bank financial innovations on lending to SMEs by selected commercial banks in Kenya. The study conclusions were logically deduced from the findings and have been organized as per the study objectives. The data collected and ana1ysed through descriptive and inferential statistics established that all the bank financial innovations studied had a significant effects on 1ending to small and medium enterprises by selected commercia1 banks in Kenya. Product innovation had a mean of 4.029, a standard deviation of 0.561, Pearson correlation coefficient of 0.593, and p value of 0.0032. Descriptive statistics for process innovations were a mean of 4.000, a standard deviation of 0.487, while the inferential statistics were correlation coefficient equal to 0.559 and value of p being 0.0035.The

mean value for channel innovations was 4.068 with a standard deviation of 0.473 while the correlation coefficient was determined as 0.548 and p value of 0.000 calculated. Statistical values for institutional innovations was a p-value 0.0452 and a square root variance of 0.481.The inferential statistics were calculated with the Pearson correlation coefficient found to be 0.558 and p value of 0.452.Lending to SMEs by selected commercial banks was described by a mean of 4.072 and a standard deviation of 0.5215. The Pearson correlation coefficient values for product, process, channel and institutional innovation showed a moderately positive linear relationship with the response variable; lending to SMEs by selected commercial banks in Kenya. The p values for the variables in the regression model were below 0.05 significance level showing that they were significant and that the independent variables were good predictors for the model therefore implying that the null hypothesis be rejected. For regulatory framework, the moderating variable, a mean of 4.072 and standard deviation of 0.6522 were determined, the p value was found to be0.000 depicting a strong relationship among financial innovations, regulatory framework and lending to SMEs. The Pearson correlation value for regulatory framework increased from 0.546 to 0.623 and the R squared value increased from 0.266 to0.3880 showing the relationship was enhanced when regulatory framework was introduced in the model. The coefficient of determination R^2 for the regression model was 0.790 which meant that 79% of variations in the response variable (lending to SMEs by selected commercial banks) was explained by a unit change of all the independent variables (product, process, channel and institutional innovations. Also meaning that the regression line fit well in the data set. Thus, it can be concluded that product innovation, process innovation, channel innovation and institutional innovation

were significant in explaining the lending to small and medium enterprises by selected commercia1 banks in Kenya. The deduction drawn from this research is that the regulatory framework mediates the relationship linking financial innovation and lending to SME.

5.4 Recommendations

5.4.1 Policy Recommendations

Product innovation had a significant effect on lending to SMEs, the study recommended that financial product managers of commercial banks should enhance product portfolio innovation which meet customer needs. This could be done by adding to research and development, seeking the services of experts in development of new products and increased training on product features and benefits to bank staff,

Process innovation had a positive significant effect of lending to SMEs, the study recommended that customer relationship managers should embrace efficient process innovations that would increase the lending rate to the SME's which would significantly improve the performance of the commercial banks. They could do this by learning and implementing best practices from the industry, carrying out further research to determine efficient processes and giving feedback to the technical team which could be incorporated to existing processes for improvement. This study in addition recommended that commercial banks should incorporate efficient processes that speed up services, reduce service costs so as to serve SME's better.

The study established a significant positive relationship between channel innovations by commercial banks and lending to SMEs. Therefore technologically enhanced channels

including e-banking mobile banking and agency banking needed to be enhanced. This could be done by acquisition of banking operational platforms which were compatible with the mobile devices used by their clients, further research to understand the channels preferred by their clients and engaging the services of experts for their advice. Therefore, this study recommended that commercial banks should heavily invest on channels innovations that would help SME's to easily access loans.

The study established a significant positive relationship between institutional innovations by commercial banks and lending to SMEs. Institutions for example the Kenya Bankers Association played the role of championing industry development through innovation. The body did this by partnering with other institutions and stakeholders. For example KBA and CBK had implemented financial innovations such as the real time gross settlement system and the automated clearing house to modernize national payments and assist the SMEs to safely and conveniently transact. This study highly recommended incorporations of institutional innovations when lending to SME's

From the study, regulatory framework for commercial bank, the CBK, had a moderating effect on the relationship between financial innovations and lending to SME's by the commercial banks. CBK played a moderating role by ways which included enacting laws and regulations to be followed by commercial banks, requiring commercial banks to seek approval before incorporating financial innovation in their business models. Such actions were important in checking extremes that could arise from unchecked financial innovations. Sustainable lending to SMEs would also be ensured and relationships

between the banks and the SME clients be enhanced. This study recommended enhancement of the CBKs regulatory framework.

