FINANCING PREFERENCES OF MICRO, SMALL AND MEDIUM ENTERPRISES IN KENYA: A DISCRETE CHOICE EXPERIMENT

Kimani, Stephanie Muthoni - 094202

Submitted in partial fulfillment of the requirements for the Degree of
Bachelor of Business Science Financial Economics
At Strathmore University

Strathmore Institute of Mathematical Sciences
Strathmore University
Nairobi, Kenya

November 2019

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the Research Project contains no material previously published or written by another person except where due reference is made in the Research Project itself.

Stephanie Muthoni,

..... [*Signature*]

10/11/2020 ..... [*Date*]

This Research Project has been submitted for examination with my approval as the Supervisor.

Dr. Jackson Mdoe,

..... [*Signature*]

10/11/2020 ..... [*Date*]

Strathmore Institute of Mathematical Sciences

Strathmore University

ACKNOWLEDGMENT

I would like to express my sincere gratitude to my supervisor, Dr. Jackson Mdoe for providing his invaluable guidance, comments and suggestions throughout the course of this project. I would also like to give a special thanks to Dr. Mary Mutinda who guided me in conceptualizing this project at the beginning and Mr. Elias Kaburu who assisted and advised me through difficulties in completing the project.

I would also like to thank my family for their continued support and prayers that motivated me throughout this period.

Most importantly, I would like to thank the Almighty God for the strength, guidance and perseverance He gave me to complete this journey.

Abstract

MSMEs are universally acknowledged as key drivers of economic growth, due to their significant contribution to production, employment and innovation (Keskin, Senturk, Sungur & Kiris, 2010). However, despite their contribution to economic development, studies found that small firms faced more financial constraints as compared to large firms (Beck, 2007). As a result, governments and international bodies such as the World Bank prioritized implementation of policies and initiatives to boost SME growth. On the other hand, private banks and other financial service providers seized the opportunity to realize profits by expanding their services to the informal sector. Despite these efforts, evidence exist that MSMEs prefer to use informal sources of finance to meet their financial needs and obligations. It is not clear whether this is as a result of preferences or financing constraints. This study adopts the use of both revealed preferences from the 2016 MSME survey by KNBS (Kenya National Bureau of Statistics) as well as discrete choice experiment to elicit financing preferences of MSMEs in Kenya. A choice experiment is administered to a sample of small-scale enterprises in Nairobi to assess how they value a range of financial products. DCE data collected is analyzed using McFadden's conditional logit model with unknown parameters estimated using maximum likelihood procedure. The results from the choice experiment are consistent with revealed preference data collected from the MSME 2016 survey. Conclusively, the study finds that interest rates are the most important attributes followed by form of collateral and speed of accessibility. Moreover, the most preferred source of financing was found to be Mobile banking, SACCOs followed by Commercial Banks. Lastly, the study supports that the Discrete Choice Experiment is effective in studying the financing preferences of small businesses in Kenya due to the convergence of stated and revealed preferences.

TABLE OF CONTENTS

List of Abbreviations

DCE: Discrete Choice Experiment

FinAccess: Financial Access

FSD Kenya: Financial Sector Deepening Kenya

GDP: Gross Domestic Product

KNBS: Kenya National Bureau of Statistics

MPOH: Modified Pecking Order Hypothesis

MSEs: Micro and small enterprises

MSMEs: Micro, small and medium-sized enterprises

POH: Pecking Order Hypothesis

SACCOs: Savings and Credit Co-operatives

SME: Small and medium enterprise

List of Tables

List of Figures

CHAPTER ONE

INTRODUCTION

1.1. Background

1.1.1. Key concepts and definitions

MSMEs are defined as small enterprises with employment size not exceeding 200 employees (OECD, 2005). However, there is no universal definition of MSMEs as different countries have varying definitions of small firms dependent on the economy size and population.

MSMEs are considered to be a heterogeneous group of businesses that operate in the service, trade, agriculture and manufacturing industries (Lukacs, 2005). This is because they are diverse in nature and possess a wide range of skills. They also have different objectives: some MSMEs are innovation-oriented, others are subsistence-based while others are growth-oriented. Small firms also have different forms of ownership, that is, family-owned, sole proprietorship and partnerships. They operate in either the formal sector or informal sector of the economy offering opportunities for employment. MSMEs are labor intensive and offer opportunities not only to skilled laborers but also semi-skilled and unskilled laborers who are excluded from the formal sector.

1.1.2. MSME sector in Kenya

MSMEs in Kenya account for 83.4% of total employment and over 50% of the GDP (Kenya National Bureau of Statistics, 2018). Majority of micro and small enterprises in Kenya operate in the informal sector (Kenya National Bureau of Statistics, 2016).

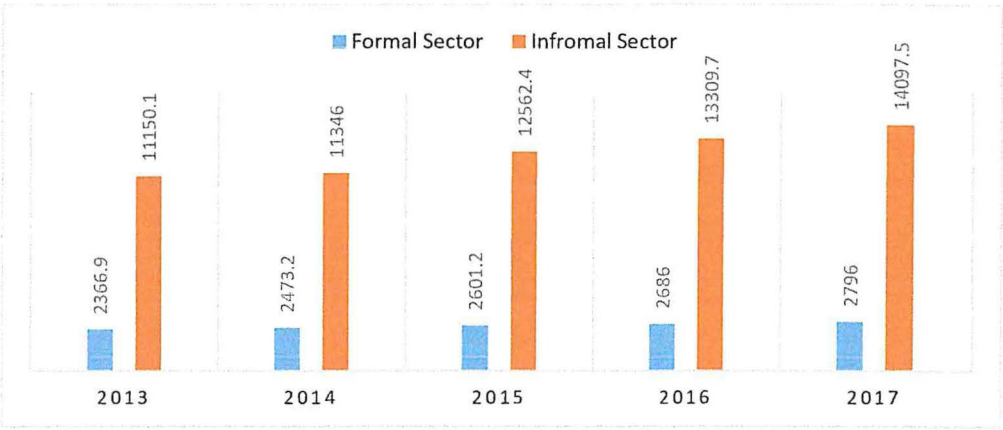


Figure 1: No. of Kenyans Employed by MSMEs in "000" (Economic Survey, 2018)

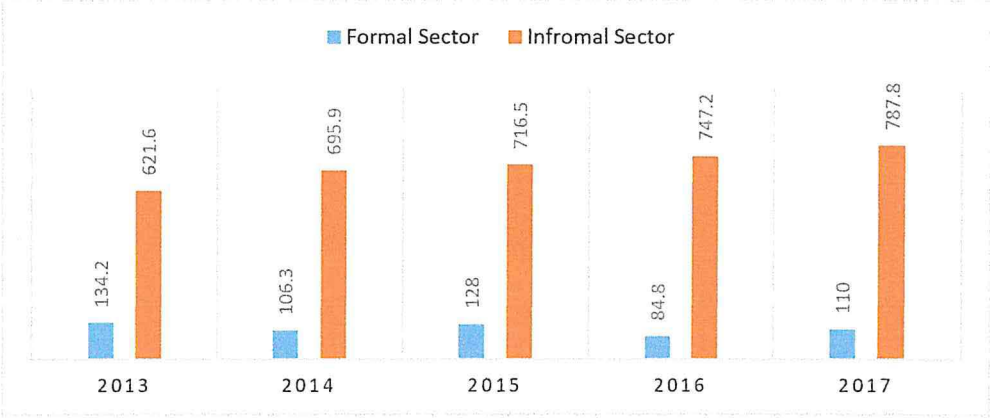


Figure 2: New jobs created by MSMEs in "000" (Economic Survey, 2018)

MSMEs are defined according to employment size, annual turnover and total assets. *Table 1* below summarizes the definition of MSMEs in Kenya according to the micro and small enterprise act No. 55 of 2012.

Table 1: MSE definition (MSE Act No. 55 of 2012)

Type of Enterprise	**Employment Size**	**Annual Turnover**	**Total Assets**	
			Manufacturing Sector	**Service & Agricultural Sector**
Microenterprise	Less than 10 employees.	Less than Kshs. 500,000.	Less than Kshs. 10 Million.	Less than Kshs. 5 Million.
Small Enterprise	10 to 50 employees.	Kshs. 500,000 to Kshs. 5 Million.	Kshs. 10 Million to Kshs. 50 Million.	Kshs. 5 Million to Kshs. 20 Million.

