

Micro-finance selection criteria for customers in South Africa

Christoffel C Fritz

A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Business Administration

Johannesburg, 2009

ABSTRACT

Micro-finance serves a critical role in South Africa but it is yet to enjoy the attention of true marketing and customer focus (Rademaker, 2005). It is also an industry that finds itself under increasing political, regulatory and competitive pressures (Porteous & Hazelhurst, 2004). The opportunity to enjoy a position of competitive advantage and long term sustainability therefore exists for progressive micro-finance providers that focus on better understanding and addressing the needs and preferences of their customers.

The purpose of the research was to identify and determine the relative importances of the borrowing decision criteria of customers in the micro-finance sector in order to aid market segmentation and product design efforts.

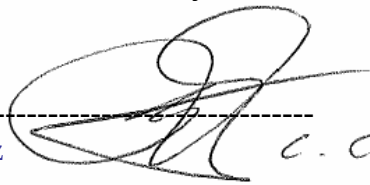
The research included a pilot study of 12 micro-finance customers to facilitate the design of the research instruments. Subsequently, the responses collected from a non-probabilistic purposive sample of 88 micro-finance customers were analysed. The analysis was quantitative in nature and applied the conjoint analysis method to determine that on average, micro-finance customers regarded the loan amount of primary importance. Following in order of importance was the affordability of loan repayments, the duration of the repayment term, the service quality, the turnaround time taken to conclude the loan transaction, and finally the price (*or total cost*) of the credit.

To investigate the existence of potential micro-finance segments with different needs and preferences, the output data of the conjoint analysis was further analysed using the principal components analysis and k-means clustering methods. The resulting five segments were profiled and labelled as “1. *Affordability and repayment term conscious big loan amount borrowers*”, “2. *Affordability constrained small loan amount borrowers*”, “3. *Service and price sensitive medium loan amount borrowers*”, “4. *Impatient affordability constrained big loan amount borrowers*”, and “5. *Affordability conscious service and price shoppers*”.

DECLARATION

I, Christoffel Cornelius Fritz, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Christoffel Cornelius Fritz



C. C. Fritz

Signed at ...Waterloo, Belgium.....

On the13th.. day of ...January 2009

DEDICATION

To my wife Chantelle for her endless patience, love and support.

ACKNOWLEDGEMENTS

I wish to express my sincere thanks to:

- Professor Geoff Bick for his continued assistance, guidance and supervision.
- Dr. Anthony Stacey for his assistance with the statistical analysis components of this research report.
- Mrs. Jennifer Rademaker from African Bank for her interest in my research topic and for the experience and expertise in credit risk underwriting she was willing to share with me.
- Mr. Thabisi Thabisi for his assistance during the interview phases of my research.
- The many micro-finance customers who were willing to afford me with the time and input necessary to conduct this research study.

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	Purpose of Study	1
1.2	Context of the study	1
1.3	Research Problem	2
1.3.1	Sub Problem One	2
1.3.2	Sub-problem Two	2
1.3.3	Sub-problem Three	2
1.4	Delimitation and limitations	3
1.5	Significance of the study.....	3
1.6	Assumptions.....	4
1.7	Terms	4
2	LITERATURE REVIEW	6
2.1	The evolution of micro-finance in South Africa.....	6
2.2	Borrowing behaviour	9
2.2.1	Borrowing decision making process.....	9
2.2.2	Categorization of borrowing decision making.....	10
2.2.3	Reasons for borrowing.....	11
2.2.4	Drivers of borrowing behaviour.....	11
2.3	Segmentation.....	13
2.3.1	Demographics	13
2.3.2	Borrowing Reasons	14
2.3.3	Types of Borrowers.....	15
2.4	Product Features.....	16
2.5	Research Questions.....	18
2.5.1	Research Question One.....	18
2.5.2	Research Question Two	19
2.5.3	Research Question Three	19
2.5.4	Research Question Four.....	20
3	RESEARCH METHODOLOGY.....	21
3.1	Quantitative Research Paradigm.....	21
3.2	Research Population.....	22
3.3	Sample Size.....	23
3.4	Sampling Methodology.....	24
3.5	Data Collection	25
3.5.1	Survey Protocol.....	25
3.5.2	Measuring Instruments (Questionnaire)	26
3.5.2.1	Loan Amount Offered (Rand).....	29
3.5.2.2	Affordability of instalments (% of Net Take-home Salary)	29
3.5.2.3	Loan Repayment Term (Months).....	30
3.5.2.4	Service Quality (Friendliness of service and level of emotional comfort)	30

3.5.2.5	Turnaround time to payout/ disbursement of borrowed fund	31
3.5.2.6	Price of the Product (TCOC Price as % of Amount Borrowed)	31
3.5.3	Reliability and Validity of Research Instruments (Questionnaire)	33
3.6	Data Analysis Method	33
3.6.1	Conjoint Analysis	33
3.6.2	Principal Components Analysis (PCA)	35
3.6.3	Cluster Analysis	36
3.7	Reliability and Validity	36
4	PRESENTATION AND DISCUSSION OF RESULTS	38
4.1	Description of research sample	39
4.1.1	Demographics	39
4.1.2	Intended Loan Purpose	43
4.1.3	Borrowing Status	44
4.2	Statistical Analysis Results	45
4.2.1	Conjoint analysis results	45
4.2.2	Principal Components Analysis (PCA) results	48
4.2.3	Cluster Analysis results	49
4.2.4	Cluster specific conjoint analysis results	50
4.3	Responses to Research Questions	55
4.3.1	Response to Research Question 1	55
4.3.2	Response to Research Question 2	56
4.3.3	Response to Research Question 3	57
4.3.4	Response to Research Question 4	63
5	CONCLUSION AND RECOMMENDATIONS	70
5.1	Research Problem	70
5.1.1	Sub Problem 1	70
5.1.2	Sub Problem 2	73
5.1.3	Sub Problem 3	74
5.2	Recommendations for micro-finance providers	76
5.3	Limitations	77
5.4	Recommendations for further research	78
5.5	Final remarks	78
	References	79
	Appendix A: Consistency Matrix	83
	Appendix B: Borrowing Behaviour Questionnaire – Part 1	85
	Appendix C: Borrowing Behaviour Questionnaire – Part 2	86
	Appendix D: Conjoint Questionnaire Design (Optimal pair-wise comparison)	87
	Appendix E: Research Questionnaire	88
	Appendix F: Cluster Specific Characteristic Distributions	91

LIST OF TABLES

Table 1 – Demographic categorisation	13
Table 2 – Borrowing reasons	15
Table 3 – Frequency and extent of borrowing	16
Table 4 – Borrower types.....	16
Table 5 – Evaluating product differentiators	17
Table 6 – Micro-finance attributes rank-ordered by relative importance	27
Table 7 – Calculation of attribute importances.....	34
Table 8 – Calculation of attribute level utilities.....	34
Table 9 – Borrowing status summary	44
Table 10 – Average conjoint utilities and importances	45
Table 11 – Conjoint variables used in PCA.....	48
Table 12 – Eigenvalues resulting from PCA	48
Table 13 – Percentage variation explained	49
Table 14 – Mean factor loadings by cluster.....	50
Table 15 – Attribute Importances by cluster.....	50
Table 16 – Average loan amount attribute level utilities by cluster	51
Table 17 – Average affordability attribute level utilities by cluster	52
Table 18 – Average repayment term attribute level utilities by cluster.....	52
Table 19 – Average service quality attribute level utilities by cluster.....	53
Table 20 – Average turnaround time attribute level utilities by cluster	53
Table 21 – Average TCOC Price attribute level utilities by cluster	54
Table 22 – Attribute importance rank-ordering by cluster	58
Table 23 – Cluster summary of borrowing characteristics	62
Table 24 – Segment profile summary	69
Table 25 – Average attribute importances of micro-finance decision criteria.....	73

LIST OF FIGURES

Figure 1 - Five-stage model of the consumer buying process	10
Figure 2 – Example of pair-wise comparison	28
Figure 3 – Geographical distribution	39
Figure 4 – Age distribution	39
Figure 5 – Marital status distribution.....	40
Figure 6 – Preferred language distribution	40
Figure 7 – Highest education distribution.....	41
Figure 8 – Occupational status distribution	41
Figure 9 – Monthly net income distribution	42
Figure 10 – Purpose of most recent loan distribution	43
Figure 11 – Average attribute importances.....	56
Figure 12 – Attribute importances by cluster	57

Micro-finance selection criteria for customers in South Africa

1 INTRODUCTION

1.1 Purpose of Study

The purpose of this study is to explore the extent to which selected factors in the product offering process influence the borrowing decisions of customers in the South African micro-finance industry.

The intent is to identify, analyze and interpret these factors in order to inform the customer focused strategies of the micro-finance providers that wish to gain a competitive advantage in acquiring and retaining customers.

1.2 Context of the study

The micro-finance sector of South Africa finds itself under increasing political, regulatory and competitive pressures (Porteous & Hazelhurst, 2004).

More rigorous consumer protection and increasing levels of rivalry between the providers of unsecured credit to the South African emerging market makes customer focused strategies imperative to the long-term sustainability of micro-finance providers (Helms & Porteous, 2005; Carte, 2006).

Research that could inform customer focused strategies in the micro-finance sector will provide progressive lenders with a competitive advantage and assist them in narrowing the gap between customer expectation and product benefits.

1.3 Research Problem

The research problem is to determine the relative importance's of the borrowing decision criteria of customers in the micro-finance sector in order to aid market segmentation and product design efforts.

The research attempted to encourage customer focused strategies through aiding the design and delivery customization efforts that micro-finance providers commit to competitively market and reengineer their micro-finance product offerings.

1.3.1 Sub Problem One

To identify the criteria used by micro-finance customers when making their borrowing decisions.

1.3.2 Sub-problem Two

To segment micro-finance customer groups along the illustrated differences in their borrowing behaviour.

1.3.3 Sub-problem Three

To develop an understanding of how product features may be applied to aid in the design and optimization of customer segment specific product strategies. *(as employed by the providers of unsecured credit who wishes to realize a competitive advantage.)*

1.4 Delimitation and limitations

The focus of the research was limited to the development of a deeper understanding of the borrowing decisions of customers in the micro-finance sector. The factors that influence the borrowing behaviour of microfinance customers were explored to obtain potentially valuable insights that could assist the providers of micro-lending products to reach and serve customers more effectively (Kotler, 2003).

The research was delimited to customers that have experienced the exercise of making the borrowing decision to accept or to decline a micro-loan product offering (Welman and Kruger, 2000).

No attempt was made to ascertain the credit repayment risk of identified customer segments.

No specific efforts were made to explore the reasons why large banking institutions are not completely satisfying the needs of customers channelled into the micro-finance sector.

1.5 Significance of the study

The South African micro-finance industry continues to face increased regulation, but poorly educated and insufficiently informed borrowers will remain at risk of being pressured into making poor borrowing decisions (Helms and Porteous, 2005).

Micro-finance has not received the attention of true marketing. Lenders remain on the path that customers do not “need” more than what is currently on offer (Rademaker, 2005).

Developing a deeper understanding of the borrowing decision process that customers typically employ in the micro-finance sector may have the potential of driving

competitive strategies, better service delivery, and greater customer education opportunities.

1.6 Assumptions

- Respondents would be willing to share their borrowing decision experiences.
- Respondents would be willing to share potentially sensitive personal information required for segmentation.
- The profile of respondents would not bring about any inherent bias.
- Respondents would provide truthful and normal responses.
- Respondents would portray characteristics that will allow for segmentation.
- Opportunities for viable customer focused product strategies in the micro-finance sector do exist.

1.7 Terms

- Micro-finance refers to the provision of fixed term instalment loans of less than R10,000 over a term shorter than 36 months (Porteous and Hazelhurst, 2004).
- MFRC – Micro Finance Regulatory Council – Regulatory body with the power to supervise and regulate the micro-finance industry (Porteous and Hazelhurst, 2004).
- DTI – Department of Trade and Industry
- PASA – Payments Association of South Africa – “PASA is the body recognised by the South African Reserve Bank in terms of the National Payment System Act (Act 78 of 1998) to manage the relationships between the various banks in South Africa involved in exchanging transactions on behalf of customers. PASA’s regulatory domain extends to transactions which are not exchanged between two different banks” (Quoted from www.PASA.org.za, 2005).
- AEDOS – Authenticated Early Debit Order System – AEDOS is an electronic system that facilitates the process of executing debit order deductions on behalf of creditors against the bank accounts of debtors that provided them with the mandates

to collect through an on-line bank card dependant early debit order authentication system. The AEDOS system is hosted and facilitated through PASA.

- NAEDOS – Non-Authenticated Early Debit Order System – NEADOS is a similar system to AEDOS with the only exception being that no-authentication is required for the execution of debit order deductions. NEADOS is also hosted and facilitated through PASA.
- CGAP – “The Consultative Group to Assist the Poor (CGAP), is a consortium of 33 public and private development agencies working together to expand access to financial services for the poor, referred to as micro-finance” (Quoted from www.CGAP.org, 2006).
- TCOC – The total cost of credit (Including interest, fees, and all other charges)

2 LITERATURE REVIEW

2.1 The evolution of micro-finance in South Africa

“Political freedom won at the polls in 1994 had to be translated into economic freedom” (Porteous & Hazelhurst, 2004:6).