5.4.2Limitations and Suggestions for further studies

This study focused on selected commercial banks in Kenya that lend to Small and medium enterprises. Further research was therefore advocated from financial institutions that commercial lending to other clients including corporates and retail and in other sectors of the financial industry including insurance and capital markets so as to find out the full impact on lending arising from financia1 innovations. Further studies on the effect of the bank financia1 innovations on the general lending in the economy can be done to establish whether there could be any noted effect in the economy such growth in the uptake of loans to fund businesses that is attributable to financial innovations that continue to be adopted by financing institutions.

REFERENCES

Abir, R. (2016). Interaction effect between product and process innovations: the case of Tunisian banks. *Banks and Banks Systems*, 1,1(1),60-70.

Achieng, P. K. (2015). *Financial innovations and the future of financial intermediation.* Nairobi: Author.

ADBI. (2018, December). The role of SME's in Asia and their difficulties in accessing finance. *ADBI Working Paper Series*. ADBI.

Agola, J. (2018). *Impact of banking innovations on customer attraction satisfaction andretention. case of commercial banks in Botswana.*

Ahmed, W. (2015). Financial Innovation in Tanzania: opportunities and challenges. *International Conference on Social Science, Education Management and Sports Education.*

Alhasan, s. (2014). Social Economic Determinants of (smes) Access to credit from Barclays Bank Tamale-Ghana. *International journal of humanities and social science studies*, 26-36.

Alushula, P. (2017, September 19th). Banks now warming up to 'risky' SMEs for survival. Nairobi, Kenya.

Antonnet, J. (2014). *The effect of product innovation on financial performance of Commercial Banks.* Nairobi.

Arthur, T. K. (2018). Can we have a general theory of financial innovations processes, a conceptual review. *Springer*, Vol 4 (1) pages 1-27.

Awinja. (2015). *Service Delivery Channels and Operation Performance of Commercial Banksin Kenya.*

Aysel, F. (2017). Analysis of the Relationship between Financial Innovation and the Performance of Turkish Banking System. *International review of Economics and management*, Volume 5, Number 3, 2017, 16-32.

Baicu, C. (2018, December 22). *The impact of financial innovations on banking regulations:*. Retrieved from Researchgate.net: https://researchgate.net

Banerjee, G. ,. (2016). *the real effects of relationship lending.* Author.

Baskara, S. ,. (2017). The role of borrower characteristics, relationship lending and trust on SMEs creditworthiness. *International Journal of Economic research*, Volume 14. no .3.

Berg, R. T. (2015). *Bank financing of SMEs in Kenya.* Nairobi: Finaccess Kenya.

Blach, J. (2011). *Financial innovations and their role in the modern financial system. identification and systemization of the problem.* Poland : Ministry of Science and Higher Education.

Brian, B. (2018). *The Effect of Product Innovation on Financial Performance Commercial Banks in Kenya.* Nairobi.

Brown, M. P. (2016). *Effect of financial innovations on the performance of universal banks in Ghana*. Author.

CBK. (2017). *Bank supervision annual report.* Nairobi: Author.

CBK. (2017, July-September). Credit Survey. *Central Bank of Kenya (CBK) Commercial Bank's Credit Survey*. Nairobi: CBK.

CBK. (2018). *Credit survey report.* NAIROBI: CBK.

CBK. (2018, FEBRUARY 23). Consultative Paper on the review of the Microfinance Legislation. Nairobi: CBK.

CBK. (2018, March). The Impact of Interest Rate Capping on the Kenya economy. Highlights. Nairobi, Kenya: CBK.

CMA. (2017). *Kenya financial sector stability report.* Nairobi.

Coetzee, P. B. (2017). The impact of the independent review on SME Access to bank finance: the case of south Africa. *Banks and Banks Systems*, Vol 12, issue 1 2017.

Cytonn. (2019, April 20). *Cytonn .com*. Retrieved from Cytonn website: https://cytonn.com

David, K. (2017). *Financial innovations on financial performance of commercial banks in Kenya.* Nairobi.

Deloitte . (2015). *Digital banking for small and medium sized enterprises improving access to finance for the underserved.* Author.