Government of Kenya recognizes the MSME sector as a vital tool in achieving the Vision 2030 goal of becoming an upper middle-income country.

With studies establishing financing constraints as the major barriers to MSME growth, the government implemented policies and initiatives to improve access of small firms to financial services such as credit guarantee schemes as well as public-private partnerships to increase credit financing for MSMEs (Kenya National Bureau of Statistics, 2016).

Other than government interventions, other sources of MSME financing include informal institutions such as micro finance institutions and SACCOs, loans from family and friends as well as formal financial services offered by banking institutions. Majority of micro and small enterprises in Kenya use non formal sources of finance to raise capital and meet short term obligations (Growth Cap & FSD Kenya, 2016).

Table 2: Sources of MSME Financing in Kenya

Government credit schemes	**Digital loan apps**	**Formal financial institutions**	**Mobile Banking**	**Semi-formal institutions**	**Social networks**	**Bootstrap financing**
Uwezo fund, Youth enterprise development Fund.	Tala & Branch.	Banks, insurance firms, investment firms, capital Markets.	M-shwari, M-Pesa, KCB M-Pesa.	Micro Finance institutions and SACCOs	Chamas, friends and family	Self-financing or operating revenues

1.2. Problem Statement

Despite the increasing efforts to expand formal financial services to the informal sector, MSMEs prefer to use informal financial services to meet their financial needs and obligations (Growth Cap & FSD Kenya, 2016). A survey conducted by FSD Kenya to understand how entrepreneurs finance their business noted that whereas there was an increased use of bank financing by MSMEs, informal sources of finance were still dominant means of financing by micro and small-scale enterprises. It is not clear whether the financing behavior of MSMEs is as a result of preference or limited access to formal finance (Osei-Assibey, Bopkin, & Twerefou, 2012).

There are limited studies on the financial behavior of MSMEs in Kenya and theoretical models to study financing behavior are consistent only when dealing with large firms. The gap presented is that banks and other formal financial service providers lack the understanding of the informal sector, specifically the needs of MSMEs and this is a hindrance to the growth of financial services offered to the informal sector.

1.3. Research Questions

a) What attributes of financial products are important to MSMEs?

b) What is the relationship between financial product attributes and MSMEs preferences for working capital?

1.4. Research Objectives

a) To establish the attributes of financial products that are important to MSMEs.

b) To establish the relationship between financial attributes of financial products and MSMEs preferences for working capital.

1.5. Scope of Research

This study adopted the use of discrete choice experiment to assess preferences of MSMEs for financial products. The target population for the study was a small sample size of micro enterprises in Nairobi working in different sectors. The study aims to identify preferred financial products for the enterprise for the purpose of funding short-term working capital. Due to a wide range of MSME financing available in Kenya, a multi-attribute valuation model is preferred hence the decision to use DCE. Another advantage of using the DCE model is that, the experiment requires respondents to select the most preferred alternative from a set of choices, which is consistent with real life situations.

1.6. Significance of Research

One of the fundamental presumptions for consumer behavior research is that individuals buy products not for their main function but for their subjective value (Snoj, Korda, & Mumel, 2004). Studying consumer behavior and preferences is important for firms, in order to understand the needs and motivations of their consumers. This study offers insights to financial service providers on the financial needs of MSMEs in order to create financial products that add value to small businesses. It provides a link between the supply side and demand side, by providing an understanding of small firms and their financing behavior and decisions. This study provides context on the use of DCE for eliciting financial preferences whereas the method was only used in the health sector and consumer preferences for goods (Mangham, Hansen, & McPake, 2009).

Furthermore, the study goes beyond the conventional practice of studying the capital structure of a firm to investigate its preference among financing options available. This is because, MSMEs in developing economies are diverse and are presented with a wide range of financing options, both formal and informal.

CHAPTER TWO

LITERATURE REVIEW

2.1. Theoretical Literature Review

This section reviews three main existing theories that explain the financing preferences of firms and how they are related to each other.

2.1.1. Pecking Order Hypothesis

The pecking order hypothesis (Myers, 1984) is the most prominent theory used to study financing preferences of firms. The theory was developed much earlier in 1961 by Donaldson but the study conducted by Myers was more popular. The theory was developed to study the capital structure of firms, that is, the debt to equity financing. The underlying assumptions for the pecking order hypothesis are: a firm's value is not affected by its capital structure and it states that firms prefer internal financing to external financing, and if external finance is required, debt is preferred to equity (Myers, 1984). According to this study, management is characterized to have risk aversion due to their over reliance on internal sources to cushion the firm against capital market forces. The POH has a large R-squared, therefore, is sufficient in explaining financing behavior of firms. Myers (1984) modifies the POH to include new assumptions: Safe debt is preferred to risky debt and information asymmetry is the reason why internal financing is preferred not risk aversion. This is known as the **Modified Pecking Order Hypothesis**. In the study, it is established that the MPOH is a good predictive model for financing preferences of firms as it is consistent with real life situations. According to the study the limitation of this hypothesis is that it does not have a clear reason for when and why firms choose equity financing.

2.1.2. Static Trade-off Hypothesis

Another school of thought on studying capital structure of firms is the static tradeoff theory (Myers, 1984). According to the static tradeoff framework, a firm is viewed as setting a target debt to equity ratio and gradually moving towards it. The optimal capital structure (debt ratio) of the firm is determined by a tradeoff between costs and benefits of borrowing, holding assets and investments constant. Optimal target debt ratio is established at point where marginal costs equal marginal benefits of borrowing.

This infers that companies with more taxable income to shield have higher debt ratios and unprofitable companies rely more on equity financing. However, Myers (1984) points out that the trade-off theory cannot explain real life capital structure phenomenon that most profitable companies generally thrive with little debt. Furthermore, the study established that the theory has a low R-squared, hence poor in explaining financing behavior.

Further studies were conducted to compare the two models of capital structure (Meyers & Shyam-Sunder, 1994). Empirical analysis showed evidence that the pecking order model had a greater explanatory power than the static tradeoff model. Why? Pecking order is important because it signals the public on how a firm is performing. If a company finances itself internally, it means it is profitable; if a company finances itself through debt, it is a signal that the company can meet its short-term obligations (Tarver, 2018).

2.1.3. Financial Growth Hypothesis

Berger and Udell (1998) examine the financing of small firms using a financial growth paradigm, with different optimal capital structures at different stages of the growth cycle. The life cycle model showed variations in capital structure of a small business with the firm's size and age. This model aimed to identify mode of financing at various stages of the firm's growth. This was due to growing interest of macroeconomic implications of small firms and the Dotcom boom whereby, tech startups grew rapidly (Berger & Udell, 1998). However, the study notes that the growth paradigm does not fit all small businesses. The study concludes that small firms depend more on personal finances of owner and insider funding as compared to large firms. It also finds that small firms prefer private equity and debt as external sources of finance as compared to public debt or equity. Furthermore, financing preferences of small firms could be as a result of information asymmetry.

Abdulsaleh & Worthington (2013) conduct a study on existing literature on SME Financing and give insights on factors determining financing behavior of small firms. These characteristics include, the size and age of the firm, sector of operation as well as owner's attributes. Consistent to the financial growth paradigm model, younger firms are expected to be reliant on external sources of finance whereas older firms are reliant on internal sources of finance. In regard to sector of operation, empirical analysis shows that firms in the manufacturing sector are more capital intensive as compared to firms in other sectors, because they depend on fixed assets.

As a result, firms in this sector are more likely to depend on debt financing.

The rigid structure of the financial industry at the time, may explain the reason why all models focused on debt vs equity financing of firms (Beckett, Hewer, & Howcroft, 2000). According to Beckett, Hewer & Howcroft, the pre-financial liberalization era offered limited financial products to consumers, therefore, they had similar buying patterns. However, deregulation of the financial sector led to rapid growth of the financial sector and emergence of new forms of technology. As a result, consumers were more disposed to explore different financial products, hence the increased interest in studying consumer behavior in financial services.