The advent of democracy in South Africa since 1994 had raised the lifestyle aspirations of the majority of the SA population previously oppressed by the historical apartheid regime. Sadly, the availability of the financial services required to facilitate the effective realization of economic transformation was lacking (Porteous and Hazelhurst, 2004).

The situation created the opportunity for private firms to employ their own capital in the form of micro-loans under the 1992 exemption to the Usury Act of 1968 which effectively removed price (*Interest rate*) control on small (*less than R6,000; later amended to R10,000*) short term loans (*less than 36 months*) (Porteous & Hazelhurst, 2004).

Commercialization of SA micro-lending started in 1995 and continued to grow rapidly to 1999 with turnover in the industry almost trebling from R 3,6bn to R10,1bn over the periods 1995 to 1997 (Porteous and Hazelhurst, 2004).

By 1999 the big four SA banks (ABSA, FNB, SBSA, NEDCOR) had realized micro-finance as the new wave for profitable growth and had entered directly or through partnership into the longer term micro-lending market to the extent of domination (Porteous & Hazelhurst, 2004).

Exorbitantly high interest rates combined with predatory and unscrupulous lending practices such as ignoring the affordability constraints of clients as well as retaining the client’s bank card-and-pin to secure repayments were some of the factors that influenced the regulatory amendments published in the 1999 Exemption to the Usury Act. The 1999

Exemption Notice outlawed the bank card-and-pin collection method and provided for the creation of a micro-finance regulatory body with the power to supervise and regulate the industry. The Micro-Finance Regulatory Council (MFRC) was established in 2000 to serve this purpose (Porteous & Hazelhurst, 2004).

Consolidation of the industry started in 2000 with unavoidable costs to be incurred for registration (*MFRC*) and compliance to regulation (*1999 Exemption Notice*) driving some lenders out of the market. Government's closure of payroll deductions in 2000 was a further blow to lenders with large exposures to the government sector and consequently forced more consolidation as well as the industry exit of micro-lenders who could not successfully convert their collection methods to an alternative platform. Porteous and Hazelhurst (2004) mentions Saambou and ABSA's UNIBank as failing "spectacularly", specifically as result of mismanaging their micro-lending exposure by completely ignoring the basic banking principle of separating sales and credit assessment processes. The long term micro-lending market is today (2007) dominated by African Bank (ABIL) who in 2002 acquired the Saambou personal loans book (Porteous & Hazelhurst, 2004).

There is no doubt that micro-finance has been through its fair share of trials and tribulations, but it is yet to enter into a mature phase as depicted by a stable regulatory framework. Porteous and Hazelhurst (2004) believes that this may be in sight with the June-2006 implementation of a new National Credit Act incorporating the Credit Agreements Act (1980) and Usury Act (1968) into a single National Credit Act (Porteous and Hazelhurst, 2004; National Credit Act, 2006).

Illustrated by MFRC statistics as being an industry worth more than R18,5bn (www.mfrc.co.za, 2005a), micro-finance in South Africa remains an emotive and controversial topic. The exploitation of vulnerable borrowers is increasingly attracting the attention of regulators and politicians. Protecting the consumer across the lending cycle remains a key area of focus for policy makers but there is no clear consensus yet around the intensity and scope of the enforcement of such protective measures. A delicate balance is required between consumer protection and the financial attractiveness of the sector. Excessive protection could render micro-finance unprofitable and force consumers

back into the informal market where they may not enjoy any form of protection against unscrupulous lending and collection practices. To this end, CGAP motivates self-regulation as a more pragmatic and flexible approach and shifts the focus from consumer protection to one of customer focus (Helms & Porteous, 2005).

But, imminent interest rate ceilings and heavy penalties for reckless lending as prescribed in the National Credit Act has the potential to erode the attractiveness of the micro-finance sector and could lead to a further consolidation and the possible exit of certain providers of micro-finance. Heavy consolidation and industry exit could mean that the remaining participants in the industry would be able to capitalize on the arbitrage opportunity created. Being that they could simply converge their pricing to the highest interest rate ceiling permissible below the regulatory caps and the need for customer focus would then be lost (National Credit Act, 2006).

The new early debit order service (*AEDOS and NAEDOS*) introduced by the Payments Association of South Africa aims to eliminate the previous inequalities that existed where deposit taking institutions such as the big four banks were in a position to allow themselves preference when processing debit orders. More specifically, (*AEDOS and NAEDOS*) aims to function in such a manner that debit-order deductions always execute in a random order, thus allowing no one micro-lending provider pre-arranged preference over another when collecting repayments. Each micro-lending provider will thus experience the same level of repayment risk and therefore be forced to focus more on satisfying customer needs in order to acquire and retain the required economic customer volumes in a more competitive market (www.PASA.org.za, 2005; Porter, 1980).

The pricing opportunity created in the National Credit Act for credit card product offerings further fuelled the aggressive pursuit of the South African emerging market. Credit card offerings are for the first time in South Africa being made to low income customers, and everyone is getting onto the bandwagon. This includes financial institutions such as the big four banks, ABIL, retailers such as Edgars, Clicks, cell phone companies such as Vodacom, medical health providers such as Discovery, and even airlines such as Kulula (National Credit Act, 2006; www.vodacom.co.za, 2007;

www.clicks.co.za, 2007; www.kulula.com, 2007; www.edgarsmastercard.co.za, 2007; www.discovery.co.za, 2007).

With the likely expanded range of customer options available in the changing micro-finance landscape, a rigorous customer focused approach may prove to be the only long-term survival strategy for the providers of micro-finance (Helms and Porteous, 2005).

2.2 Borrowing behaviour

2.2.1 Borrowing decision making process

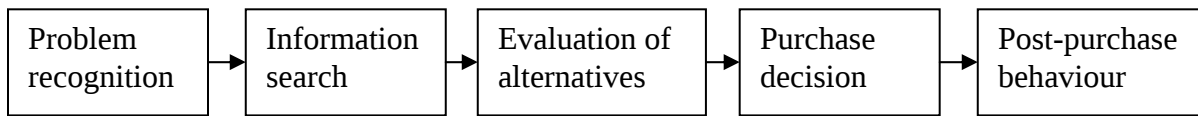
As the process of using a micro-loan to borrow funds is viewed as effectively buying a form of financial service, research on buying behaviour will be drawn upon to gain insights into the borrowing behaviour of micro-finance customers.

Kotler (2003) states that cultural, social, personal and physiological factors influence the buying characteristics of customers. These characteristics may then be influenced by marketing stimuli such as the traditional 4P's of marketing (*Product, Price, Place and Promotion*), along with the 3 additional P's (*People, Physical Evidence and Process*) as typically employed in the services industry (Kotler, 2003).

Kotler's model for buyer behaviour further states that the characteristics of buyers influence their decision making process. The buyer's decision making process is illustrated as the sequential steps of recognizing the problem, searching for information, evaluating alternatives, reaching a purchase decision and considering post purchase behaviour (Kotler, 2003).

Kotler's model for buyer behaviour then suggests that the buyers decision making process will determine the buyer's ultimate decision on product choice, brand choice, dealer choice, purchase timing and purchase amount (Kotler, 2003).

Figure 1 - Five-stage model of the consumer buying process



Source: Kotler (2003:204)

2.2.2 Categorization of borrowing decision making

Lamb, Hair, McDaniel, Boshoff & Terblanche (2002) suggest that a consumer's buying behaviour typically falls along a continuum of three broad categories, detailed as

- routine response behaviour,
- limited decision making, and
- extensive decision making.

Lamb *et al* (2002) further suggest that when classifying goods and services into the above listed buying behavioural categories, one would need to consider the level of consumer involvement, the length of time taken to reach a decision, the cost of the good and service, the degree of information researched, and the number of alternatives considered by the typical consumer involved.

Lamb *et al* (2002) continues in stating that the level of consumer involvement is dictated by the consumer's previous experience, the consumer's direct interest, the consumer perception of negative consequences, the purchase situation (borrowing reason), and the social visibility of the product such as the status associated with a credit card.

Considering the nature of a micro-finance borrowing transaction, it can safely be assumed that it requires a high degree of consumer involvement, and that premium pricing would normally be applied to cover the high risk profile of the South African low-income emerging market segment. (African Bank, 2006) Also considering the influx of financial service providers into the emerging low-income target market sector, it can

be concluded that the number of alternatives available to micro-finance customers are on the increase, that more information is available on competing product offerings and that consumers would require more time to make their borrowing decisions. Given these considerations, it is observed that micro-finance customers have migrated from a previously limited decision making process to a more extensive decision making process.

2.2.3 Reasons for borrowing

Danziger (2004) identifies “quality of life” as the primary justifier for entering into purchasing decisions. Danziger (2004) continues that quality of life purchases are justified on the improvement potential that any particular purchase transaction may have on the intellectual, physical, spiritual, emotional and social position of the consumer.

In exploring the reasons for borrowing as illustrated in African Bank’s strategy presentation (African Bank Strategy Presentation, 2006), it is observed that education, home improvement, meeting car repayments, new baby essentials, medical, transport, gifts, settlement of retailer accounts, holidays, vehicle repairs, and funerals were cited as primary borrowing reasons. Looking at the primary needs of the low-income emerging market as detailed by African Bank, it is clear that all of these needs relate to at least one of the five quality of life dimensions as detailed by Danziger (2004). Developing insights into how unsecured credit products may enhance the quality of life for micro-finance consumers can lead to successful product positioning strategies that play back to the basic beliefs and values of micro-finance customers (Danziger, 2004).

2.2.4 Drivers of borrowing behaviour

The Australian study conducted by Nexhmi (1998) regarding the factors that impact on the level of customer commitment enjoyed by financial service providers revealed the following factors to have the most substantial impact on customer commitment:

- Competitiveness of the product offer (Interest Rate, Charges and Product Benefits),
- Quality of customer service personnel (Open, Informative, and Helpful), and

- Customer specific attention (Individual Attention, Customer education, and Tailored solutions)

Nexhmi's (1998) study further revealed that trust played an important role in delivering customer commitment to financial service providers and that the level of trust customers exert would typically depend on whether promises are kept, information and services provided are perceived to be reliable, and whether the level of honesty with which products are marketed and sold is perceived to be acceptable.

The research study done by Walters (2004) where customer value in the South African retail bank personal loans sector was investigated recommends that the borrowing decision of customers obtaining finance through personal loans is mostly dependant on the level of emotional comfort the customer enjoys when approaching a bank, the price of the product (interest rates), affordability of repayments, service delivery at application stage, and the efficacy of marketing strategies.

Matin, Hulme & Rutherford (1999) include incentives such as the availability of larger repeat loans, increased access to finance for affiliate group members and cash-back schemes for rewarding good repayment performance as further drivers of borrowing behaviour.

A year 2000 DTI Interest Rate study as published on the MFRC's website indicate that less than 10% of clients knew the interest rate that they were paying. The study also revealed that 45% of clients interviewed based their borrowing decision and selection of micro-finance provider on convenience, and 25% of clients indicated that they had exhausted all other options and had no alternative choice of micro-finance provider (www.mfrc.co.za, 2005b).

Rademaker (2007) recommended it necessary to differentiate between first-time and repeat micro-finance borrowers, and suggested that the borrowing behaviour of micro-finance customers can be further classified by how often they need to utilize credit, and by the intensity to which they need to utilize credit. Rademaker (2007) continued that the

intensity to which micro-finance customers utilize credit can in her experience be determined by considering the extent to which a micro-finance customer has committed his/her monthly income to credit repayments.

2.3 Segmentation

2.3.1 Demographics

The demographic variables as used in the DTI's year 2000 informal finance survey which was conducted as part of the DTI's year 2000 Interest Rate Study (www.mfrc.co.za, 2005b), were drawn upon and adapted with consideration to the literature reviewed for the formulation of the following demographic categories:

Table 1 – Demographic categorisation

Age	Highest Education	Occupation Status	Marital Status	Net Monthly Salary Income	First / Preferred Language
< 25	No formal education	Government Employee	Single	<R1000	Northern Sotho
25 to 29	Primary School	Agriculture / Farming	Married / Life Partner	R1,000 to R2,000	Sesotho
30 to 35	Secondary School	Telecoms	Divorced	R2,001 to R3,000	Tswana
36 to 49	Diploma	Engineering / Metal works	Widowed	R3,001 to R4,000	Xhosa
50 to 60	Degree	Mining		R5,001 to R6,000	Zulu
60 +	Other – Please Specify	Chemical		R6,001 to R7,000	Tsonga
		Security		R7,001 to R8,000	Venda
		Transport		R8,001 to R9,000	Siswati / Swazi
		Building and Construction		R9,001 to R10,000	Afrikaans
		Clothing and Textiles		R10,001 to R12,500	English
		Medical and		R12,501 to	Other – Please

		Hospital Services		R15,000	specify
		Food and Beverage		R15,001 to R20,000	
		Financial and Insurance services		R20,001 +	
		Education			
		Domestic Worker			
		Casual Labourer			
		Unemployed			
		Other – Please Specify			

Source: (www.mfrc.co.za, 2005b)

The demographic categories defined above are proposed to have sufficient ability to segment micro-finance customer groups along the cultural, social, personal and physiological factors as motivated by Kotler (2003).