Emeka, o. (2017). *Small and Medium Enterprise finance in Nigeria, Benefits Challenges and way forward.* Nigeria.

Ernst & Young. (2018). *The future of SME banking.* Author.

EU. (2018, April to September). SME access to finance conditions. *2018 SAFE results*. EU.

FSD KENYA. (2016). *SME banking in Kenya.* KENYA.

FSD. (2016). *Testing SME Banking in Kenya*. Nairobi: Author.

Glynn, R. R. (2012). *Institutional innovations: Novel ,Useful and Legitmate.*

Godfrey Foragha, T. S. (2018). Effects of Lending Relationships on The Interest Rates of Commercial Banks. *Asian Journal OF Economic Modeling*, Vol 6 No.2 208-219.

Gordon, H. (2018, July). *australiancentre.com.au.* Retrieved from australiancentre.com.au: http://www.afia.asn.au

Hyun, Y. J. (2014). *product versus process innovation and the global engagement of firms.* Author.

Ireland, C. b. (2019). *SME Market Report.* Central Bank of Ireland.

Irungu, M. (2014). *The effect of financial innovation on credit risk management of commercial banks in Kenya.* Nairobi: Upon.

James Ochieng. (2019, February 18). *Kippra.or .ke*. Retrieved from Kippra website.

James, S. (2016). *Influence of commercial Bank Characteristics on Lending approaches toSMEs in Kenya.* Nairobi.

Jegende, C. A. (2014). Effect of Automated Teller Machine on the performance of Nigerian banks. *American Journal of Applied Mathematics and Statistics*, 40-46.

KAM. (2018). *Manufacturing Priority Agenda 2018.* Nairobi: Kenya Association of Manufactures.

Kaminski, J. (2011). Diffusion of Innovation theory. *Canadian Journal of Nursing Informatics*, VOL 6, No 2.

Kariu, J. (2017). *Effect OF Financial innovations on Financial Performance of Commercial Banks.* Nairobi.

KBA. (2016). *Financing Small and Medium Enterprises.* Nairobi: Center For Research and Financial Markets and Policy.

KBA. (2016). *Financing Small and Medium Enterprises.* Nairobi: KBA.

KBG ,KAM. (2018). *Manufacturing in Kenya Under The big 4 Agenda.* Kenya: Author.

Kenya, C. B. (2017). *Bank Supervision Annual Report.* Nairobi: Central Bank of Kenya.

Kenya, FSD. (2016, march). *SME Banking In Kenya.* Nairobi: FSD.

Kiama, P. (2012). *Relationship Lending and Credit Availability to Small and Medium Sized Manufcturing Entities in Nairobi Kenya.* Nairobi.

Kilplagat, K. D. (2017). *Financial innovation on Financial performance of commercial banksin Kenya*.

Kimaiyo. (2016). *Factors limiting access to small and medium enterprises access to credit inUashinGishu District.* Nairobi.

Kimutai, C. J. (2013). Factors influencing credit rationing by commercial banks in Kenya. *International Journal of Humanities and social science*, Vol 3 no 2.

KNBS. (2016). *Micro small and medium establishments(MSME) survey.* Nairobi.

KNBS. (2017). *Economic survey.* NAIROBI: KNBS.

KNBS. (2018). *Economic Survey.* Nairobi.

Liberti, A. p. (2018). *Information,Hard and Soft.*Liberti, A petersen.

Lien-Wen Liang, B. (2017, May 20). The impact of SMEs Lending and Credit guarantee on Bank efficiency in south Korea. *Review of Development Finance*. South Korea.

Lotto, J. (2018). Role of financial innovations on bank performance in Zanzibar. *European Journal of Accounting Finance and Investment*, Vol 4, No 12.

Loumitioi, D. C. (2013). *Monitoring Portability of Soft Information.* Author.

Maina, K. (2016). *Effect of Adoption of Financial Innovation on Performance of Small and Medium Enterprises In Kenya*. Nairobi.

Makau, S. I. (2016). Ethical considerations and their applications to research: a case of Nairobi university. *Journal of Education Policy and Entrepreneurial research*, Vol.3 No. 12 1-9.

Malik, A. (2017). *Financing the growth of SMEs in Africa.*

Marwa, C. N. (2013, October 24). *Effects of relationship lending on profitability of commercial banks in Kenya*. Nairobi.