2.2. Empirical Literature Review

Gebru (2009) conducted a study to identify financing preferences of MSE owners in Tigray, Ethiopia. The purpose of the study was to investigate determinants of financing preferences of MSEs owners in Tigray and whether the results conformed to the POH. The methodology adopted by this study was both descriptive and experimental. The study administered structured questionnaires to 120 MSEs in six zonal towns of Tigray state. A logistic regression was used to empirically test the literature - driven hypothesis. The study found that POH held true for MSE owners in Tigray. It was evident that as education level of owners decreased, there was less intrusion in form of ownership. Furthermore, factors such as ownership type, acquisition type, level of education of the owner/s and reason for business startups are found to be major determinants of MSE owners' financing preferences (Gebru, G. H., 2009). The limitation of this study was that it was conducted in only one state in Ethiopia, therefore, the conclusions cannot be generalized to the Kenyan context due to heterogeneity of the MSMEs in both regions.

Padachi, Howorth & Narasimhan (2012), investigate the approach of SMEs in the Mauritian manufacturing sector to working capital finance using a survey-based approach and use of case studies. The methodology adopted in the study was a parametric and non-parametric technique to examine important variables that affect financing preferences. The findings of the study confirmed that SMEs prefer informal sources of finance and debt financing to meet their financial needs. The firms' financial needs were predominantly short term. The results of this study partially conform to the POH model, as owners of firms were afraid of losing control of their enterprises thus reluctant to use equity financing. The strength of this study is that it investigated variables that affect financing preferences of the firm such as individual characteristics of the firm as well as purpose for financing, that is, short term working capital.

In Ghana, a study was conducted on Microenterprise financing in the rural financial markets (Osei-Assibey, Bopkin, & Twerefou, 2012). The purpose of the study was to examine determinants of financing preferences of MSEs in Ghana while distinguishing a broader range of financial sources than what is usually studied in the spectrum of corporate finance. The study adopted the ordinal logistic regression framework. Furthermore, the study examined whether evidence existed on hierarchical preference ordering as predicted by the POH using field survey data. The findings of the study was that new businesses were more likely to prefer low cost and less risky financing sources such as internal or bootstrap finances. On the other hand, as businesses became more established, they were more likely to seek formal financing. The results conformed to the POH, however, the authors argued that the preference order was as a consequence of financing constraints rather than preference. The study also found that characteristics of the MSME owner such as gender, age or education were important determinants of financing preferences.

2.3. Overview of Literature

Main findings from empirical studies show that individual characteristics of firms are key determinants of financing preferences of MSMEs. Furthermore, empirical studies conform to the POH that states firms are risk-averse, thus it is evident that firms prefer internal financing to external financing and debt to equity financing.

Traditional models of determining a firm's capital structure, are not applicable to MSMEs in developing countries. This is because, they focus on two sources of financing, that is, debt vs equity, whereas MSMEs in developing countries have a wide range of financing from informal sources, formal sources as well as bootstrap financing. Moreover, they do not consider financial constraints faced by MSMEs in developing countries as in the case in Ghana (Osei-Assibey, Bopkin, & Twerefou, 2012). This study aims to bridge this gap by adopting the use of a discrete choice experiment, which allows for the study of multi attributes of a variable in this case, the financial products offered to MSMEs. Moreover, the use of attribute levels to identify preferred financial products enables the study to identify characteristics of financial products determining financial preferences of MSMEs.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Research Design

The aim of the study was to establish financing preferences of MSMEs by examining the relationship between attributes of a financial product and the financing options selected by businesses. The study adopted both an experimental and descriptive design. The descriptive research design was conducted to observe revealed preferences, that is, financing choices selected by MSMEs. This was achieved by observing results from the questionnaires administered to the 25 MSMEs under study as well as actual data from the 2016 MSME survey conducted by KNBS on 20,000 businesses. On the other hand, the experimental design was conducted to study the effects of characteristics of financial products on the financing preferences of MSMEs. This was achieved by administering a discrete choice experiment to the targeted sample of 25 MSMEs.

The following steps were taken to develop the choice experiment: Selecting attributes, assigning attribute levels and designing choice sets. The study examined secondary data from the MSME survey (2016) and the FinAccess household survey (2019) in order to select the most relevant attributes of financial products. The attributes in consideration were: Channel (source) of financing, interest rates, form of collateral and speed of accessibility. The attribute levels assigned were based on features of existing financial products in the market. The scenario under consideration in the experiment was to study how the respondents selected financing options to meet their short-term working capital needs. *Tables 3, 4* and *Appendix 2* summarizes the design of the discrete choice experiment. The study used cross-sectional data, that is, the financing options selected by the MSMEs at the time of the experiment.

3.2. Theoretical Framework

This study examined the application of discrete choice experiments in eliciting financing preferences of MSMEs. This section reviews theoretical and empirical studies that focus on Discrete Choice Experiment. DCE is a type of stated preference technique used to measure consumer preferences. A simpler definition of DCE is that it is a quantitative method used to measure consumer preferences (that is, attributes of products that they value most) by asking them to choose among a set of alternatives rather than to directly ask them to select a preferred attribute.

The advantage of stated preference techniques is that it allows researchers to quantify consumers' economic valuation of a public and private good or service (Merino-Castello, 2003), in this case, financial products and services.

DCEs have been frequently applied in health economics, with comparatively few applications of the method elsewhere (Mangham, Hansen, & McPake, 2009). Ewing & Sarigollu (2000), use a discrete choice experiment to assess preferences for clean-fuel vehicles versus the conventional vehicles. Wonder, Wilhelm & Fewings (2008) use a discrete choice experiment to identify consumer preferences for automobile loan attributes (This study heavily adopts the methodology used in this paper as it similarly studies loan preferences but for individuals not firms). There is no evidence of the use of DCE in financing preference of firms. The aim of this study was to examine the applicability of discrete choice experiment in studying financing preferences of firms. DCE is a multi-attribute valuation technique, allowing for the study of a wide range of attributes of financial products. It allows respondent to select only the most preferred choice, which conforms to real world situations. The stated reasons make it a suitable method for conducting this study.

The underlying validity of a discrete choice experiment depends on the ability of the researcher to select relevant attributes for the population under study. It is important to understand the target population's perspective and experiences in order to select and define the attributes (Mangham, Hansen, & McPake, 2009). As a result, the study focused on the 2016 MSME survey and the FinAccess household survey (2019) to identify key attributes of financial products that determine use of the financial product by households e.g. affordability.

DCE data is analyzed based on a random utility framework, which proposes that utility for respondent i conditional on alternative j can be decomposed into a deterministic component, V and a stochastic component, $\mathcal{E}$ (Merino-Castello, 2003):

(1) $Uij = Vij + \mathcal{E}ij$

The deterministic component is a function of attributes of alternatives and characteristics of respondent and can be modelled as:

(2) $Vij = Xij\beta + Zi\gamma$

Where Xij is the vector of attributes of the j^{th} alternative as perceived by the i^{th} individual and Zi is a vector of characteristics of individual i. β and γ are vectors of coefficients to be estimated.

McFadden's conditional logit model is used to estimate the values which respondents placed on attribute levels because the experiment depended on a random utility framework (Merino-Castello, 2003). The underlying assumption is that individuals will consider tradeoffs between different attribute levels and choose alternatives that maximize their utility (Viney, Lancsar, & Louviere, 2002). Deriving the McFadden's conditional logit, the probability of respondent *i* choosing alternative *j* is written as:

(3) $Pij^* = Pr\ (Uij^* > Uij) = Pr\ (\mathcal{E}ij - \mathcal{E}ij^* \sigma Xij^* \beta j - Xij\beta j)$

Where Pij^* is the probability that respondent *i* chooses alternative j^*. If the stochastic component is assumed to be identically and independently distributed according to the extreme value type 1 distribution:

(4) $Pr\ (\mathcal{E}ij\ \sigma t) = exp\ [-exp\ (-t)]$

Then, the choice probabilities take the following form (Merino-Castello, 2003):

(5) $$Pij* = \frac{\exp(X_{ij} * \beta_j)}{\Sigma \exp(Xij\beta j)}$$

From the above probability, we calculate the likelihood function:

(6) $$L_i = \Pi \frac{\exp(Xij*\beta j)}{\sum \exp(Xij\beta j)}$$

The aggregated likelihood function will appear in this form:

(7) $$L = \Pi_n \Pi_j \frac{\exp(Xij*\beta j)}{\sum \exp(Xij\beta j)}$$

Equation (7) is the maximum likelihood function to be estimated.

3.3. Empirical Model

The study used the multinomial logit model which is a generalized form of the McFadden conditional logit reviewed in the framework above to estimate the study parameters shown below.