Discrimination on the basis of race or gender is outlawed by the South African constitution when providing financial services and would therefore not be considered as demographic variables to be used for segmentation (National Credit Act, 2006).

2.3.2 Borrowing Reasons

The primary borrowing reasons used for segmenting micro-finance customers into groups with potentially different borrowing behaviour were extracted from African Bank's 2006 Strategy Presentation with specific consideration to the reviewed literature by Danziger (2004). Examination of the identified primary borrowing reasons revealed that the reasons why micro-finance customers borrow could be categorized into satisfying three levels of needs namely:

- Self improvement,
- Consumption, and
- Emergency needs.

Table 2 – Borrowing reasons

Self Improvement	Consumption	Emergency
Education	Holidays	New Baby Essentials
Home Improvements	Gifts	Funeral
Settlement of expensive retail debt	Transport	Medical
		Vehicle Repairs
		Car Repayments

Source: African Bank (2006)

2.3.3 Types of Borrowers

The categories used for differentiating between the types of borrowers were formulated from the insights gained from Rademaker (2007) and would therefore focus on the frequency and intensity of borrowing.

Frequency of borrowing is measured on the basis of how many loan agreements the respondent has entered into over the last one year period. With the intensity of borrowing planned to be measured on the percentage of the respondent's monthly net income committed to credit repayments.

Table 3 – Frequency and extent of borrowing

		% of Monthly Net Income committed to Credit Repayments			
		0%-20%	21%-40%	41%-60%	61%-80%+
Number of loans agreements entered into over the last year	1				
	2				
	3				
	4+				

Source: Rademaker (2007)

Further differentiation is made between first-time and repeat borrowers with consideration to Rademaker's (2007) recommendation.

Table 4 – Borrower types

Micro-Finance Customer Type			
First-time Borrower		Repeat Borrower	

Source: Rademaker (2007)

2.4 Product Features

Gorchels (2003) recommends that when looking to optimize the value proposition of any particular product offering, the product features needs to be classified into attributes that are:

- Standard to the product category,
- Slightly different from the competition, and
- Significantly different from the competition.

These product attributes may then be positively or negatively experienced by the customer and will consequently influence the customer's attitude towards the product.

The evaluation of product differentiators is best illustrated with the table included in table below:

Table 5 – Evaluating product differentiators

Differentiation Attitudes		Standard	Slightly Different	Significantly Different
	↓	→		
Positive		Expected	Satisfier	Exciter
Negative		Accepted	Dissatisfier	Enrager

Source: Gorchels (2003:97)

Positive product attributes that are observed to be significantly better than that of the competition, or attributes being offered by only a limited number of providers / suppliers can be classified into “**exciter**” product attributes and can prompt customers to choose one product over other alternatives (Gorchels, 2003).

Gorchels (2003) further recommends that in order to improve the value proposition of a product, the provider/ supplier must understand:

- What “exciters” may be improved or included into the product offering
- How “enragers” may be eliminated
- How product attributes may be combined to increase the total value to the customer
- What can be done to make product differences visible and important to customers

2.5 Research Questions

Research questions were formulated with consideration to the research problem of determining how micro-finance customers would typically make borrowing decisions, and in consideration of the literature reviewed as well as the responses of the subject matter experts consulted.

2.5.1 Research Question One

What are the key criteria considered by micro-finance customers to consider when selecting a micro-finance provider?

Insights gained from the literature reviewed and the subject matter experts consulted suggests that the typical micro finance customers would consider some of the following criteria when making a borrowing decision:

1. Market perception of the brand, (Brand quality), (Kotler 2003, Nexhmi 1998),
2. Attractiveness of the product offering, (Price, Term, Loan Amount and Affordability of Instalment), (Walters, 2004; Kotler, 2003; Nexhmi, 1998),
3. Availability of alternative product offerings (Kotler, 2003), (Often constraint by personal factors such as the existence of adverse credit bureau information) (www.mfrc.co.za, 2005a),
4. Quality of past and anticipated future service experience (Friendly service, quick disbursement of funds, and the application of responsible collection practices) (Walters, 2004; Nexhmi, 1998),
5. Convenience of location (www.mfrc.co.za, 2005a),
6. Potential to qualify for future benefits (such as bigger repeat loans over a longer term) (Matin et al, 1999), and
7. Overall level of customer centricity perceived about the organisation (Nexhmi, 1998; Helms and Porteous, 2005).

2.5.2 Research Question Two

What is the relative importance of these factors?

The literature reviewed suggested that the process of entering into a micro-finance agreement can be classified as an extensive decision making process (Lamb *et al*, 2002). Danziger (2004) suggests that the borrowing decisions of micro-finance customers will be influenced by the perceived “quality of life” improvement potential offered by the value propositions considered. Nexhmi (1998) continues that customer commitment further depends on the reliability and honesty perceptions formed on the financial institutions they interact with.

It is acknowledged that the micro-finance decision making process is complex in nature and that it is greatly influenced by the perceptions held by individual customers. On this basis it is argued that certain segments of micro-finance customers would exert different levels of sensitivity and preference to the various factors influencing their borrowing decisions.

2.5.3 Research Question Three

What segments exist in the micro-finance sector and how do they differ from one another?

Insights gained from the literature reviewed and subject matter experts consulted suggest that the segmentation of micro-finance customers should be possible across their demographic characteristics (Kotler, 2003), their reasons for borrowing (Danziger, 2004), the frequency and intensity of their borrowing, and whether they are first time or repeat borrowers (Rademaker, 2007).

Statistical analysis and segmentation techniques are planned to be employed in the identification and analysis of micro-finance customer segments and will be described in further detail under the research paradigm section of this document.

2.5.4 Research Question Four

How can the specific needs and preferences of each segment be addressed?

Segmentation of micro-finance customers would provide valuable innovation, product repositioning and competitive advantage opportunities. Empowered with an improved understanding of the dynamics of the micro-finance market, the micro-finance providers will be in a better position to feasibly address the specific needs and preferences of each of the identified segments and in the process improve the market share and profit potential of their respective organisations (Curry, 1996).

3 RESEARCH METHODOLOGY

3.1 Quantitative Research Paradigm

The research was executed in the form of a survey, was quantitative in nature, and was formulated from a purposive research sample.

The intent of the research was to statistically analyze the behavioural sensitivities and preferences of micro-finance customers through the use of a conjoint analysis method. The output of the conjoint analysis was expected to facilitate the segmentation of customers along demographic and borrowing pattern criteria using a cluster analysis method. The objective of this information is to assist micro-finance providers with the feasibility optimization of the products and services they offer to each segment.

Conjoint analysis was selected as the quantitative research method to be employed on the basis that it is a statistical marketing research technique that is popularly used to determine which product features are valued by customers and to determine what prices customers are willing to pay for such product features. (Curry, 1996)

It is quite obvious that customers will typically like to pay the lowest price for the best quality of service and product offering. Conversely, suppliers would like to charge high prices in order to make very high profits, but customers would not buy their products at these high prices. The most viable product is thus somewhere in between the price that customers are willing and able to pay and the price at which suppliers are willing and able to sell their products and services at. The application of the conjoint analysis method provides some indication of this point as it tests the differences in customer sensitivity and preference (Curry, 1996). The conjoint analysis method specifically examines the level of importance that customers assign to various product or service offering attributes. One of these attributes is the price of the product or service (Curry, 1996).

The conjoint analysis conducted on the research data focused on determining the level of importance that different micro-finance customers assigned to the various attributes considered when making their micro-finance borrowing decisions (Orme, 2002a). The existence of unequal attribute importance and utility means across groups facilitated the process of identifying and segmenting clusters of micro-finance customers into groups that share similar sensitivities and preferences (Malhotra, 1996).

3.2 Research Population

The research sample was purposive in nature and delimited to customers in South Africa who have experienced the exercise of making the borrowing decision of accepting or declining a micro-loan product offering (Welman and Kruger, 2000).

To ensure that the above criterion was met, only customers of African Bank and Capitec Bank were engaged on a mall-intercept basis. Only African Bank and Capitec Bank customers were selected because micro-finance products comprise the primary product offering of these institutions (www.AfricanBank.co.za, 2005; www.CapitecBank.co.za, 2005).

Emphasis was placed on geographical locations within the borders of Gauteng where both of the above two micro-finance institutions as well as the big four SA banks have competing branch outlets within a relatively close proximity (+5 km radius). The following geographical locations were selected for data collection on the basis of their geographical dispersion and practical convenience only:

- Boulders Mall (Midrand)
- Pretoria (City Central)
- Roodepoort (City Central)
- Southdale Shopping Centre (Johannesburg South)

Respondents were screened for legal emancipation (21 years of age or older) and South African citizenship.

The study focused on the customer choice in the normal retail side of the micro-finance sector, and because of the existence of employer group scheme arrangements, respondents were also screened to ensure that their loan repayments were not being made via a payroll deduction.

3.3 Sample Size

Orme (1998) suggests the following formula to have been applied for calculating the suggested number of pair-wise observations per respondent.

$$3 \times (N - n - 1) - N$$

Where:

- N = total number of levels
- n = total number of attributes (Orme, 1998)

As later described in this document, a total of six attributes (n=6) were used in the questionnaire and the number of levels within all attributes totalled (N = 18). The suggested number of observations would thus have been $3 \times (18 - 6 - 1) = 33$ observations per respondent. But for practical purposes, the number of pair-wise comparisons that each respondent was required to make was decided to be limited to 20. The use of the Sawtooth statistical software package was employed to ensure the optimal selection of the 20 pair-wise comparisons presented to the respondent.

It was also attempted to interview at least 3 times as many respondents as the number of observations suggested per respondent in order to minimize measurement error. In the end, a sample totalling 88 respondents were interviewed for this study.

3.4 Sampling Methodology

A non-probabilistic purposive sampling methodology was employed in the data collection process. The sample was purposive in the sense that only customers at African Bank and Capitec Bank branch outlets were surveyed. Arguing that since micro-finance products form a primary part of the product and service offering of these institutions, it was argued that their customers would be best suited to represent the characteristics and views of South African micro-finance customer in general (Welman and Kruger, 2000; www.AfricanBank.co.za, 2005; www.CapitecBank.co.za, 2005).

The limitation of the selected non-probabilistic purposive sampling methodology was that the probability of a given element to have been included in the sample could not have been specified. A further limitation was the fact that different researchers may have proceeded in different ways to identify purposive samples and it remains therefore impossible to evaluate whether or not the selected samples are truly representative of the population (Welman and Kruger, 2000).

Nonetheless, the benefit of using this sampling methodology was believed to outweigh its limitations given budgetary constraints and the nature of the MBA type research (Orme, 1998).

3.5 Data Collection

3.5.1 Survey Protocol

The survey protocol entailed a process of engaging customers as they exit or wait in line at an African Bank or Capitec Bank branch outlet.

The intercepted respondents were presented with the explanation that the research was conducted as part of a WITS MBA research project with the purpose of developing a better understanding of the elements that micro-finance customer's value or dislike about current micro-finance product and service offerings.

At this point, the respondents were notified of how long the questionnaire would take to complete and then asked if he/ she would be willing to participate in the proposed study. Respondents who agreed to participate were provided with a short demonstration of how to complete the paper based questionnaire. (*Appendix E*)

Respondents were assisted by the field researcher as far as possible with the adequate level of assistance that may be required for interpreting and completing the questionnaire.

On completion, respondents were thanked for their participation and presented with a small gift to illustrate gratitude for their participation.

The small gift was in the form of a sweet or soft drink and never exceeded R10.00 in value. The promise of a small reward went a long way to encourage participation as it served as positive incentive for completing the survey process.

3.5.2 Measuring Instruments (Questionnaire)

A paper based questionnaire approach was employed. The questionnaire consisted of four sections. The first three sections focused on collecting the respondent's information required for segmentation, and the last section involved the completion of a pair-wise conjoint questionnaire that aimed to test the level of preference that respondents illustrated given the different micro-finance product and service offer comparisons presented (Orme, 2003).

The first three sections of the questionnaire involved the selection of an appropriate demographic, borrowing reason, and borrower type category from the available options presented. (Appendix E)

The last section of the research instrument (questionnaire) contained the pair-wise comparisons required to conduct the conjoint analysis study. The use of a full factorial conjoint analysis was employed, with the use of a parsimonious model selected in order to reduce the number of pair-wise comparisons that each respondent needed to make. The parsimonious model selected for the full factorial conjoint analysis design was used on the basis that it permits efficient estimation of most main effects and interactions whilst only utilizing a limited number of all possible profile combinations.

The last section of the research instrument (questionnaire) required respondents to complete the pair-wise comparison questionnaire. This section of the research instrument (questionnaire) involved a process of evaluating pairs of micro-finance products with different sets of attribute levels in a systematic, feature-by-feature basis, using the respondents own relative preference rating.