Masila, J. (2018). *Effect of Electronic Banking on Efficiency of Microfinance banks in Kenya.* Nairobi.

Michael, N. (2016, June). *moodysanalytics.com.* Retrieved from moodysanalytics.com: http://www.moodysanalytics.com

Momanyi, D. (2018, August). Influence of financial regulations in Kenya on financial inclusion: A case of the banking industry in Kenya. *KBA Centre for Reseach onFinancial Markets and Policy.Woking paper series*. Nairobi: kba.

Muchiri, F. (2017). *Strategic alternative banking channels and performance of commercialbanks in Kenya*. Nairobi: Author.

Mugane, C. (2015). *Effect of finacial innovations on the financial performance of commercialbanks in Kenya*. KENYA.

Muhia, S. (2017). *The effect of Financial innovation on financial performance of commercialbank in kenya* .Nairobi.

Muia, A. M. (2013). *The relationship between financial innovations and growth in profitabilityof islamic banking in kenya.* Nairobi.

Muiruri, J. (2014). *Effect of financial innovations on the performance of commercial banks inkenya.* Nairobi: Author.

Muiruri, J. k. (2014). Effect of financial innovaation on the financial performance of commercial banks in Kenya. *International Journal of Humanities and Social Sciences*, Vol 4, No 7.

Munjiru, M. (2013). *Humancapital ,socialcapital,employee empowerment ,quality ofdecisions and performance of commercial banks and insurance firms in Kenya* . Nairobi: Author.

Muthinja, C. (2018). Financial Innovations and bank performance: evidence from branchless banking models. *South African Journal of Economics and Management Sciences*, 21.

Muturi, S. (2017). *Effects of Lending Methodologies on Financial Performance of MicroFinance institutions in Kenya.* Nairobi.

Mwangi, M. Z. (2016). *The 2016 National Micro, Small And Medium Establishment (MSME)Survey.* Nairobi: KNBS.

Naoko Nemoto, M. K. (2019). *Digital innovation can improve financial access for SMEs.* G 20 2019 Japan, T 20 Japan 2019.

Ndungu, C. (2015). *The effect of alternative banking channels on financial performance ofcommercial banks.* Nairobi.

Nehemiah, E. (2017). *Risks and opportunities connected to the adoption of internet banking. B*otswana.

Ngumi, P. (2013). *Effect of Bank innovations on Financial Performance of CommercialBanks in Kenya.* Nairobi.

Nyaga, G. (2015). *Effect of Financial innovation on financial performance of commercialBanks in Kenya.* Nairobi.

Nyamoita, O. (2015). *The effect of process innovation on financial performance of utilitycompanies in Kenya : case of KPLC.* Nairobi: Author.

Ochieng. (2019). *Interest Rate Cap Two years on:Outcomes for Kenya"s Economy*.

OECD.(2018, February). Enhancing SME access to diversified financing instrument. *Discussin paper*. Mexico: OECD.

Okoth. (2013). *Challenges of financing small and medium enterprises (SMEs) in Equity Bankbranches.* Nairobi: erpository.uonbi.ac.ke.

Ollows, M. (2015). Relational Transactional Lending. *Journal of emerging issues inEconomics, Finance and Banking (JEIEFB),* Vol: 4 issue 1.

Ollows, M. (2017). *Lending technologies and benefits of small and medium enterpriselending, multiple case study of commercial banks in Kenya.* Nairobi.

Onyiego. (2017). The Effects of Access to finance on Financial performance of SMES in Mombasa County Kenya. *The strategic Journal of Business and Change Management*, 335-346.

Peprah, A. O. (2017). *Ranking the 5 C's of credit analysis: Evidence from Ghana Banking Industry.* Ghana: Author.

Perez, O. (2013). *Commercial Bank Financing For Micro-enterprises in Mexico.* Mexico.

Peter Ndwiga, J. M. (2018). Financial innovation as an alternative delivery channel and financial performance of listed commercial banks in Kenya. *European Journal ofBusiness and Management*, Vol 10, No 17.

Phelistus, O. (2015). *Impact of Product Innovation on Financial Performance of CommercialBanks.* Nairobi.

Raffaelli, G. (2014). *Institutional innovations, Novel, useful and Legitimate.*

Ruchkina, e. (2017). Small and medium enterprises in regional development and innovations. *Journal of international studies*, 259-271.