Revisiting relevant equations used in this study:

(1) $Uij = Vij + \mathcal{E}ij$

Where:

Uij = utility that MSME *i* derived from selecting financing option *j* where $i = 1,..,\ 25$ represents the MSMEs that were surveyed and $j = 1,..,\ n$ represents the choices that were generated by the discrete choice experiment.

Vij = characteristics of MSMEs, such that:

(2) $Vij = Xij\beta + Zi\gamma$

Where:

Xij = vector of attributes of the j^{th} alternative as perceived by the i^{th} MSME and Zi is a vector of characteristics of MSME i. β and γ are vectors of coefficients to be estimated.

The multinomial logit model estimates the maximum likelihood function as shown in **equation 7:**

$$L = \Pi_n \Pi_j \frac{\exp(Xij * \beta j)}{\sum \exp(Xij\beta j)}$$

βj was interpreted as the effects of the financial attributes on the probability of an MSME selecting a given financing option in the experiment.

3.4. Definition and Measurement of Variables

The variables of interest in this study were the attributes selected to represent financing sources: channel, interest rates, speed of accessing funds and collateral. Table 3 below defines the variables of interest in this study. Furthermore, Table 4 summarizes the attribute levels that were used to run the discrete choice experiment. The study estimated the utilities of each attribute using a choice-based conjoint analysis based on the random utility framework given by the equation 1 in the section above.

Table 3: Selected attributes for DCEs

Attribute	**Description**
Channel or source of financing	This refers to banks, SACCOs, mobile banking.
Form of Collateral	Collateral required by financiers e.g. title deeds.
Interest rates	Interest charged on loans
Speed and ease of accessing funds	Time taken to disburse funds

Table 4: Attribute levels

Attributes	**Attribute Levels**				
Channel	Banks	Mobile Banking	Digital loan apps	SACCOs	Microfinance
Form of Collateral	Title deeds or logbooks.	None	None	Title deeds or logbooks and must be a member of SACCO.	Title deeds or logbooks.
Interest rates	12 – 15%	7.5%	20 – 40 %	12 – 15%	9 – 13%
Speed of accessing funds	2 – 3 days	Immediately	3 hours	1 – 2 days	1 – 2 days

3.5. Population and Sampling

The study selected 25 MSMEs operating within Nairobi in different sectors. The study used purposive sampling in order to ensure the sample was heterogeneous, that is, representative of different characteristics such as gender, level of education and sector of operation, with the aim of observing if their differences were reflected in the financing options selected during the experiment. Furthermore, in order to compare results from the experiment (stated preferences) with actual data (revealed preferences), the study used data collected from 20,000 businesses sampled in the 2016 MSME survey conducted by KNBS.

3.6. Data Sources

Primary data was collected using a survey administered to 25 MSMEs. The survey adopted both a descriptive design (in form of a questionnaire) and an experimental design (in form of the discrete choice experiment). The study also used secondary data from the 2016 MSME survey as well as findings from the Entrepreneurs' survey (Growth Cap & FSD Kenya, 2016). The studies named highlighted key attributes of financial products that determined the use of a financial product by households e.g. affordability, interest rates, form of collateral, channel of financing, ease of access and speed of accessing funds.

The studies above informed the design of the choice experiment by allowing this study to establish the most relevant financial attributes to use. Furthermore, the study used secondary data from the 2016 MSME survey issued by KNBS to observe revealed financing preferences of the businesses surveyed and compare the results with the results from the choice experiment.

3.7. Data Analysis

The first objective of the study was to determine the attributes of financial products that are important to MSMEs when selecting financing options. This was achieved by use of the choice based conjoint analysis which estimated the utilities derived from each financial attributes studied in the experiment by the MSMEs.

The second objective of the study was to study the relationship between the attributes and the financing preferences of the MSMEs. The causal relationship of the attributes to the financing choice selected by each MSME was estimated using the multinomial logistic regression.

The final objective of the study was to measure the effectiveness of the DCE in estimating financing preferences of MSMEs. This was done by use of hypothesis tests and goodness-of-fit of model used to estimate the predictive power of the model and significance of the attributes or variables used in the experiment.

3.8. Ethical Considerations

Ethical considerations in the field of research specifically, in conducting research experiments are of utmost importance to ensure that respondents are not in any way harmed by the research. Key ethical considerations observed by this study were:

a) Voluntary participation of respondents.
b) Ensuring informed consent of respondents.
c) Confidentiality and privacy of information, that is, data was collected anonymously and was not shared to second parties.

CHAPTER FOUR

RESEARCH FINDINGS

4.1. Descriptive Data

The table below shows the descriptive summary of the MSMEs surveyed in this study. A total of 25 MSMEs were surveyed but 5 of the respondents were dropped due to missing data that was relevant to the study.

Table 5: Descriptive statistics

Descriptive statistics (Qualitative data):					
Variable	No. of observations	No. of categories	Categories	Frequency per category	Relative frequency per category (%)
Gender	20	2	Female	11.000	55.000
			Male	9.000	45.000
Sector	20	4	Hotel sector	6.000	30.000
			I.T	6.000	30.000
			Other	2.000	10.000
			Wholesale & retail	6.000	30.000
Ownership	20	4	Corporation	2.000	10.000
			Limited Liability	4.000	20.000
			Partnership	2.000	10.000
			Sole Ownership	12.000	60.000
Education	20	4	Diploma	6.000	30.000
			High school	2.000	10.000
			Masters/ PhD	4.000	20.000
			Undergrad	8.000	40.000

Furthermore, this study conducted a survey to identify financial accounts or services used by the MSMEs as a measure of financial sophistication, shown in *figure 3*. The survey also required the MSMEs to rate different financial products / channels from undesirable to very desirable as shown in *figure 4*. This identified stated preferences of the MSMEs under survey and would serve as a comparison to revealed preferences from the MSME survey of 2016.

From the results in *Figure 3* below, it was concluded that majority of the MSMEs conducted most financial services using mobile banking and commercial banks.

Only 30% of the businesses had an insurance cover and only 1 MSME had registered stocks (indicative of a high level of sophistication). At least 20% of the MSMEs used SACCOs or Microfinance institutions to access financial services.

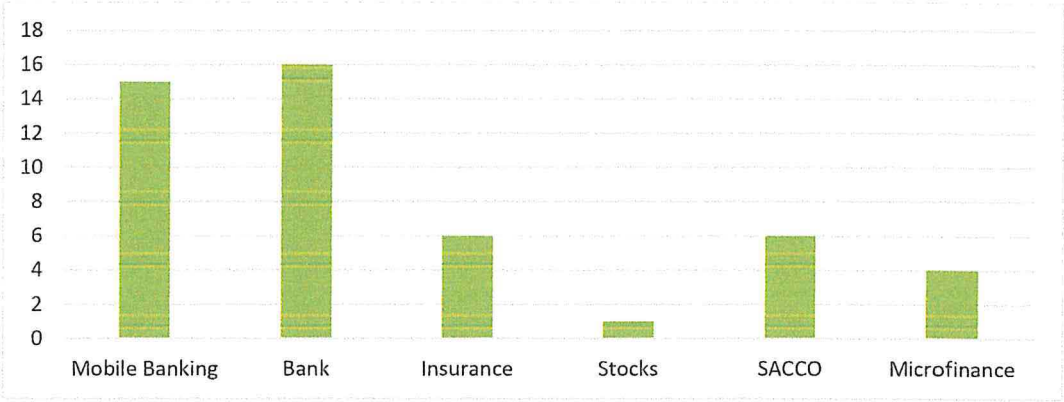


Figure 3: Financial accounts/ services used by MSMEs

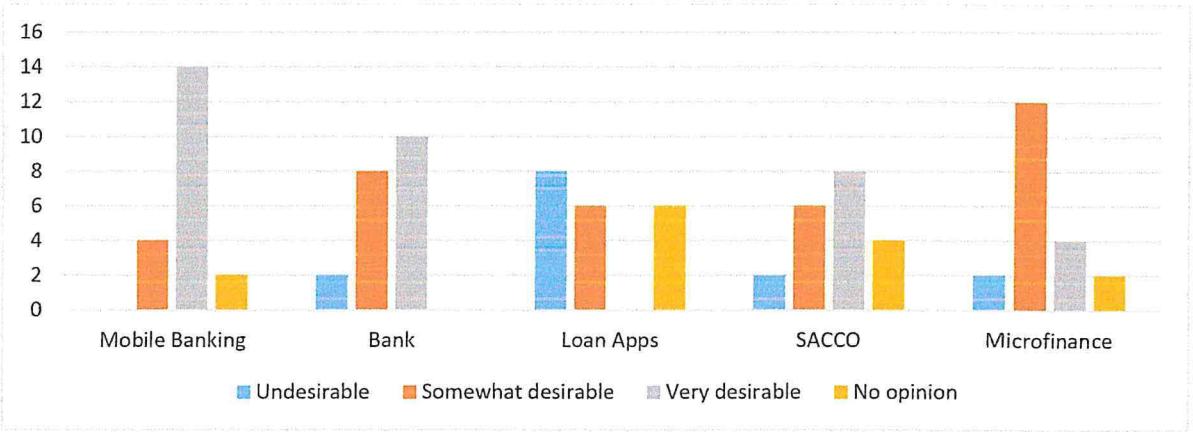


Figure 4: Rating of financing channels

The results from the above *figure 4,* indicated that the most desirable financing sources to MSMEs were Mobile Banking at 70% followed by Commercial banks at 50% and SACCOs at 40%. The least desirable financing channel was digital loan apps as rated by 40% of the respondents (MSMEs). Microfinance was rated somewhat desirable by 60 % of MSMEs.