The reviewed literature revealed a vast array of product and service attributes that could potentially affect consumer preference, but Orme (2003) suggests that respondents find it difficult to effectively process more than about six attributes. Faced with this dilemma of choosing which attributes to test and which attributes to omit out of the study, it was

decided that it would be more prudent to ask a few micro-finance customers to rank the below detailed product and service attributes in terms of their order of preference.

To this end, a pilot test group of twelve micro-finance customers were interviewed outside the African Bank branch in Braamfontein Johannesburg with the following attribute rank ordering being observed in their responses. (Appendix B)

Table 6 – Micro-finance attributes rank-ordered by relative importance

Ranking Order	Attribute	Relative Ranking
1	Loan amount	29
2	Affordability of instalments	45
3	Repayment Term	49
4	Friendly service	80
5	Emotional Comfort	85
6	Turnaround time to conclude borrowing process	87
7	Price	88
8	Brand	95
9	Fair and Legal collection practices	102
10	Convenience	108
11	Simple and straight forward application process	108
12	Alternative finance options	124
13	Potential of future benefits	124
14	Recognition of individual risk profile	136

The relative ranking measure detailed above is simply the sum total of the ranking provided by all interviewed customers for any specific attribute.

On the basis of the above detailed analysis the following top six product and service attributes were selected for use in the pair-wise comparison questionnaire:

1. Loan amount offered (Rand)
2. Affordability of instalments (% of Net Take-home Salary)

3. Repayment term (Months)
4. Service quality (Friendliness of service and level of emotional comfort enjoyed)
5. Turnaround time to conclude borrowing process
6. Price of the product (TCOC Price as % of Amount Borrowed)

In example:

Figure 2 – Example of pair-wise comparison

Which micro-finance product offer would you prefer?									
Choose a number to indicate your preference									
Product A					Product B				
1. Loan Amount = R 10,000 2. Affordability = 20% of Net Salary 3. Term = 24 Months 4. Service Quality = Incompetent Staff 5. Turnaround Time = 2 Days 6. TCOC Price% = 30% of Ln Amt					1. Loan Amount = R 5,000 2. Affordability = 35% of Net Salary 3. Term = 6 Months 4. Service Quality = Competent Staff 5. Turnaround Time = Same Day 6. TCOC Price% = 50% of Ln Amt				
1	2	3	4	5	6	7	8	9	
Strongly prefer Left				No Preference	Strongly Prefer Right				

It is important to note that NOT each and every possible combination of product attribute level was presented to the respondent for evaluation in the parsimonious design selected for the full factorial conjoint analysis study.

Should the parsimonious design not have been selected, the number of pair-wise comparisons that each respondent would have needed to complete would have totalled total 6^3 (6 attributes with 3 levels each), equalling a total of 216 comparisons. This high number of comparisons was observed to be entirely impractical and therefore served as justification for the selection of the parsimonious design.

When determining the levels used under each attribute to be tested, it was again felt to be more prudent to speak to a few micro-finance customers in order to consider their opinion of which attribute levels would be most appropriate. To this end, a further twelve micro-finance customers were interviewed at the Ghandi Square (Braamfontein JHB) and Midrand African Bank branch outlets. The required levels for each attribute were formulated by asking the interviewed micro-finance customers to say what they would think a small, medium and large loan amount would be. The highest frequency of similar responses under each category was then selected as the attribute levels. (Appendix C)

A similar sort of three tier grading system was applied in formulating the required levels of the remaining five attributes.

3.5.2.1 Loan Amount Offered (Rand)

The highest frequency of similar responses identified the following levels to be used under the “Loan Amount Offered” attribute:

- R 3,000 (Identified as a small loan size)
- R 5,000 (Identified as a medium loan size)
- R 10,000 (Identified as a large loan size)

3.5.2.2 Affordability of instalments (% of Net Take-home Salary)

Net Take-home Salary is defined as the remaining disposable income available to a potential Micro-Finance customer after all of his/her monthly statutory and contractual payment liabilities are met.

The highest frequency of similar responses identified the following levels to be used under the “Affordability of Instalments” attribute:

- 20% of Net Take-home Salary (Identified as easily affordable)
- 35% of Net Take-home Salary (Identified as reasonably affordable)
- 50% of Net Take-home Salary (Identified as not affordable)

3.5.2.3 Loan Repayment Term (Months)

The highest frequency of similar responses identified the following levels to be used under the “Loan Repayment Term” attribute:

- 6 Months (Identified as a short repayment term)
- 12 Months (Identified as a medium repayment term)
- 24 Months (Identified as a long repayment term)

3.5.2.4 Service Quality (Friendliness of service and level of emotional comfort)

Although the importance of “Friendly service” and “Emotional comfort” were tested separately in the pilot study, the results showed that they were ranked contiguously. It is further argued that the level of emotional comfort a micro-finance customer will enjoy will mostly be determined by the quality of the service the customer is likely to have experienced Nexhmi’s (1998). On this basis, it was proposed that both of the above attribute considerations could be grouped into a single attribute under the label of “Service Quality”.

Kotler (2003) motivates that when operating in any service industry, specific attention should be given to the additional 3 P’s in marketing namely “*People*”, “*Physical Evidence*” and “*Process*”. Kotler (2003) continues that because services are mostly delivered by people, the selection, training and motivation of employees ultimately influences the level of satisfaction enjoyed by the customer. Kotler (2003) recommends that service personnel should be selected, trained and groomed to have:

- Competence in the delivery of the service product,
- Good willed, caring and responsive attitudes to customer needs, and
- Problem solving abilities based on applying their own initiative.

Kotler (2003) recommends that service quality can also be influenced by physical evidence and presentation. Physical evidence of the service offering can include the

cleanliness of business establishments, the speed with which services are provided, or any other beneficial manner in which the value proposition is delivered to the customer.

Kotler (2003) continues that service quality is also influenced when different processes are used by different providers to deliver the same service. Examples of process differences in the micro-finance industries may include:

- Cash vs. electronic loan disbursement options,
- Payroll, debit order or Cash repayment options, or
- Different levels of employment considerations applied in underwriting criteria.

Considering the nature of micro-finance transactions in conjunction to the literature reviewed, it is not surprising that the highest frequency of similar responses identified the following levels to be used under the “Service Quality” attribute:

- Incompetent staff (Identified as poor service)
- Friendly competent staff (Identified as good service)
- Friendly competent staff providing a detailed explanation of terms and conditions of the loan agreement (Identified as excellent service)

3.5.2.5 Turnaround time to payout/ disbursement of borrowed fund

The highest frequency of similar responses identified the following levels to be used under the “Turnaround time to payout” attribute:

- Same Day (Identified as quick)
- 2 Days (Identified as reasonable)
- 5 Days (Identified as long)

3.5.2.6 Price of the Product (TCOC Price as % of Amount Borrowed)

With consideration to the DTI’s year 2000 Interest Rate study that revealed that that less than 10% of micro-finance customers knew the interest rate that they were repaying, the

price of the product, also termed the total cost of credit (TCOC) was presented as a percentage of the original loan amount to be repaid in addition to the original amount of funds received (www.mfrc.co.za, 2005b).

For example, a client who borrows R 5,000 over a period of 12 months at an annual effective interest rate of 60% with all fees and charges included will need to repay a total of R 6,769.52 over a period of 12 months (Instalment of R564.13 per month)

It was feared that this effective interest rate concept may have been difficult to comprehend for micro-finance customers with limited education levels. It was therefore decided that the R 1,769.52 total cost of credit (TCOC Price) in the above example be expressed as a more easily understood percentage of the original amount borrowed, as illustrated below.

$$\begin{array}{lclclcl} \text{TCOC Price} & = & \frac{\text{R } 6,796.52 - \text{R } 5,000}{\text{R } 5,000} & = & \frac{\text{R } 1,769.52}{\text{R } 5,000.00} & = & 35\% \\ \text{as \% of amount} & & & & & & \\ \text{borrowed} & & & & & & \end{array}$$

Gardner (2002) indicates that micro-finance institutions charge an effective interest rate of between 15% and 35% per month on loans that are issued with a repayment term of less than 6 months, and an annual effective interest rate of between 20% and 90% per annum for loans between 6 and 36 months. With these interest rates taken into consideration, it is not outside of expectation that the highest frequency of similar responses identified the following levels to be used under the “TCOC Price as % of Amount Borrowed” attribute:

- 10% (Identified as cheap)
- 30% (Identified as reasonable)
- 50% (Identified as expensive)

3.5.3 Reliability and Validity of Research Instruments (Questionnaire)

Face-validity is argued on the basis of the belief that the literature reviewed to formulate the research instrument (questionnaire) as described in section 3.5.2 of this document was published by subject matter experts and that the information provided by the interviewed micro-finance customers were truthful and correct.

3.6 Data Analysis Method

The use of Microsoft Excel, Sawtooth Software and Number Cruncher Statistical Systems (NCSS) were employed for the questionnaire design, data collection and data analysis phases of this research study. (www.sawtoothsoftware.com, 2005)

3.6.1 Conjoint Analysis

The full factorial conjoint analysis method was used to calculate the attribute importances and utility part-worths from the preference ratings indicated by each individual respondent.

Parsimonious design principles were applied to formulate the optimal selection of pair-wise comparisons. Aiming to avoid presenting the respondent with all 216 possible pair-wise comparisons (*containing all possible permutations of the available attribute levels*), the use of the Sawtooth statistical software package was employed to formulate a parsimonious conjoint questionnaire design that used a selection of attribute level comparisons that optimized the degree of differentiation between the two product options presented in each pair-wise comparison. This technique was successfully applied to reduce the number of pair-wise comparisons to a 20 question solution as detailed in (Appendix D).

Importances were calculated on the range of part-worth utility values, indicating the importance of each attribute. Importances are ratio data, and will always total to a 100%, for example:

Table 7 – Calculation of attribute importances

Attribute:		Importance:
Attribute A	=	50%
Attribute B	=	30%
Attribute C	=	20%
		———
		<u>100%</u>

Utility part-worths (Utilities) are scaled to sum to zero within each attribute for each respondent, for example:

Table 8 – Calculation of attribute level utilities

Levels within Attribute A:	Utilities
Attribute level 1	-1.50
Attribute level 2	-0.75
Attribute level 3	+2.25
	———
	<u>0</u>

Negative utility values cannot be interpreted to mean that a particular option is not desired, it simply means that the particular option is less desired relative to the other options presented.

3.6.2 Principal Components Analysis (PCA)

Once the conjoint importances and utilities were calculated for each respondent, this data was used as input into a principal components analysis (PCA).

The objective of using the PCA was to rotate the data in such a way that the maximum variability in the data points would be visible.

Principal component analysis (PCA) is a statistical method that was used to reduce the dimensionality (*number of variables*) of the large number of interrelated variables within the conjoint dataset, whilst retaining as much information about the variation in the data as possible. The PCA output is a set of uncorrelated factors (variables), ordered by the degree of variation in the data explained by each factor (Hintze, 2007).

To optimise the PCA, only the conjoint utilities of two of the three attribute levels present within each conjoint attribute were used for the PCA. This was done because the total of the utilities for all three attribute levels would always sum to zero. Using the conjoint utility scores of only two attribute levels within each attribute therefore increases the PCA's potential to reduce dimensionality and better explain the variation in the dataset.

Varimax rotation was the second PCA optimization technique applied to better explain the degree of variation in the dataset. The Varimax rotation technique is the most popular orthogonal rotation technique and its aim is to rotate the factors present within the data so that new factors are obtained, of which each is highly correlated with only a few of the original variables. The hope was that rotation of the axis would improve interpretation of the components in the data (Hintze, 2007).

3.6.3 Cluster Analysis

The output variables of the PCA is called the factor loadings, and these newly created variables represent the correlation between the, for example, 1st factor and 5th original variable (Hintze 2007). These factor loadings were used to perform a k-means cluster analysis where only the essential information (*or primary factors as determined with PCA*) was considered. The hope was that this approach would assist in increasing the degree of uniqueness of each of the identified clusters.

The k-means clustering algorithm groups the data points into spherical clusters by finding a set of cluster centres; it then measures the total intra cluster variance, and repeats this process until the total intra cluster variance is minimized. The technique divides N observations with P dimensions into K clusters until the intra cluster sum of squares are minimized (Hintze, 2007).

3.7 Reliability and Validity

To facilitate reliability and validity of the conjoint analysis method, the standard error of the conjoint analysis betas was monitored for unacceptable high levels (Orme, 2002b).

The Eigenvalues of each of the factors identified in the PCA were observed, and only the factor loadings of the factors with Eigenvalues of greater than unity (1) were retained for use in the k-means cluster analysis. The retained factors were monitored to cumulatively explain at least 50% of the variability in the data.

The communality values observed from the PCA output indicate how well each variable used in the PCA was predicted by the retained factors. If any of the variables used in the PCA were regressed on the retained factors, the communality value for such a variable would represent the R^2 of the regression equation (Hintze, 2007). Given that an R^2 of 1

indicate perfect predictive power, the communality values for the variables used in the PCA were monitored to be at least above the 0.5 level.

In order to test the validity and reliability of the cluster analysis, the distance of each point to its designated cluster centre was analyzed. To ensure that there was as little as possible ambiguity in the data, the distance to the cluster centroid was compared to the smallest distance to the next cluster centroid (Hintze, 2007). All data points were monitored not to have similar distances to more than one of its nearest cluster centroids.