Scott Frame, L. W. (2018, October). Technological change and financial innovations in banking: some implications for Fintech. *Federal Reserve Bank of Atlanta: WorkingPaper Series*. Federal Reserve Bank of Atlanta.

Shalakha, L. (2012). *Relatioship between financial innovations and the growth of commercialbanks in Kenya*. Nairobi: Author.

Shikumo, D. (2015). *Determinants of Lending to SMEs by Commercial Banks in Kenya.* Nairobi.

Simiyu, H. N. (2017). External financial environment drivers and financial performance of Islamic banks in Kenya. *International Academic Journal of Economics and Finance*, ISSN 2518-2366.

Simiyu, P. N. (2014). Effect of financial innovation and opalization on market size in commercial banks. *International Journal of Economics and Social Science*, Vol 5 No, 8 .

Siran, T. (2017). *Outsourcing and Performance of Commercial Banks in Kenya.* Nairobi.

Tahir, S. A. (2018). Does financial innovation improve performance ?An analysis of process innovation used in pakistan. *Journal of Innovation Economics & Management*, 195-214.

Ti Hu, C. X. (2016). *Competition, Innovation, Risk-taking, and profitability in the Chinesebanking sector*.

Totolo, E. (2018). *The Digital Credit Revolution in Kenya: an assessment of market demand, 5years on.* Nairobi: FSD.

UNDP. (2015). *Micro small and Medium enterprises as suppliers to the extractive industry*. Nairobi.

Wairimu, W. (2015). *Micro Small and Medium Enterprises (MSME) as suppliers to theextractive industry*. Nairobi: UNDP.

Wangui, M. (2016). *Commercial Bank Perception on the Financing of SMEs.* Nairobi.

World Bank Group. (2016). *SME Finance.* Mexico: Author.

Yao, M. (2017, February 1). *Impact of payment technology innovations on traditionalfinancial industry: a focus on china*. Retrieved from Science Direct Web site:https://www,sciencedirect.com

Yordanova, Z. (2013). Innovative Bank Product. *Trakia Journal of Science*, 322-330.

Youshino, W. (2015). SME Internalization and Finance in Asia. ADBI.

APPENDICES

Appendix 1: Letter of Introduction

Date……..

Denise Wandia Julius

Kenyatta University

D53/CTY/PT/38907/2016

To……

…….

Dear Respondent,

RE: Gathering Research Data

I write to request your assistance in gathering data academic research work. My name is Denise Wandia, Business Administration master's student at Kenyatta University School of Business. As a requirement for the course, I am currently carrying out a research on *Bank Financial Innovations on Lending to Small and Medium Enterprises by Selected Commercial Banks in Kenya*''. Having been identified as a respondent for this research work, I humbly request you to fill out the attached questions form which will be collected from your office. The information provided will be for academic use and specifically for this study. Kindly fill the questionnaires within seven days to enable early finalization of the research.

Thank you.

Yours faithfully,

Denise Wandia Julius

Student Registration .No. D53/CTY/PT/38907/2016

Appendix ll: Questionnaire

Questionnaire for Bank's head of; Credit SME banking, Product Innovation, Channel innovations.

Dear Respondent,

This questionnaire serves the purpose of collecting data concerning the effect of financial innovations on lending to small and medium enterprises in Kenya.

PART 1: BACKGROUND INFORMATION

1. Mark gender
   a) Female ☐
   b) Male ☐

2. Indicate length of service in the institution
   a) l -5 years ☐
   b) 6 -l0 years ☐
   c) 10 and above ☐

3. Indicate the unit you head
   a) Head of credit SME banking ☐
   b) Head of product innovation ☐
   c) Head of channel innovations ☐

PART 2:
SECTION 1: FINANCIAL INNOVATIONS

4. Please indicate some of the common financial innovations adopted by your bank in the last 5 years
   a) Business Loan Accounts ☐

b) Business Savings Accounts ☐

c) RTGS ☐

d) ACH ☐

e) Mobile banking ☐

f) Agency Banking ☐

g) Extended banking hours ☐

h) Insurance Agency ☐

5. Do you have specific innovations tailored for SMEs?

a) Yes ☐

b) No ☐

6. If yes in question 5 above, what specific innovations do you have for SMEs?
…….
……..
……..

SECTION 2: FINANCIAL INNOVATIONS AND LENDING TO SMEs

This section has statements about financial innovations and lending to SMEs. Tick (√) the appropriate response in the boxes provided.