4.2. Diagnostic Test Results

4.2.1. Discrete Choice Experiment Results

The discrete choice experiment was conducted in two phases, each a month apart. The first phase involved fifteen interviewees, and the second ten. Out of the twenty five responses, five (collected in the first phase) were dropped due to missing data that was relevant to the study. The data collected from the two choice experiments were analyzed separately: the first batch was analyzed using XLSTAT-Conjoint and the second using Sawtooth Software. This was to account for inconsistencies in results arising from the time difference in the experiments. The first step was to conduct a choice-based conjoint analysis to evaluate utilities assigned by respondents to each attribute level. The second step involved the multinomial logistic regression, which gave further information on the accuracy of the model as well as estimating the maximum likelihood function.

4.2.1.1. Choice-based Conjoint Analysis

The results from the choice-based conjoint analysis (First batch) conducted by XLSTAT - Conjoint are shown in *Table 6* below. The objective of this analysis was to determine the attributes of financial products that are important or most valued by MSMEs. A higher utility indicates that the given attribute is considered very important or preferred to MSMEs. *Appendix 7* summarizes aggregate utilities derived from each financial attribute. Based on the results, the studies concluded that according to the first group of MSMEs surveyed, the most important attribute of a financial product is the speed of accessing funds at 40.7% followed by the channel of financing at 23.1% and interest rates at 22.1%. The least important characteristic of a financial product to the MSMEs was the form of collateral at 14.1%. On the other hand, *Table 6* analyzed the utilities derived at the attribute levels. The results of the utilities derived from each channel of finance was consistent with the results from *figure 4* in the previous sub-section. Mobile banking, SACCOs and commercial banks had the highest utility, therefore are considered important channels for financing, whereas digital loan apps had the lowest utility, thus least important financing channel. Furthermore, lower interest rates have higher utilities, therefore, considered to be a very important aspect of financial products preferred by MSMEs. Similarly, the results show that MSMEs prefer no forms of collateral as compared to title deeds or log books. Lastly, MSMEs value the speed of accessing funds as an attribute of financing options. The faster the speed, the higher the utility derived from the given financial product.

Table 6: Aggregate Utilities and Standard deviations of Attributes

Attributes	**Utilities**	**Standard Deviation**
Channel-Bank	0.046	0.255
Channel-Digital loan Apps	-0.465	0.324
Channel-MFIs	-0.233	0.303
Channel-Mobile banking	0.432	0.436
Channel-SACCO	0.219	0.359
Rates-0.075	0.296	0.400
Rates-0.09	0.384	0.325
Rates-0.11	0.070	0.429
Rates-0.13	-0.279	0.580
Rates-0.15	-0.472	0.298
Collateral-30% deposit	-0.019	0.298
Collateral-None	0.282	0.416
Collateral-Title deeds	-0.263	0.229
Speed-1 to 2 days	0.070	0.274
Speed-2 to 3 days	-0.947	0.284
Speed-3 to 24 hours	0.631	0.301
Speed-Instant	0.246	0.458

Table 7 shows the results of from the second group of MSMEs surveyed. The results on utilities derived from each attribute are consistent with the results from *Table 6.*

Table 7: Aggregated Utilities: Sawtooth Software

Attributes	Attribute Levels	Total Utility	Average Utility
Channel	Bank	-25.88397721	-2.588397721
	Loan Apps	-251.4519298	-25.14519298
	SACCOs	139.8270197	13.98270197
	Mobile Banking	133.4923262	13.34923262
	Micro Finance	4.016561191	0.401656119
Interest Rates	7.50%	400.4162534	40.04162534
	9%	688.5195639	68.85195639
	11%	-162.8918666	-16.28918666
	13%	-396.3933759	-39.63933759
	15%	-529.6505748	-52.96505748
Collateral	Title deeds/ Log books	-371.8203461	-37.18203461
	30% Deposits	-229.5911145	-22.95911145
	None	601.4114606	60.14114606
Speed of accessibility	Instant	121.1440408	12.11440408
	3 to 24 hours	130.824665	13.0824665
	1 to 2 days	89.48009669	8.948009669
	2 to 3 days	-341.4488025	-34.14488025

In addition, the analysis of the second group of MSMEs ranked the attributes according to the level of their perceived importance to the individual respondents as shown in *Table 8* below.

Table 8: Summary of Importance of Attributes

Observations	Importance of Channel	Importance of Interest Rates	Importance of Collateral	Importance of Speed of Access
Individual 1	0.1597	0.2581	0.4104	0.1718
Individual 2	0.0579	0.3764	0.3961	0.1696
Individual 3	0.1040	0.3857	0.3883	0.1221
Individual 4	0.0939	0.3166	0.2589	0.3306
Individual 5	0.3185	0.3240	0.2827	0.0749
Individual 6	0.3464	0.2226	0.2970	0.1339
Individual 7	0.0945	0.4227	0.2648	0.2180
Individual 8	0.0675	0.3660	0.1260	0.4405
Individual 9	0.0330	0.4683	0.1815	0.3172
Individual 10	0.0756	0.2398	0.3203	0.3643
Average Importance	***0.1351***	***0.3380***	***0.2926***	***0.2343***

From the results above, the study concluded that, Interest rates was the most important attribute to the MSMEs at 33.8%, followed by the form of collateral and speed of accessibility at 29.26% and 23.43% respectively. The financing channel was the least important attribute to the MSMEs at 13.51%. The results on importance of attributes to MSMEs in the second survey are inconsistent with the results from the first survey conducted.

4.2.1.2. Multinomial Logistic Regression

The following were the results obtained from the multinomial logit model for the first batch of respondents. The *Tables 9 and 10* below gave indicators on the quality of the model, that is, the goodness of fit.

Table 9: Goodness of fit: First Batch

Goodness of fit statistics (Variable Q_ID)		
Statistic	Independent	Full
Observations	360	360
Sum of weights	360.000	360.000
DF	359	315
-2 Log(Likelihood)	1657.861	1657.573
R^2(McFadden)	0.000	0.000
R^2(Cox and Snell)	0.000	0.001
R^2(Nagelkerke)	0.000	0.001
AIC	1675.861	1747.573
SBC	1710.836	1922.448
Iterations	0	12

The R-squared values converge to zero, therefore the study infers that the model has no predictive information about the outcome, thus is not a good fit. Further analyzing the results from *Table 10,* the P-values are equal to 1, therefore, the study concludes that the variables in this model are insignificant in explaining the dependent variable.

Table 10: Hypothesis Test - First Batch

Test of the null hypothesis H0: Y=0.100 (Variable Q_ID):			
Statistic	DF	Chi - square	Pr > Chi^2
-2 Log(Likelihood)	36	0.288	1.000
Score	36	0.288	1.000
Wald	36	0.288	1.000

The following results were obtained from the multinomial logit model for the second batch of respondents:

Table 11: Goodness of fit: Second Batch

Goodness of fit statistics (Variable Q_ID)		
Statistic	Independent	Full
Observations	360	360
Sum of weights	360.000	360.000
DF	359	349
-2 Log(Likelihood)	458.290	372.542
R^2(McFadden)	0.000	0.187
R^2(Cox and Snell)	0.000	0.212
R^2(Nagelkerke)	0.000	0.294
AIC	460.290	394.543
SBC	464.176	437.289
Iterations	0	12

The R-squared values for the independent model are zero, however, the R-squared values for the full model (though not significant) are further from zero. Furthermore, the results from the *table 12* below indicate P-values of less than 0.0001. Therefore, the study concludes that this model has partial predictive information on the outcome, and the variables are significant in explaining the dependent variable.