4 **PRESENTATION AND DISCUSSION OF RESULTS**

The results of the field research are presented and discussed in this chapter. This section includes a discussion of the research results and focus specifically on inferring answers to the research questions.

The discussion describes the sample population and interprets the research results in the following order:

1. Description of research sample
 - 1.1. Demographics
 - 1.2. Intended loan purpose
 - 1.3. Borrowing Status (*Frequency and degree of borrowing*)
2. Description of statistical analysis results
 - 2.1. Conjoint Analysis
 - 2.2. Principal Component Analysis
 - 2.3. Cluster Analysis
3. Response to Research Questions

4.1 Description of research sample

4.1.1 Demographics

The purpose of this section is to describe the demographic composition of the sample.

Figure 3 provides a geographical breakdown of the sample and indicates that the Midrand, Pretoria Central and Roodepoort areas were well represented in the sample, whilst the respondents from the Southdale area only represented 10% of the sample.

Figure 3 – Geographical distribution

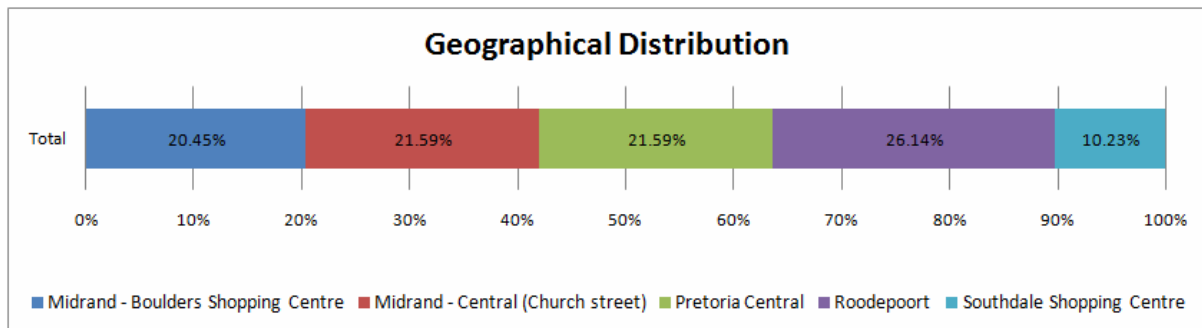


Figure 4 provides an age breakdown for the sample and indicates that the respondents were predominantly aged between 30 and 35 years of age.

Figure 4 – Age distribution

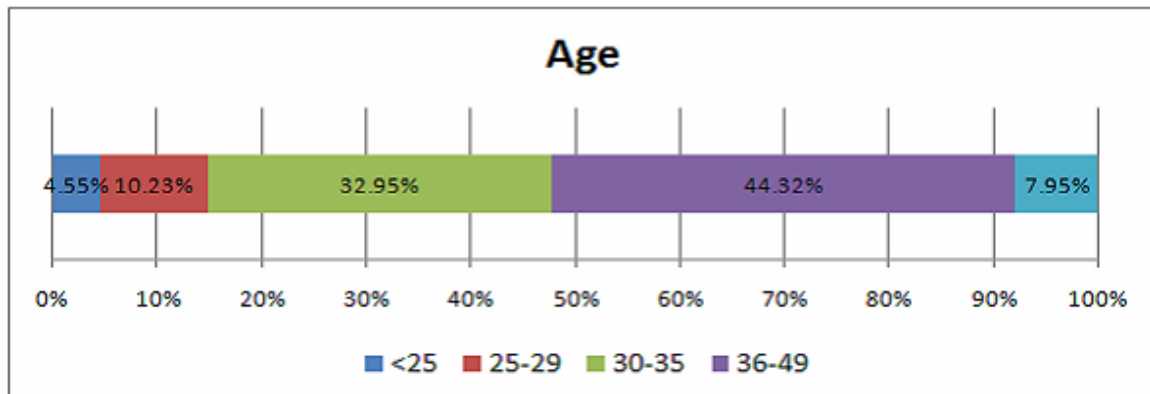


Figure 5 provides a marital status breakdown for the sample and indicates that less than 40% of the sample were married or had a life partner.

Figure 5 – Marital status distribution

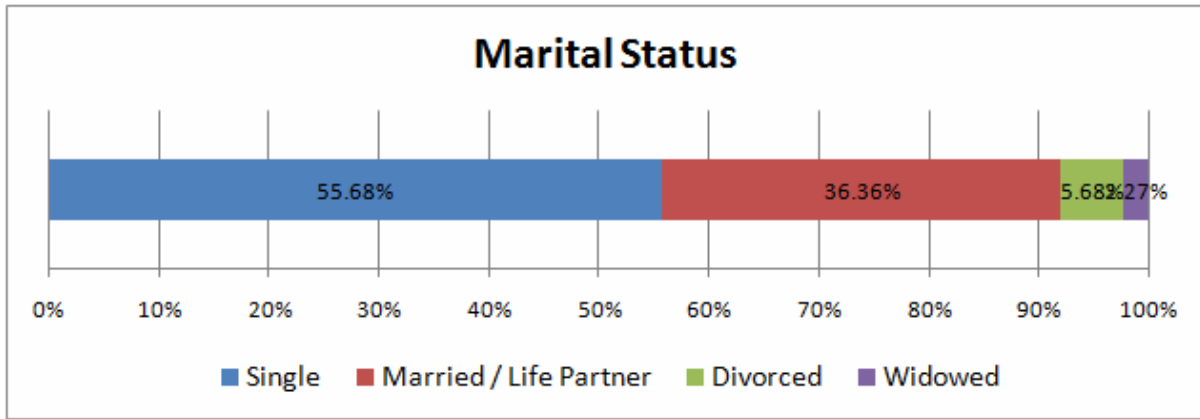


Figure 6 provides a preferred language breakdown for the sample and indicates that Northern Sotho, Venda, and Zulu were the most predominant languages spoken.

Figure 6 – Preferred language distribution

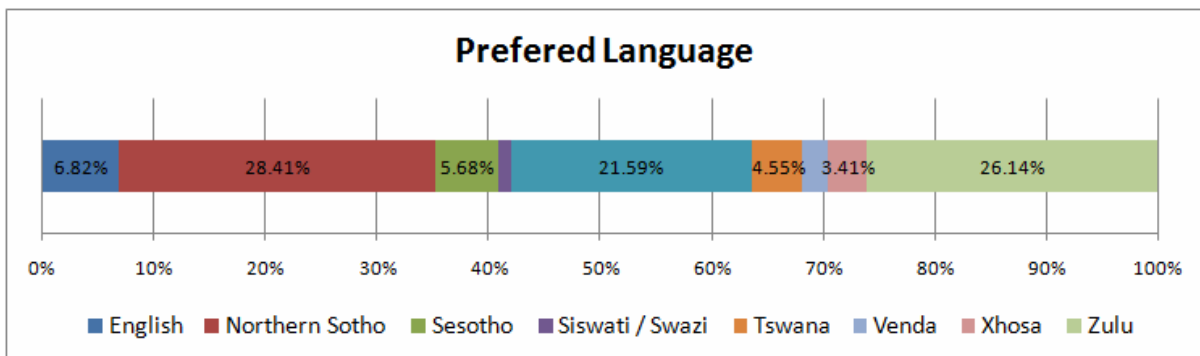


Figure 7 provides an education level breakdown for the sample and indicates that one quarter of the sample's education never reached the level of secondary schooling.

Figure 7 – Highest education distribution

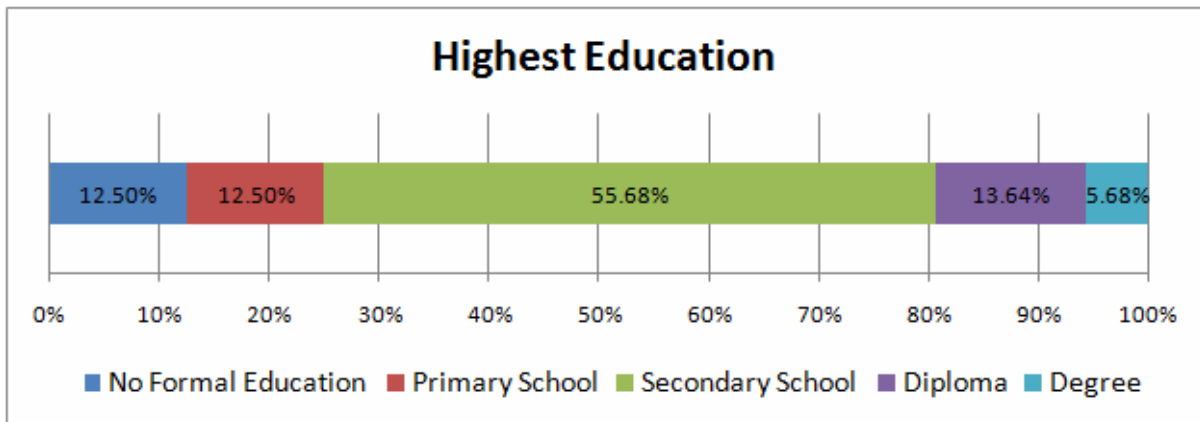


Figure 8 provides an occupational status breakdown for the sample and indicates a high concentration of respondents employed in arguably low skilled occupations such as the domestic worker, building and construction and security industries.

Figure 8 – Occupational status distribution

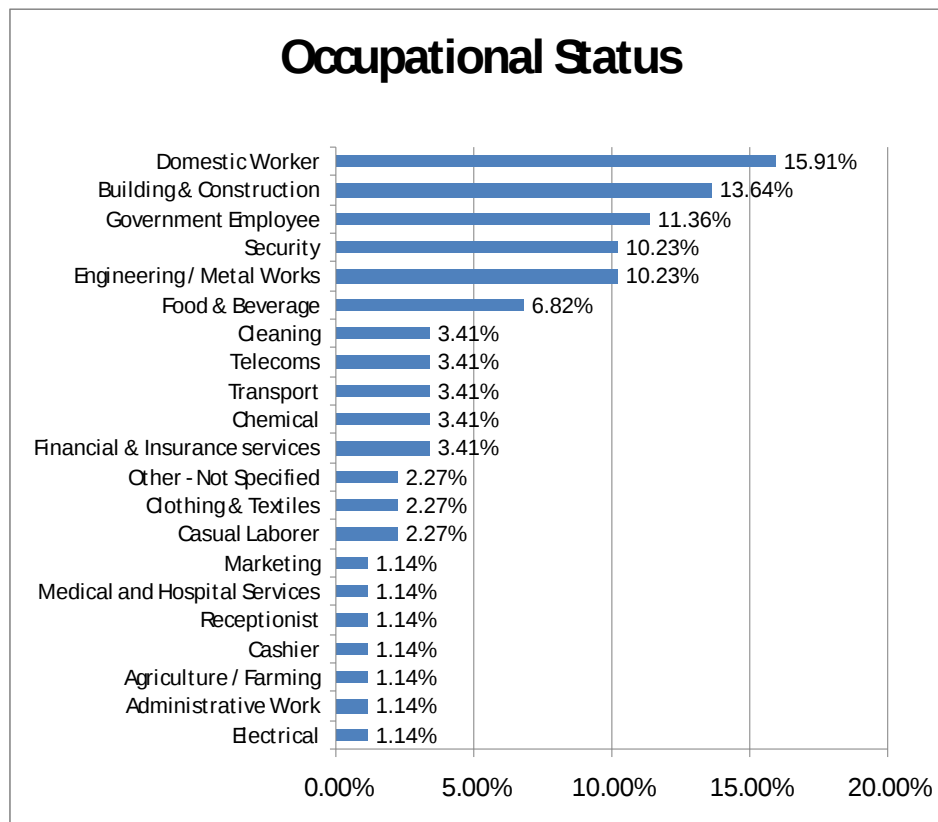
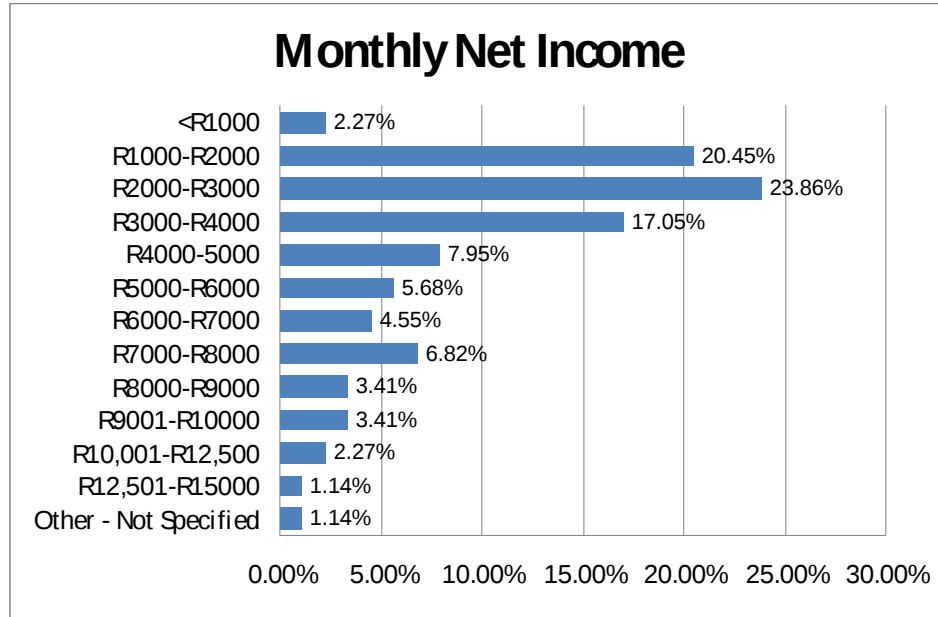


Figure 9 provides a monthly net income breakdown for the sample and indicates that the mean monthly net income for the sample is around the R 3,000 per month level.