Product Innovations	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
	5	4	3	2	1
Increase in savings by majority of SMEs has been attributed to the tailored business savings account.					
Most SMEs can sufficiently service the funds we extend to them.					

Tailoring savings account to specific needs of SMEs has increased number of SME clients.					
Introduction of innovative products has positively impacted on lending to SMEs					
Uptake of innovative products by SMEs has reduced information opacity among SMEs					
Process Innovations	***Strongly Agree***	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
	5	4	3	2	1
Process innovations avails timely funds for use in the business.					
Real time settlements through use of RTGS has led to increased funds transfers by SMEs					
Clearing of cheques within one day through ACH has enhanced SME transaction numbers					
Time taken doing banking by majority of SMEs has been cut as a result of process innovations.					
Use of process innovations provides information that can be used for loan appraisal					
Channel Innovations	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
	5	4	3	2	1
Agency banking has enhanced use of bank accounts leading to more information for appraising SMEs loan facilities.					
Most SMEs have saved on time spent doing banking as a result mobile banking.					
Majority of SMEs have saved on time spent doing physical banking which is attributable to agency banking.					
Channel innovations have availed					

complementary information for use in loan appraisal					
Channel innovations provide convenience and are preferred by SMEs compared to transacting from the bank.					
Institutional Innovations	**Strongly Agree**	**Agree**	**Neutra 1**	**Dis-agree**	**Strongly dis agree**
	5	4	3	2	1
SME only branches help to improve relationship between customer and bank.					
Extended banking hours has enhanced SME banking convenience					
SME only braches improve service to customers					
Extending banking hours has led to increased transactions by SMEs.					
Use of Institutional innovations provides information that is used for loan appraisal					
Regulatory Framework	**Strongly Agree**	**Agree**	**Neutral**	**Disagre e**	**Strongly disagree**
	5	4	3	2	1
Regulatory framework is informed by risks that could arise from use of financial innovations					
The extent of connection between SME's and lending institutions has been intensified by financial innovations.					
Regulatory framework is an impendent to financial innovation supply.					
Regulatory framework provides a framework for risk management and control					
Regulatory framework enhances consumer protection					
Lending to SME's	**Strongly Agree**	**Agree**	**Neutral**	**Disagre e**	**Strongly disagree**
	5	4	3	2	1

The degree of association linking SMEs and banking institutions has been intensified by financial innovations					
Product innovations have increased product uptake which enhances information relied upon during relationship lending					
Financial innovations have enhanced lending to SMEs					
Product innovations increase product uptake which enhances information relied upon during relationship lending					

Appendix lll: Commercial Banks in Kenya

Name of Bank
African Banking Corporation
Bank of Africa
Bank of Baroda
Absa Bank Kenya Plc
NCBA Bank Kenya Plc
Consolidated Bank
Co-operative Bank of Kenya
Diamond Trust
Credit Bank
Dubai Islamic Bank
Eco Bank
Equity Bank (K) LTD
Family Bank
First Community
Guaranty Bank
Guardian Bank
Gulf African Bank
Habib Bank AG Zurich
Kingdom Bank Limited (Kenya)
KCB Bank Kenya Limited
Mayfair Bank
Middle East Bank
National Bank of Kenya
Paramount Universal Bank
Prime Bank
SBM Bank
Sidian Bank
SpireBank
Stanbic Bank
Standard Chartered Bank
Transnational Bank

Source: CBK Directory of Banks

Appendix IV: Time Table Schedule

Work Plan table

Task	**Date**
Research license request	March 2021
Field work	April –May 2021
Data compilation and Analysis	May –June 2021
Chapter 5	July2021
Overall review	August 2021
Submission to Examination	September 2021

Work Plan Schedule

Activity	March2021	April-May 2021	June-July 2021	August-September	October 2021	
Research License Request						
Fieldwork						
Chapter 4.						
Chapter 5						
Presentation to Examination						

Appendix V: Budget

Details	Budget (KSH)
Stationary	3000
Photocopy	14,000
Printing	9,000
Travel	12,000
Airtime	6,000
Internet	20,000
Fieldwork	6000
Publication	20,000
Consultancy	15,000
SPSS Introduction course	15,000
Total	120,000