Table 12: Hypothesis Test: First Batch

Test of the null hypothesis H0: Y=0.100 (Variable Q_ID):			
Statistic	DF	Chi - square	Pr > Chi^2
-2 Log(Likelihood)	10	85.748	> 0.0001
Score	10	79.829	> 0.0001
Wald	10	64.258	> 0.0001

The study evaluated the quality of the models by the R-squared values from the goodness-of-fit tests specifically, the McFadden R-squared. The R-squared proposed by McFadden is given by the following equation:

$$R_m = 1 - \frac{L_c}{L_{null}}$$

L_c Represents the maximum likelihood value from the current fitted model and L_0 represents the corresponding value, but for a model with only an intercept and no covariates (also known as a null model). If the model has no predictive power, it will converge towards the null model, therefore, their ration will be equal to 1. As a result, using the equation above, this makes the R-squared zero. In the case the model has significant predictive ability, thus explaining the variation in the outcome, the study recalls the random utility framework mentioned in the methodology. Assuming, a respondent chooses or fails to choose the channel – bank, then Pr (Bank) = 1 for those who selected bank, and Pr (Bank) = 0 for those who did not select bank. In that case, the probability is likely either 1 or 0, therefore, the likelihood value for each observation is close to 1. As a result, the log likelihood value (L_c) will be close to 0. This results in the R-squared value that is close to 1. Using the logic above, the study found that the model used for the first group of respondents (MSMEs) had no predictive information, as its R-squared values were equal to zero, whereas, the R-squared values for the model used for the second group of respondents was significantly greater than zero. Nonetheless, the model used for the second group of MSMEs surveyed was not statistically significant to satisfy the research question in this case. This could be resulting from measurement or response bias from the experiment. It is important to note that a choice experiment requires a lot of time so as to conduct test surveys to inform the final and more accurate experiment.

The study focused on the regression results from the second batch, following the Goodness-of-fit test results. *Table 13* below was useful in understanding the effects of the independent variables on the variable response. The model equation was given by:

$$Pr(Response = 1/(1 + exp(-(1.168 - 22.641 * rates - 0.742 * loanapps + 0.056 * microfinance + 0.177 * mobilemoney + 0.290 * sacco + 1.851 * none - 0.271 * Tdeeds - 0.502 * 2 - 3days + 0.152 * 3 - 24hrs + 0.264 * Instant)))$$

Table 13: Logistic Regression Results

Model parameters (Variable Response):				
Source	Value	Standard Error	Wald Chi-square	Pr > Chi²
Intercept	1.168	0.654	3.192	0.074
Rates	-22.641	5.067	19.969	< 0.0001
Ch_Banks	0.000	0.000		
Ch_Loanapps	-0.742	0.422	3.093	0.079
Ch_MFIs	0.056	0.400	0.020	0.888
Ch_Mobile Banking	0.177	0.392	0.204	0.651
Ch_Saccos	0.299	0.398	0.562	0.453
Coll_30% deposit	0.000	0.000		
Coll_None	1.851	0.311	35.303	<0.0001
Coll_titles/lgbks	-0.271	0.336	0.651	0.420
Sp_1 - 2 days	0.000	0.000		
Sp_2 -3 days	-0.502	0.375	1.797	0.180
Sp_3 - 24 hrs.	0.152	0.352	0.186	0.666
Sp_Instant	0.264	0.357	0.548	0.459

The logistic regression results, show the causal relationship between the attributes of financial products and the financing choices made by MSMEs in this case represented by the probability of a given response.

4.3. Empirical Findings

In this section, the study reviews the findings from the test statistics to establish whether research questions have been answered.

4.3.1. Research Objective One

The first research question was to find out which attributes of financial products are important to businesses or derive the highest value to businesses when selecting financing sources. The importance of attributes was established using the choice-base conjoint analysis that gave utilities derived by MSMEs from each attribute. We compare the utilities results from both groups of respondents (the first and second batches). It was evident from *table 5 and 6* that the aggregate utilities for both groups of respondents were consistent. However, inconsistencies arose with the results on the level importance assigned to each attribute. The results on the level of importance of attributes from the first group of respondents was inconsistent with the results on utility scores (See Appendix 7), moreover, the results contained high standard errors. Therefore, the study ignores the results on importance of attributes from the first group of respondents, and focused on the results generated from the utility scores of the second group of respondents. Furthermore, the results from the logistic regression backed the validity of the model used for the second group of respondents. On this basis, it is evident that the most important attributes of financial products is the interest rates (33.8%) and forms of collateral (29.26%). The study found this to be consistent with findings from the 2016 MSME survey, which ranked the following as constraints for MSMEs to access funds: Lack of collateral by 4.94% of respondents and Interest rates at 10.61% of respondents. Narrowing down to preferred financing channels, the study identified the most valued sources of finance as mobile banking, SACCOs and banks, followed by microfinance institutions. Most respondents were still unsure of their preference for digital loan apps, and 40% ranked it as undesirable. According to the 2016 MSME survey, the most sought after sources of credit were: Banks (46.38%), SACCOs (20%), Microfinance (20%) and Mobile money at 0.75%. It was not clear whether they included mobile banking under the Banking sector (as is done by the Central Bank of Kenya Banking reports, because they are still products of specific banks) or separately, but both results are still convergent. Furthermore, the 2019 FinAccess survey, revealed, that the number of mobile banking users are currently the highest at 79.4% compared to banks at 40.8%.

4.3.2. Research Objective Two

The second research question was to establish the causal relationship between the attributes of financial products and the preferred financing options of MSMEs.

This was examined using the multinomial logistic regression in *Table 13* above. The study estimated the effect of the given financial attributes on response of the MSME using the β estimated. First, the study established variables that were significant in explaining the dependent variable, response. Observing the P-values, the attributes that were significant in explaining response of MSME were: Interest rates, channel – digital loan apps, collateral and speed of accessing funds instantly and between 1 to 3 days. The β for interest rates was -22.641 which indicates that interest rates and the probability of selecting a given financing option are inversely related. This means that the higher the interest rates, the less likely the MSME is to select the given financing option. The β for digital loan apps was -0.742, which indicates an inverse relationship between the attribute level and probability of response. The more likely the financing channel is digital loan apps, the less likely the MSME is to select the given financing option. The β for no collateral was 1.851 and that of title deeds was -0.271. This indicates that the MSME are more likely to select a financing choice if there is no form of collateral involved and the opposite applies when the business is required to submit title deeds or logbooks as forms of collateral. The β for accessing funds immediately is 0.264 while that of 1 to 3 days is -0.502. This indicates that the MSME is more likely to select a financing option that offers a faster disbursement of funds and less likely to select one that requires a longer waiting period before accessing funds. In summary, the study establishes a relationship between the utilities derived from the conjoint analysis and the results from the multinomial logistic regression. Financial attributes with higher utilities have positive betas which indicate that they are positively or directly related to the probability that an MSME selects a given financing option.

CHAPTER 5

DISCUSSIONS

5.1. Summary

This study aimed to establish the financing preferences of MSMEs in Kenya by estimating the value of different attributes to businesses, and the causal relationship between the given attributes and the likelihood of a business selecting the associated financial product. The main theories explaining financing preferences of firms mainly focus on the capital structure of firms, which is limiting in the case of studying MSMEs' financing preferences in developing countries such as Kenya. Conducting the discrete choice experiment had its own limitations, as the study failed to conduct several test surveys to reduce errors and increase accuracy of model. The model used in the first survey lacked any predictive power and variables used in the model were insignificant. However, the model used in the second survey had a better predictive power. Results collected from the choice experiment (stated preferences) were consistent with the actual data (revealed preferences) observed from the MSME survey of 2016 and the FinAccess household survey (2019).

5.2. Conclusions

In conclusion, the study finds that MSMEs attach the most value to the interest rates of a financial product followed the form of collateral associated with the product. The named attributes were observed to be major constraints facing MSMEs in regards to financing, therefore are key in informing financing preferences of businesses.