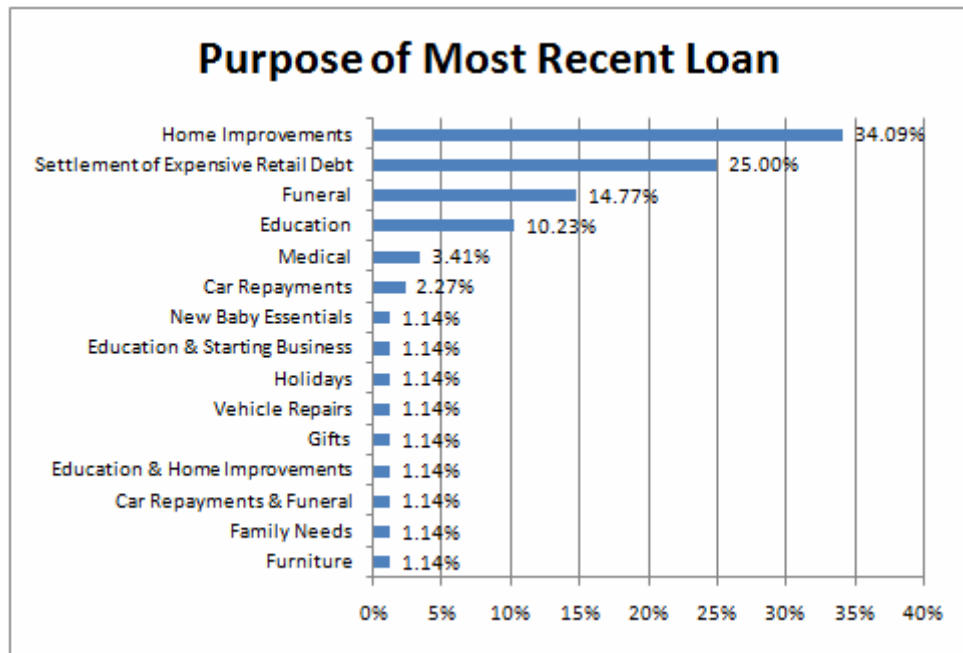
Figure 9 – Monthly net income distribution



4.1.2 Intended Loan Purpose

Figure 10 provides an intended loan purpose breakdown for the sample and indicates that home improvement related expenses, settlement of other debt, funeral costs, and education related expenses were listed by 85% of the respondents as the intended loan purpose.

Figure 10 – Purpose of most recent loan distribution



4.1.3 Borrowing Status

Table 9 provides a borrowing status breakdown for the sample by number of concurrent loans and total credit repayments as a percentage of net income. Table 9 indicates that over 60% of the respondents had credit repayments in excess of 20% of their monthly net income and more than 30% had two or more active loans at the time.

Table 9 – Borrowing status summary

Borrowing Status					
	0-Credit Repayments	0%-20%Credit Repayments	21%-40%Credit Repayments	41%-60%Credit Repayments	Total
0-Loans	3.41%	0.00%	0.00%	0.00%	3.41%
1-Loans	0.00%	29.55%	29.55%	4.55%	63.64%
2-Loans	0.00%	2.27%	19.32%	1.14%	22.73%
3-Loans	0.00%	0.00%	5.68%	2.27%	7.95%
4+Loans	0.00%	1.14%	0.00%	1.14%	2.27%
Total	3.41%	32.95%	54.55%	9.09%	100.00%

4.2 Statistical Analysis Results

4.2.1 Conjoint analysis results

The purpose of this section is to present the averaged conjoint utilities and importances resulting from the conjoint analysis as ran on the collected conjoint questionnaire responses. (Results depicted in table 10)

Table 10 – Average conjoint utilities and importances

Average Utility Values	
Rescaling Method:	Zero-Centered Diffs Total
R 3,000 (Identified as a small loan size)	11.75
R 5,000 (Identified as a medium loan size)	1.13
R 10,000 (Identified as a large loan size)	-12.88
20% of Net Take-home Salary (Identified as easily affordable)	47.52
35% of Net Take-home Salary (Identified as reasonably affordable)	17.4
50% of Net Take-home Salary (Identified as not affordable)	-64.92
6 Months (Identified as a short repayment term)	-11.16
12 Months (Identified as a medium repayment term)	10.96
24 Months (Identified as a long repayment term)	0.2
Incompetent staff (Identified as poor service)	-17.44
Friendly competent staff (Identified as good service)	6.55
Friendly competent staff providing a detailed explanation of terms and conditions of the loan agreement (Identified as excellent service)	10.9
Same Day (Identified as quick)	15.55
2 Days (Identified as reasonable)	-3.42
5 Days (Identified as long)	-12.13
10% (Identified as cheap)	18.06
30% (Identified as reasonable)	-0.67
50% (Identified as expensive)	-17.39
Average Importances	
	Total
Loan Amount	23.83
Affordability	23.54
Term	12.95
Service Quality	13.39
Turnaround Time	12.91
TCOC Price%	13.38

The conjoint results depicted in table 10 can be interpreted as follows:

Conjoint Utilities Section:

- When the average conjoint utility values of the Loan Amount attribute is considered, it is observed that the respondents preferred the R 3,000 option above the R 5,000 option, and the R 5,000 option above the R10,000 option. It is therefore inferred that the respondents on average preferred small loan amounts over medium and large loan amounts.
- Using the same method of interpretation, it can be inferred that respondents prefer easily affordable loan repayments, over reasonably affordable and not affordable loan repayments.
- It is further inferred that respondents preferred loans with repayment terms of 12 months above loans with repayment terms of 6 months or 24 months. Loans with repayment terms of 6 months are observed as the least preferred loan repayment term.
- Excellent service is preferred above good and poor service
- A same-day turn around time is preferred over the two and five day turnaround time options
- Cheaply priced loans are preferred over reasonably priced and expensively priced loans

When conjoint utility values are interpreted, it is important to remember that the conjoint utility values will always sum to a total of zero. Attribute levels with negative utility value does therefore not necessarily mean that they are disliked, there are just less preferred compared to the other attribute level options presented.

Conjoint Importances section:

- When the averaged conjoint importances are considered, it can be observed that the “Loan Amount” attribute carries on average the largest weighting (or the greatest level of importance) in the micro-finance borrower’s decision criteria.
- The “Affordability of loan repayments” attribute is observed as the second most important attribute and carries on average almost the same level of importance in the micro-finance borrower’s decision criteria as the “Loan Amount” attribute.
- “Service Quality” is on average the next most important attribute, and is on average very closely followed by the importance of the “TCOC price”, “Repayment Term”, and “Turnaround Time” attributes.

With the standard error of the conjoint analysis betas confirmed to be at acceptable levels, the results of the conjoint analysis were accepted to provide a valid and reliable indication of the level of importance that the respondents (micro-finance customers) assigned to the various attributes considered when making their micro-finance borrowing decisions.

The existence of unequal attribute importance and utilities across the respondents facilitated the process of identifying and segmenting clusters of respondents that share similar sensitivities and preferences. To best achieve this objective, a principal component analysis (PCA) was used to rotate the conjoint data in such a way that the maximum level of variability between the data points would be visible.

4.2.2 Principal Components Analysis (PCA) results

The purpose of this section is to present the results from the principal components analysis (PCA).

As earlier explained under point 3.6 of this document, the conjoint utilities considered for the PCA were limited to the attribute levels listed in table 11.

Table 11 – Conjoint variables used in PCA

Variables	Factors Communality
R_3_000	0.624775
R_5_000	0.649932
20%_of_Net	0.502645
35%_of_Net	0.704802
6_Months	0.790428
12_Months	0.665137
Incompetent_Staff	0.763122
Competent_Staff	0.678703
Same_Day	0.794560
2_Days	0.711112
10%_TCOC_Price	0.696606
30%_TCOC_Price	0.722006

Table 12 indicates the Eigenvalues of the factors observed within the data, as well as the level of variation in the data explained by each factor.

Table 12 – Eigenvalues resulting from PCA

Eigenvalues after Varimax Rotation				
No.	Eigenvalue	Individual Percent	Cumulative Percent	Scree Plot
1	1.834876	15.29	15.29	
2	1.943722	16.20	31.49	
3	1.369896	11.42	42.90	
4	1.609728	13.41	56.32	
5	1.545606	12.88	69.20	
6	0.950101	7.92	77.12	
7	0.738346	6.15	83.27	
8	0.584882	4.87	88.14	
9	0.429354	3.58	91.72	
10	0.386894	3.22	94.95	
11	0.330198	2.75	97.70	
12	0.276396	2.30	100.00	

To facilitate the level of validity and reliability achieved within the research analysis, only the factors with Eigenvalues of greater than one were considered for the subsequent step in which a cluster analysis was attempted. From table 12, it can be observed that the PCA resulted in a five factor solution, with a cumulative 69.20% of the variability in the data explained by the retained factors.

The Factors Communality values depicted in table 11 represent the extent to which the considered variables are predicted by the retained five factors as identified with the PCA. From table 11, it can be observed that the Factors Communality for the considered variables ranged between approximately 0.5 and 0.8, with 0.7 on average.

4.2.3 Cluster Analysis results

This section presents the results from the k-means cluster analysis as conducted on the factor loadings produced for the five retained factors identified with the principal components analysis.

For practical and statistical purposes, a five cluster solution was formulated using the k-means cluster analysis technique. Table 13 indicates that close to 53% of the variation in the data is explained when using a five cluster solution.

Table 13 – Percentage variation explained

No. of Clusters	Percent of Variation	Bar Chart of Percent
2	83.79	
3	70.49	
4	60.37	
5	52.95	

Table 14 – Mean factor loadings by cluster

Cluster Means					
Variables	Cluster1	Cluster2	Cluster3	Cluster4	Cluster5
SPC1	-1.10	0.21	1.08	-0.31	0.61
SPC2	0.39	-1.03	1.04	-0.29	-0.80
SPC3	-0.45	-0.79	-0.07	1.27	0.03
SPC4	0.43	-0.50	0.02	-0.09	-0.06
SPC5	0.03	-0.66	-0.00	-0.43	1.81
Count	23	16	20	19	10

Table 14 illustrates the cluster differences in the mean factor loadings across all five of the retained factors. Table 14 also provides the distribution of respondents across the five clusters.

Based on the distribution of the respondents across the clusters, the observed differences in mean factor loadings by cluster, and the degree to which the five cluster solution explained the variation in the data, the five cluster solution was accepted for the purposes of this study.

4.2.4 Cluster specific conjoint analysis results

The conjoint analysis results calculated for the customer segments identified with the five cluster solution are detailed below in tables 15 to 21.

Table 15 – Attribute Importances by cluster

Attribute Importances by Cluster					
Attributes	Cluster				
	1	2	3	4	5
Affordability	32.39	13.60	18.37	24.96	25.13
Loan Amount	16.77	48.88	25.51	21.29	10.83
Term	14.72	12.70	12.95	12.37	11.63
Turnaround Time	13.37	9.06	11.95	17.80	12.97
TCOC Price	11.51	9.24	15.48	13.19	17.50
Service Quality	11.24	6.51	15.74	10.38	21.94
Total	100.00	100.00	100.00	100.00	100.00

Table 15 presents the attribute importances across the five clusters. Attribute importances always sum to 100%, and the attributes with high importance values can therefore be regarded as relatively more important than the attributes with lower importance values.

The conjoint attribute importances presented in table 15 characterises cluster 1 as being highly conscience of the affordability of the loan repayments they are offered. Cluster 2 is observed to be primarily focused on the loan amount offered. Cluster 3 is observed to illustrate a more balanced approach and regards the loan amount, the affordability of repayments, the service quality and the price of the credit as the important attributes to be considered when selecting a micro-finance provider. Cluster 4 is observed to have a high regard for the affordability of the loan repayments and the loan amount offered, but cluster 4 respondents also illustrated that they regard the turnaround time within which the transaction is concluded as almost equally important. Cluster 5 is observed to consider the affordability of the loan repayment repayments, the quality of the service offering, and the price of the credit as the most important attributes when selecting a micro-finance provider.

Tables 16 to 21 provide an insight into the average attribute utility scores for each attribute level across the five clusters for all of the tested attributes. Attributes levels with positive utility scores indicate that they are more preferred compared to attribute levels with lower or negative attribute utility scores.