The study also finds that the causal relationship between attributes of a financial product and the probability that the MSME selects the given financing option depends on the level of utility derived by the MSME from the attribute. The higher the utility of a financial attribute, the higher the effect it has on response of the MSME to the financing option and vice versa. Likewise, the direction of the relationship depends with the sign of the utility, if an attribute has a positive utility to an MSME, then it will have a positive causal effect (directly proportionate) on the probability of response to the given financial product. Similarly, if an attribute has a negative utility value, then it will have a negative effect on the probability of response, that is, it will have an inverse relationship with the dependent variable, therefore, the MSME is less likely to select the associated financial product or option.

5.3. Recommendations

The main objectives of this study depended on the validity of the model used. In this study, the model used in the first survey was lacking in predictive power, however the model used in the second survey had a higher predictive power, though not statistically significant. Following the study, further experiments should be conducted using DCE in establishing financing preferences, over a longer period of time to ensure testing of surveys and model as well as increasing the sample size of MSMEs under study. This will increase quality and predictive power of the model and inform policy makers on the financing preferences of MSMEs, and ways to improve the financial sector in supporting small businesses with relevant financial products.

5.4. Areas of Further Research

This study suggests the following areas of further research:

I. Future research may be aimed at examining the accuracy of DCE in studying financing preferences of firms, by increasing duration of experiment, conducting test surveys and increasing sample size to eliminate errors and increase predictive power of the model.

II. Future research may compare the applicability of the discrete choice experiment in eliciting financing preferences with older theories, to test for research gaps and how the different theories relate to the choice experiment.

III. Further research may study the effects of different characteristics of MSMEs, such as sector of operation, managerial skills instead of the traditional capital structure of a firm.

REFERENCES

Abdulsaleh, A. M., & Worthington, A. C. (2013). Small and Medium-Sized Enterprises Financing: A Review of Literature. *International Journal of Business and Management, 8*(14).

Addinsoft. (2017). *XLSTAT*. Retrieved from XLSTAT by Addinsoft: https://www.xlstat.com/en/solutions/features/conditional-logit-model

Baskin, J. (1989). An empirical investigation of the pecking order hypothesis. *Financial Management*, 26-35.

Beck, T. (2007). Financing constraints of SMEs in developing countries: Evidence, determinants and solutions. *KDI 36th Anniversary International Conference*, (pp. 26-27).

Beck, T., Demirguc-Kunt, A., & Levine, R. (2005). SMEs, Growth, and Poverty: Cross-Country Evidence. *Journal of Economic Growth, 10*, 199-229.

Beckett, A., Hewer, P., & Howcroft, B. (2000). An exposition of consumer behavior in the financial services industry. *International journal of bank marketing, 18*(1), 15-26.

Berger, A. N., & Udell, G. F. (1998). The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle. *Journal of Banking & Finance*, 613-673.

Capital Markets Authority. (2010). *Capital Raising Opportunities for SMEs: The Development of Micro-Cap Securities Markets in Kenya.* Nairobi: Capital Markets Authority.

Daskalakis, N., Jarvis, R., & Schizas, E. (2013). Financing practices and preferences for micro and small firms. *Journal of small business and enterprise development, 20*(1), 80-101.

Evbuomwan, G. O., Ikpi, A. E., Okoruwa, V. O., & Akinyosoye, V. O. (2012, October). Preferences of micro, small and medium scale enterprises to financial products in Nigeria. *Journal of Agricultural Economics and Development, 1*(4), 80-98.

Ewing, G., & Serigollu, E. (2000). Assessing consumer preferences for clean-fuel vehicles: A discrete choice experiment. *Journal of Public Policy & Marketing, 19*(1), 106-118.

Frank, M. Z. (2003). Testing the pecking order theory of capital structure. *Journal of Financial economics, 67*(2), 217-248.

FSD Kenya. (2019). *FinAccess Household Survey.* Nairobi: FSD Kenya.

Gebru, G. H. (2009). Financing preferences of micro and small enterprise owners in Tigray: Does POH hold? *Journal of small business and enterprise development, 16*(2), 322-334.

Growth Cap & FSD Kenya. (2016). *Understanding how Kenyan entrepreneurs grow and finance their businesses.* Nairobi: FSD Kenya.

Kenya National Bureau of Statistics. (2016). *MSME Survey basic report.* Nairobi: Kenya National Bureau of Statistics.

Kenya National Bureau of Statistics. (2018). *Economic Survey 2018.* Nairobi: Kenya National Bureau of Statistics.

Keskin, H., Senturk, C., Sungur, O., & Kiris, H. M. (2010). The Importance of SMEs in Developing Economies. *International Symposium on Sustainable Development.* Sarajevo.

Kuruppu, G. N., & Azeez, A. A. (2016, June). Financing preferences for small and medium enterprise owners of Sri Lanka: Does pecking order theory hold? *Journal of Business & Economic Policy, 3*(2).

Lukacs, E. (2005). The Economic Role of SMES in World Economy, Especially in Europe. *European Integration Studies, IV* (1), 3-12.

Mangham, L. J., Hansen, K., & McPake, B. (2009). How to do (or not to do) ... designing a discrete choice experiment for application in a low income country. *Health policy and planning, 24*(2), 151-158.

McKechnie, S. (1992). Consumer Buying Behaviour in Financial Services: An Overview. *International Journal of Bank Marketing, 10*(5), 4-12.

Merino-Castello, A. (2003). Eliciting consumer preferences using stated preference discrete choice models: contingent ranking versus choice experiment.

Meyers, S. C., & Shyam-Sunder, L. (1994). *Testing static trade-off against pecking order models of capital structure.* National Bureau of Economic research.

Myers, S. C. (1984, July). Capital Structure Puzzle. *Journal of Finance, 39*(3).

OECD. (2005). *OECD SME and Entrepreneurship Outlook.* Paris: OECD.

Osei-Assibey, E., Bopkin, G. A., & Twerefou, D. K. (2012). Microenterprise financing preference: Testing POH within the context of Ghana's rural financial market. *Journal of Economic Studies, 39*(1), 84-105.

Padachi, K., & Howorth, C. (2012, January). Working capital financing preferences: The case of Malaysian small and medium-sized enterprises (SMEs). *Asian Academy of Management Journal of Accounting and Finance, 8*(1), 125-157.

Snoj, B., Korda, A. P., & Mumel, D. (2004). The relationships among perceived quality, perceived risk and perceived product value. *Journal of product & brand management, 13*(3), 156-167.

Tarver, E. (2018, November 5). *Investopedia*. Retrieved from Investopedia: https://www.investopedia.com/ask/answers/052215/does-tradeoff-model-or-pecking-order-play-greater-role-capital-budgeting.asp

Viney, R., Lancsar, E., & Louviere, J. (2002). Discrete choice experiments to measure consumer preferences for health and healthcare. *Expert review of pharmacoeconomics & outcomes research, 2*(4), 319-326.