Table 16 – Average loan amount attribute level utilities by cluster

Average Loan Amount attribute level utilities by cluster					
Attribute levels	Cluster				
	1	2	3	4	5
R 3 000	(23.17)	141.09	(7.02)	(36.41)	(11.99)
R 5 000	(22.75)	(0.91)	58.38	(16.81)	(1.24)
R 10 000	45.92	(140.18)	(51.36)	53.22	13.23
Total	0.00	(0.00)	(0.00)	0.00	0.00

It is observed from the utility scores listed in table 16 that clusters 1, 2 and 5 have their greatest preference for the largest loan amount option of R10,000. In stark contrast, it is observed that cluster 2 has the greatest preference for the smallest loan amount option of R3,000. Cluster 3 is observed to have the greatest preference for the medium sized loan amount option of R5,000.

Table 17 – Average affordability attribute level utilities by cluster

Average Affordability attribute level utilities by cluster					
Attribute levels	Cluster				
	1	2	3	4	5
20% of Net Income	85.03	25.40	3.58	70.04	42.23
35% of Net Income	21.39	(19.48)	41.05	0.92	38.17
50% of Net Income	(106.42)	(5.92)	(44.63)	(70.96)	(80.40)
Total	(0.00)	(0.00)	(0.00)	(0.00)	0.00

It is observed from the attribute utility scores listed in table 17 that clusters 1, 2, 4, and 5 prefer the lowest affordability option of loan repayments at around 20% of their net income, with clusters 1 and 5 being more open to the option of loan repayments at around 35% of their net income. Cluster 3 is observed to be accepting of loan repayments at around 35% of their net income.

Table 18 – Average repayment term attribute level utilities by cluster

Average Repayment Term attribute level utilities by cluster					
Attribute levels	Cluster				
	1	2	3	4	5
6 Months	(21.51)	(31.80)	(11.14)	38.15	(16.76)
12 Months	29.65	19.72	4.59	(30.05)	16.44
24 Months	(8.15)	12.08	6.55	(8.10)	0.31
Total	(0.00)	0.00	(0.00)	0.00	0.00

The attribute utility scores presented in table 18 indicate that clusters 1, 2, and 5 prefer their loan repayment terms to be at around 12 months, with cluster 3 respondents

preferring longer loan repayment terms of around 24 months. Cluster 4 respondents are observed to have a high preference for short term loans of around 6 months.

Table 19 – Average service quality attribute level utilities by cluster

Average Service Quality attribute level utilities by cluster					
Attribute levels	Cluster				
	1	2	3	4	5
Incompetent	(9.08)	10.63	10.29	(12.81)	(74.54)
Competent	11.10	(4.09)	(27.15)	1.89	39.11
Excellent	(2.02)	(6.54)	16.86	10.92	35.43
Total	0.00	(0.00)	(0.00)	0.00	(0.00)

The attribute utility scores presented in table 19 indicate that cluster 1 respondents are quite content to just be serviced with competence, with clusters 3, 4 and 5 being more sensitive in their preference for excellent service. The seemingly illogical outcome observed in the utility scores for cluster 2 indicating that they prefer incompetent levels of service may be explained by the low level of importance assigned to the service quality attribute for cluster 2 as indicated in figure 11.

Table 20 – Average turnaround time attribute level utilities by cluster

Average Turnaround Time attribute level utilities by cluster					
Attribute levels	Cluster				
	1	2	3	4	5
Same Day	(17.45)	18.65	5.23	53.88	30.14
2 Days	30.32	(10.86)	(6.83)	(21.73)	(18.87)
5 Days	(12.87)	(7.80)	1.60	(32.15)	(11.27)
Total	0.00	0.00	0.00	0.00	0.00

The attribute utility scores presented in table 20 indicate that only cluster 1 respondents will be accepting loan transaction turnaround times of up to 2 days, with clusters 2, 3, 4, and 5 having a strong preference for same day loan transaction turnaround times.

Table 21 – Average TCOC Price attribute level utilities by cluster

Average TCOC Price attribute level utilities by cluster					
Attribute levels	Cluster				
	1	2	3	4	5
TCOC Price of 10%	1.39	20.87	2.34	15.60	47.51
TCOC Price of 30%	18.24	(14.57)	(1.48)	(0.05)	(9.46)
TCOC Price of 50%	(19.63)	(6.30)	(0.86)	(15.55)	(38.05)
Total	(0.00)	(0.00)	(0.00)	(0.00)	0.00

The attribute utility scores presented in table 21 indicate that only cluster 1 respondents will be accepting of a TCOC price of up to 30% of the loan amount, with all remaining clusters preferring the lowest price possible.

4.3 Responses to research questions

4.3.1 Response to Research Question 1

What are the key criteria considered by micro-finance customers to consider when selecting a micro-finance provider?

Following an extensive literature review into the potential key criteria considered by microfinance customers when selecting a micro-finance provider, the identified key criteria was tested through an interview process that involved 12 micro-finance customers. The 12 micro-finance customers were presented with the identified key criteria, and simply asked to rank-order the different criteria in terms of its relative importance when selecting a micro-finance provider. The results of this study are described in more detail under section 3.5.2 of this document. This pilot study identified that the key criteria employed by micro-finance customers when selecting a micro-finance provider, included to following when limited to a selection of the top 6 most important factors:

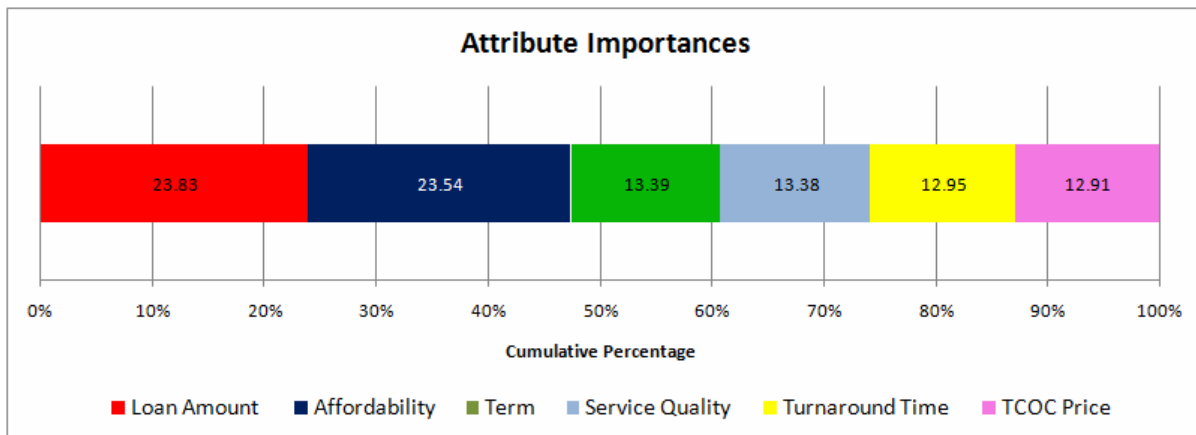
- 1 Loan amount offered (Rand)
- 2 Affordability of instalments (% of Net Take-home Salary)
- 3 Repayment term (Months)
- 4 Service quality (Friendliness of service and level of emotional comfort enjoyed)
- 5 Turnaround time to conclude borrowing process
- 6 Price of the product (TCOC Price as % of Amount Borrowed)

4.3.2 Response to Research Question 2

What is the relative importance of these factors?

To better understand the relative importance of the identified most important factors considered by micro-finance customers when selecting a micro-finance provider, a conjoint analysis study was completed on the responses collected from the sample of 88 micro-finance customers. The average conjoint attribute importances illustrated in figure 8 perfectly validates the rank-ordering of the key factors as identified by the originally interviewed group of 12 micro-finance customers.

Figure 11 – Average attribute importances



Attribute importances always total to 100, with attributes having larger importance values being interpreted as relatively more important compared to attributes with lower importance values.

The formal response to research question 2 is thus that the “Loan Amount” and “Affordability” attributes are on average the most important attributes, with the “Loan Amount” attribute being on average slightly more important than the “Affordability” attribute. Mentioned in order of subsequent importance, the “Repayment Term”, “Service

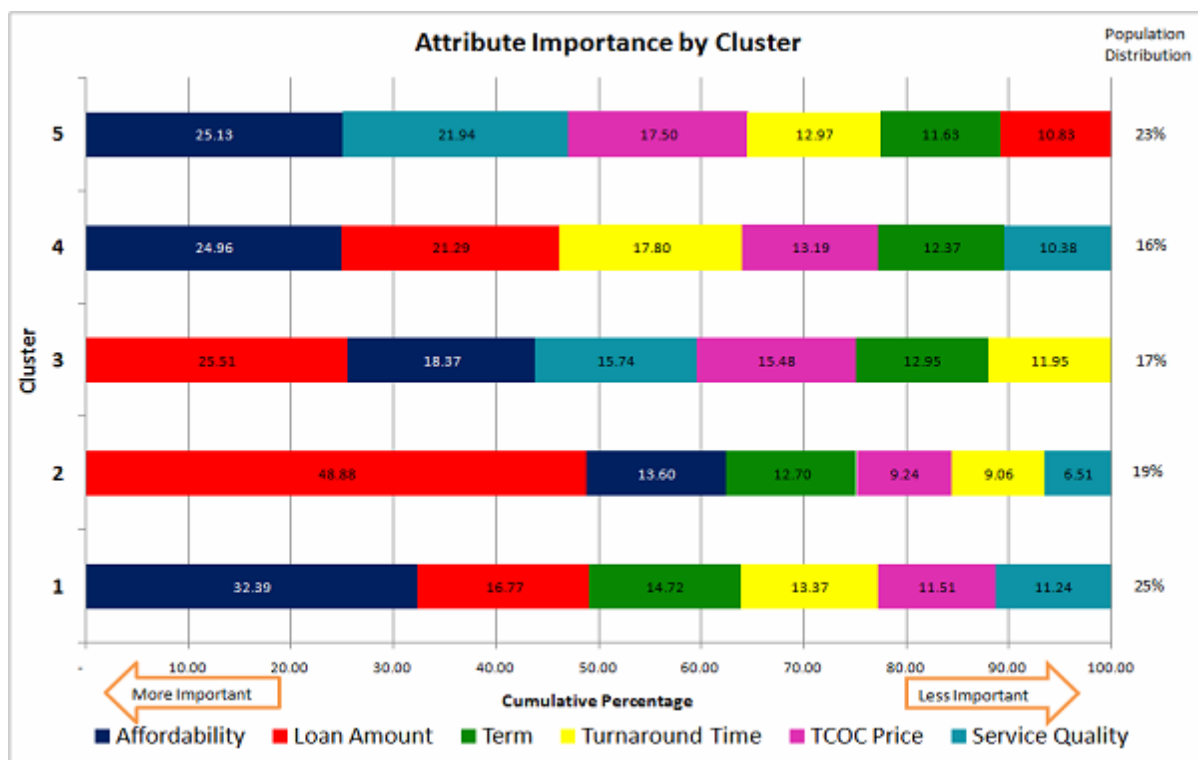
Quality”, “Turnaround Time” and “TCOC Price” attributes have on average much lower but relatively similar levels of importance.

4.3.3 Response to Research Question 3

What segments exist in the micro-finance sector and how do they differ from one another?

Although the average conjoint importances perfectly validated the rank-ordering of the most important factors as provided by the originally interviewed group of 12 micro-finance customers, the average attribute importances are the averages for the full sample of 88 respondents. To investigate and better understand the existence of the different segments within the sample of 88 respondents, a principal components analysis was conducted and subsequently followed by a cluster analysis. The result is the five cluster solution presented in figure 12.

Figure 12 – Attribute importances by cluster



The attribute importance values for each cluster as illustrated in figure 12 indicates the following attribute importance rank-ordering for each cluster. (Table 22)

Table 22 – Attribute importance rank-ordering by cluster

Attribute Importance	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
1st	Affordability	Loan amount	Loan amount	Affordability	Affordability
2nd	Loan amount	Affordability	Affordability	Loan amount	Service quality
3rd	Repayment Term	Repayment Term	Service quality	Turnaround time	TCOC price
4th	Turnaround time	TCOC price	TCOC price	TCOC price	Turnaround time
5th	TCOC price	Turnaround time	Repayment Term	Repayment Term	Repayment term
6th	Service quality	Service quality	Turnaround time	Service quality	Loan amount

The focus of research question 3 was to develop an understanding of which segments exist in the micro-finance sector and to understand how they differ from one another.

In response to research question 3, it is observed that there are at least five segments in the micro-finance industry illustrating the following differences in sensitivity and preference to the factors influencing their choice of micro-finance provider.

Cluster 1

Cluster 1 respondents represent 25% of the sample and identified in order of importance the affordability of loan repayments, the loan amount offered, and the duration of the

repayment term as the most important criteria employed when selecting a micro-finance provider. (Figure 12)

It can be observed from table 17 that cluster 1 prefer the affordability of their loan repayments to be at the 20% of net income level. Table 17 also indicates that cluster 1 could sustain loan repayments of around 35% of net income, and that loan repayments of 50% of net income would simple not be affordable.

From table 16, it can be observed that cluster 1 prefers larger loan amounts of around R10,000, and table 18 indicates that the most preferred repayment term is 12 months.