APPENDICES

Appendix 1

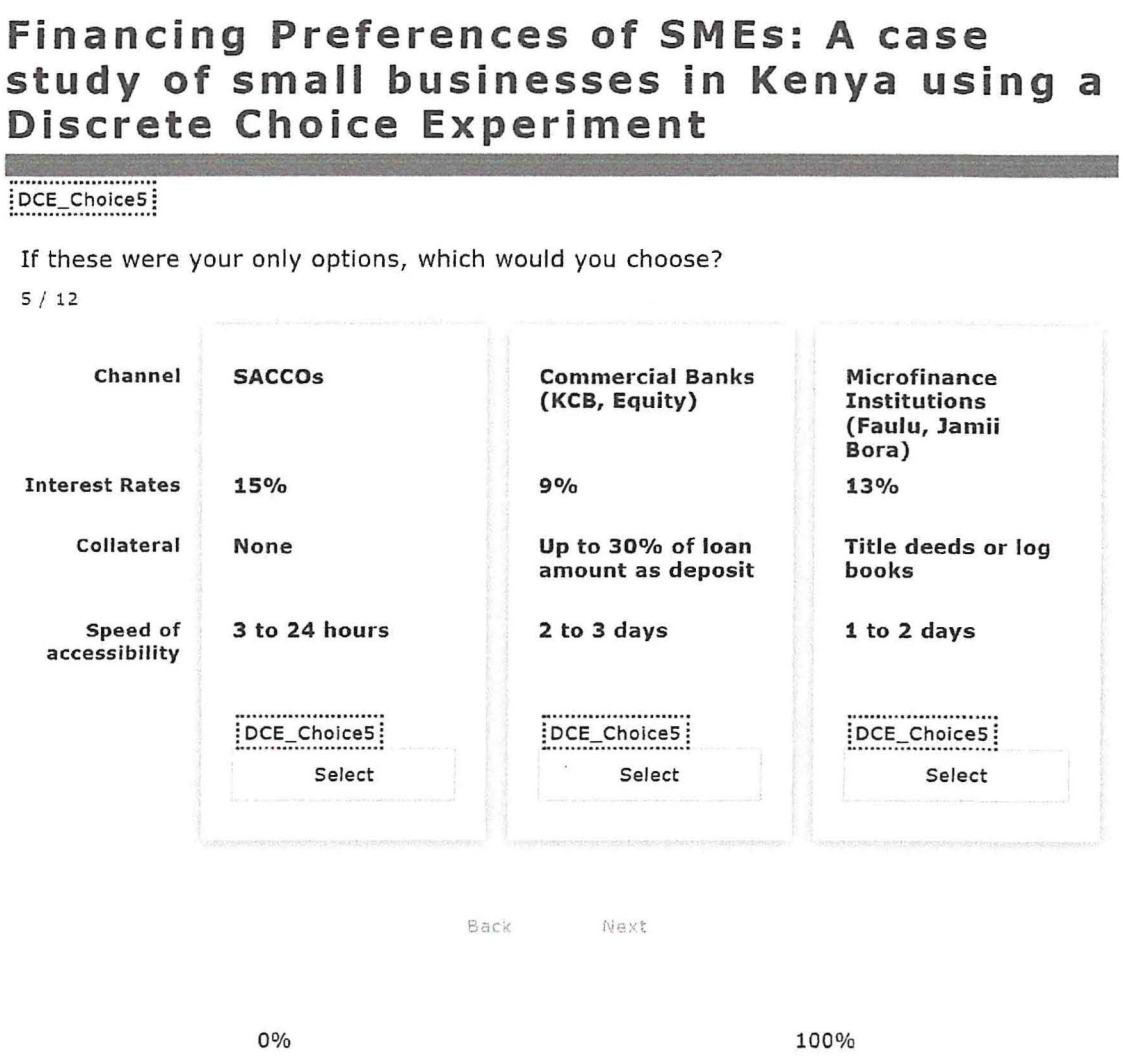
Key reasons for non-use of a financial product (%)

	Banks	SACCOs	Mobile Money	Mobile Banking
Financial situation/affordability	76.7	9.9	0.5	1.1
Service charges	1.3	1.2	37.7	13.7
Convenience/service quality	2.0	6.3	1.0	0.7
Risk of use	N/A	1.2	1.6	2.2
Preference	11.5	27.5	21.4	64.3
Eligibility & identification requirements.	3.2	2.8	16.4	5.3
Literacy	2.1	3.4	0.6	3.1
Trust	0.7	15.1	N/A	N/A
Account/ device	N/A	N/A	18.3	5.7

Source: FinAccess Household Survey (2019)

Appendix 2

A sample of the discrete choice experiments administered to respondents.



Financing Preferences of SMEs: A case study of small businesses in Kenya using a Discrete Choice Experiment

DCE_Choice5

If these were your only options, which would you choose?

5 / 12

Channel	**SACCOs**	**Commercial Banks (KCB, Equity)**	**Microfinance Institutions (Faulu, Jamii Bora)**
Interest Rates	**15%**	**9%**	**13%**
Collateral	**None**	**Up to 30% of loan amount as deposit**	**Title deeds or log books**
Speed of accessibility	**3 to 24 hours**	**2 to 3 days**	**1 to 2 days**
	DCE_Choice5	DCE_Choice5	DCE_Choice5
	Select	Select	Select

Back Next

0% 100%

Appendix 3

Channel individual utilities – Source: Sawtooth Software

Observations	**Banks**	**Digital Loan Apps**	**SACCOs**	**Mobile Banking**	**Microfinance**
Individual 1	-8.5680698	-36.18639072	27.6838946	24.70944386	-7.638877919
Individual 2	-3.0774784	-5.670813404	-4.374145889	17.49658355	-4.374145889
Individual 3	-15.531623	-14.60002757	22.19840375	24.76078497	-16.82753795
Individual 4	21.811343	-6.375157522	-15.73376174	-15.3662117	15.66378795
Individual 5	-3.7816935	-76.59327502	50.79007895	33.51381379	-3.928924217
Individual 6	17.4420776	-107.8152062	30.08914215	30.76188369	29.5221027
Individual 7	-14.266088	-23.63466208	14.1495717	11.41382075	12.33735795
Individual 8	-21.047308	5.952616509	5.878622919	4.645031144	4.571037554
Individual 9	-6.7809169	5.517197951	6.431000707	-2.12673948	-3.040542235
Individual 10	7.91578042	7.953788198	2.714212532	3.683915614	-22.26769676
Total Utility	**-25.883977**	**-251.4519298**	**139.8270197**	**133.4923262**	**4.016561191**
Average Utility	***-2.5883977***	***-25.14519298***	***13.98270197***	***13.34923262***	***0.401656119***

Appendix 4

Interest Rates individual utilities – Source: Sawtooth Software

Observations	**7.50%**	**9%**	**11%**	**13%**	**15%**
Individual 1	34.64	46.70	5.04	-56.53	-29.85
Individual 2	56.79	77.07	-73.48	7.13	-67.51
Individual 3	51.40	82.43	-7.24	-71.85	-54.73
Individual 4	-3.59	67.67	46.14	-58.97	-51.25
Individual 5	28.14	61.98	-10.49	-12.01	-67.62
Individual 6	-4.78	44.88	2.01	2.06	-44.17
Individual 7	73.52	91.14	-36.89	-49.81	-77.96
Individual 8	58.49	80.57	-32.16	-65.85	-41.05
Individual 9	44.48	121.56	-44.32	-55.95	-65.78
Individual 10	61.33	14.52	-11.52	-34.60	-29.74
Total Utility	**400.42**	**688.52**	**-162.89**	**-396.39**	**-529.65**
Average Utility	**40.04**	**68.85**	**-16.29**	**-39.64**	**-52.97**

Appendix 5

Collateral Utility individual utilities – Source: Sawtooth Software

Observations	**Title deeds/Log book**	**30% Deposits**	**None**
Individual 1	-61.00673811	-42.1436199	103.150358
Individual 2	2.750450147	-80.6052207	77.85477058
Individual 3	-54.57166741	-46.1592214	100.7308888
Individual 4	-20.2707974	-41.6513041	61.92210152
Individual 5	-66.16940014	19.27678627	46.89261387
Individual 6	-58.40683829	-1.98933844	60.39617673
Individual 7	-36.69411661	-32.5433559	69.23747254
Individual 8	-17.23501226	33.16508387	-15.9300716
Individual 9	4.692995738	-38.6402801	33.94728431
Individual 10	-64.90922175	1.699355889	63.20986586
Total Utility	**-371.82**	**-229.59**	**601.41**
Average Utility	***-37.18***	***-22.96***	***60.14***

Appendix 6

Speed of accessibility individual utilities – Source: Sawtooth Software

Observations	**Instant**	**3 to 24 hours**	**1 to 2 days**	**2 to 3 days**
Individual 1	11.97	1.13	27.82	-40.92
Individual 2	3.35	26.18	-41.64	12.12
Individual 3	26.49	-5.07	0.92	-22.34
Individual 4	53.25	38.21	-12.46	-78.99
Individual 5	8.02	-16.78	13.18	-4.42
Individual 6	30.50	-23.07	9.25	-16.68
Individual 7	-53.45	-8.28	33.74	27.98
Individual 8	40.60	-29.51	82.55	-93.64
Individual 9	16.40	51.98	6.50	-74.88
Individual 10	-15.99	96.04	-30.37	-49.68
Total Utility	**121.14**	**130.82**	**89.48**	**-341.45**
Average Utility	***12.11***	***13.08***	***8.95***	***-34.14***

Appendix 7

Importance of Attributes – Summary from first group of respondents

Aggregated importance:	
Source	Importance (%)
Channel	23.140
Rates	22.083
Collateral	14.058
Speed	40.718