With consideration to these observations, cluster 1 will from hereon also be referred to as the ***“Affordability and repayment term conscious big loan amount borrowers”*** segment.

Cluster 2

Cluster 2 respondents represent 19% of the sample and identified the loan amount offered as the single most important criteria employed when selecting a micro-finance provider. (Figure 12)

But unlike cluster 1, who illustrated a preference for larger loan amounts around the R10,000 level, cluster 2 has a strong preference for micro-finance providers that offer smaller loan amounts of around R3,000. (Table 16)

Loan repayments above 20% of net income are negatively accepted by cluster 2 respondents.

With consideration to these observations, cluster 2 will from hereon also be referred to as the ***“Affordability constrained small loan amount borrowers”*** segment.

Cluster 3

Cluster 3 represent 17% of the sample and is observed for listing its most important criteria as the loan amount, the affordability of repayments, the service quality, and the TCOC price of the credit. (Figure 12)

Table 8 indicates that cluster 3 prefers medium sized loan amounts of around R5,000, with the affordability of their repayments expected at the 35% of net income level. (Table 17)

Cluster 3 also expects a level of service quality that is friendly and above that of just sheer competence. (Table 10)

Table 21 indicates that cluster 3 prefers the TCOC price of the credit to be at the cheapest level tested at around 10% of the original loan amount.

Cluster 3 will from hereon also be referred to as the ***“Service and price sensitive medium loan amount borrowers”*** segment.

Cluster 4

Cluster 4 represent 16% of the population and indicated the loan amount, affordability of repayments, and the turnaround time conclude the micro-finance transaction as its important criteria employed when selecting a micro-finance provider. (Figure 12)

Cluster 4 prefers larger loan amounts around the R10,000 level. (Table 16)

Table 17 indicates that cluster 4 prefers the affordability of loan repayments to be set at the lowest level of around 20% of net income.

Table 21 confirms that cluster 4 has a strong preference for same day turnaround times.

Cluster 4 will from hereon also be referred to as the “***Impatient affordability constrained big loan amount borrowers***” segment.

Cluster 5

Cluster 5 represent 23% of the sample and indicated affordability of loan repayments, service quality, and the TCOC price of the credit as its most important criteria considered when selecting a micro-finance provider. (Figure 12)

Cluster 5 prefer loan repayments of around 20% of net income, but table 17 suggests that cluster 5 could sustain loan repayments as high as 35% of net income.

Table 19 indicates that cluster 5 has a strong intolerance for incompetent staff, and prefers being served in a friendly and competent manner.

Cluster 5 prefers the TCOC price of the credit to be as cheap as possible, tested at around 10% of the original loan amount. (Table 21)

Cluster 5 will from hereon also be referred to as the “***Affordability conscious service and price shoppers***” segment.

Table 23 provides a summary of the most prominent needs and preferences characterising each cluster.

Table 23 – Cluster summary of borrowing characteristics

Cluster Summary					
Cluster	% of Sample	Primary Importance	Secondary Importance	3rd Important	4th Important
1	25%	Affordability (35% of Net Income)	Loan Amount (Large - R10,000)	Term (12 months)	
2	19%	Loan Amount (Small - R3,000)	Affordability (20% of Net Income)		
3	17%	Loan Amount (Medium - R5,000)	Affordability (35% of Net Income)	Service (Friendly & Most Competent)	Price (Cheap as possible - 10% of Loan Amount)
4	16%	Loan Amount (Large - R10,000)	Affordability (20% of Net Income)	Turaround Time (Same Day)	
5	23%	Affordability (35% of Net Income)	Service (Friendly & Most Competent)	Price (Cheap as possible - 10% of Loan Amount)	

4.3.4 Response to Research Question 4

How can the specific needs and preferences of each segment be addressed?

Once the needs and preferences are known for each cluster, micro-finance providers will need to know what demographic and other information available at the loan application stage best characterises each cluster. Empowered with the ability to classify each customer into its appropriate segment (or cluster) at the loan application stage, it is argued that micro-finance providers will be in a position to tailor their value propositions and service offerings to better address the needs and preferences of each segment.

To facilitate the classification of micro-finance customers into their appropriate segments, this section will focus on identifying the customer specific demographics, borrowing reasons, and borrowing statuses that best describe the profile of each segment.

Cluster 1 - “Affordability and repayment term conscious big loan amount borrowers”

Respondents in cluster 1 were mainly from the Pretoria and Midrand geographical areas.

Cluster 1 was observed to have the greatest proportion of respondents younger than the age of 30 years old.

Cluster 1 respondents were evenly mixed between Northern Sotho and Zulu speaking individuals.

Around 80% of the respondents in cluster 1 indicated that they were single.

Approximately 80% of cluster 1’s respondents indicated that they attended secondary school, with 33% indicating that they successfully obtained some form of tertiary education

The security industry, followed by the government proved to be the predominant forms of occupation for respondents in cluster 1.

The median monthly net income for cluster 1 respondents were observed at the R3,000 to R4,000 per month level, with the upper quartile observed at the R7,000 to R8,000 level.

Respondents in cluster 1 utilize micro-finance predominantly for home improvement purposes.

Close to 80% of cluster 1 respondents have had a previous micro-finance loan.

Cluster 1 respondents prefer to make their loan repayments via bank debit orders.

Almost half of cluster 1 respondents are paying of more than one micro-finance loan at the same time.

60% of cluster 1 respondents need to make micro-finance related monthly credit repayments of more than 20% of their net income.

Cluster 2 - *“Affordability constrained small loan amount borrowers”*

Respondents in cluster 2 were predominantly from the West-Rand geographical area.

Cluster 2 respondents were predominantly aged between 36 and 49 years of age.

Close to half of cluster 2 respondents were Tsonga speaking individuals.

Almost 20% of the respondents in cluster 2 indicated that they were widowed or divorced.

Cluster 2 had no form of tertiary education, but most respondents indicated that they had attended at least a primary school, and 70% at least a secondary level of schooling.

More than half of the respondents in cluster 2 are employed as domestic workers, and a further 20% of cluster 2 respondents are employed in the building and construction industry.

The median monthly net income for cluster 2 respondents was observed at the R1,000 to R2,000 per month level.

Respondents in cluster 2 utilize micro-finance predominantly to settle other forms of more expensive retail debt.

Almost 90% of cluster 2 respondents have never had a previous micro-finance loan.

Cluster 2 respondents prefer to make their loan repayments in cash.

More than 90% of cluster 2 respondents only have one active loan at any given time.

85% of cluster 2 respondents need to make micro-finance related monthly credit repayments of more than 20% of their net income.

Cluster 3 - *“Service and price sensitive medium loan amount borrowers”*

Cluster 3 had the largest proportion of respondents from the South-Rand geographical area.

Cluster 3 respondents were mostly aged between to be 30 to 49 years of age.

Cluster 3 had the greatest proportion of English speaking individuals, observed at the 25% level.

Respondents from cluster 3 indicated that they were most prone to divorce, with around 15% of cluster 3 respondents having been through a divorce. (The other half of cluster 3 respondents indicated that they were still married)

Approximately 80% of cluster 3's respondents indicated that they attended secondary school, with 20% indicating that they successfully obtained some form of tertiary education.

The government, followed by the engineering and chemical industry was observed to be the predominant forms of occupation for respondents in cluster 3.

The median monthly net income for cluster 3 respondents were observed at the R3,000 to R4,000 per month level, with the upper quartile observed at the R5,000 to R6,000 level.

Respondents in cluster 3 utilize micro-finance predominantly for home improvement purposes as well as for the settlement of other expensive retail debt.

Two thirds of cluster 3 respondents have never had a previous micro-finance loan.

Cluster 3 respondents prefer to make their loan repayments via bank debit orders.

One quarter of cluster 3 respondents are paying of more than one micro-finance loan at the same time.

60% of cluster 3 respondents need to make micro-finance related monthly credit repayments of more than 20% of their net income.

Cluster 4 - *"Impatient affordability constrained big loan amount borrowers"*

Respondents in cluster 4 were mainly from the Pretoria and Midrand geographical areas

Cluster 4 had the greatest proportion of respondents between 25 and 36 years of age.

Cluster 4 had the greatest proportion of Venda and Xhosa speaking individuals, observed at the 20% level.

The marital status of cluster 4 respondents is predominantly single, indicated at the 80% level.

Approximately 70% of cluster 4's respondents indicated that they attended secondary school, with only 7% indicating that they successfully obtained some form of tertiary education.

Occupational statuses in the engineering and construction industries characterises the respondents in cluster 4.

The median monthly net income for cluster 4 respondents was observed at the R2,000 to R3,000 per month level.

Respondents in cluster 4 utilize micro-finance predominantly for home improvement purposes as well as for the settlement of other expensive retail debt.

Half of cluster 4 respondents have never had a previous micro-finance loan.

Cluster 4 respondents prefer to make their loan repayments via bank debit orders.

Around 80% of cluster 4 respondents only have one active loan at any given time.

45% of cluster 4 respondents need to make micro-finance related monthly credit repayments of more than 20% of their net income.

Cluster 5 - *"Affordability conscious service and price shoppers"*

Respondents in cluster 5 were predominantly from the Midrand geographical area.

Cluster 5 had the greatest proportion of respondents over the age of 50 years old.

Northern Sotho was the predominant language spoken by the respondents in cluster 5.

Cluster 5 respondents are fairly evenly balanced between the marital statuses of single and married.

Approximately 75% of cluster 5's respondents indicated that they attended secondary school, with 30% indicating that they successfully obtained some form of tertiary education.

The government, followed by the construction and food & beverage industries best describes the occupational statuses for respondents in cluster 5

The median monthly net income for cluster 5 respondents were observed at the R3,000 to R4,000 per month level, with the upper quartile observed at the R6,000 to R7,000 level.

Respondents in cluster 5 utilize micro-finance predominantly for home improvement purposes.

80% of cluster 5 respondents have had a previous micro-finance loan.

Cluster 5 respondents make 100% of their loan repayments via bank debit orders.

Two thirds of cluster 5 respondents are paying of more than one micro-finance loan at the same time.

70% of cluster 5 respondents need to make micro-finance related monthly credit repayments of more than 20% of their net income.

A summary of the most prominent characteristics profiling each segment is provided in table 24.

Table 24 – Segment profile summary

Segment Profile Summary					
	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
	Affordability and repayment term conscious big loan amount borrowers	Affordability constrained small loan amount borrowers	Service and price sensitive medium loan amount borrowers	Impatient affordability constrained big loan amount borrowers	Affordability conscious service and price shoppers
Geography	Pretoria & Midrand	West Rand	South Rand	Pretoria & Midrand	Midrand
Preferred Language	Northern Sotho & Zulu	Tsonga	English	Venda & Xhosa	Northern Sotho
Age	Younger than 30 years old	36 to 49 years of age	30 to 49 years of age	25 to 35 years of age	Older than 50 years of age
Marital Status	Single	Widowed or Divorced	Divorced	Single	Married
Highest level of Education	Tertiary	Secondary Schooling	Some Tertiary	Secondary Schooling	Tertiary
Top Employer	Security Industry	Domestic Worker Sector	Government	Engineering & Construction	Government
Median Net Income	R3,000 to R4,000	R1,000 to R2,000	R3,000 to R4,000	R2,000 to R3,000	R3,000 to R4,000
Upper Quartile Net Income	R7,000 to R8,000		R5,000 to R6,000		R6,000 to R7,000
Loan Purpose	Home Improvement	Settlement of other Expensive Debt	Home Improvement & Settlement of other Expensive Debt	Home Improvement & Settlement of other Expensive Debt	Home Improvement
Previous Micro-Finance	Yes	No	No	Yes & No	Yes
Preferred Repayment Method	Bank Debit Order	Cash	Bank Debit Order	Bank Debit Order	Bank Debit Order
More than 1 Active Loan	Yes & No	No	No	No	Yes
Loan Repayments greater than 20% of Net Income	Yes	Yes	Yes	No	Yes

The graphical representation of the demographic, borrowing reason, and borrowing behaviour analysis used to characterise each cluster segment in this section, are included in Appendix F.

5 **CONCLUSION AND RECOMMENDATIONS**

This section summarizes the major findings inferred from the research, and focus specifically on formulating a conclusive response to the research problem.

5.1 Research Problem

The research problem is to determine the relative importance's of the borrowing decision criteria of customers in the micro-finance sector in order to aid market segmentation and product design efforts.

The research problem was formulated from the fact that despite increased regulation in the micro-finance sector, poorly educated and insufficiently informed micro-finance borrowers still remained at risk of being pressured into making poor borrowing decisions (Helms and Porteous, 2005). Further significance and support for this type of research was expressed by industry experts and was emphasised through their view that the micro-finance sector had not yet enjoyed the attention of true marketing (Rademaker, 2005).

The following discussion of the research sub problems focused on concluding a feasible response to the research problem and hoped to have the potential of driving competitive strategies, better service delivery, and greater customer education opportunities.

5.1.1 Sub Problem 1

To identify the criteria used by micro-finance customers when making their borrowing decisions.

The literature reviewed identified the quality of the brand, the attractiveness of the product offering, the availability of product alternatives, the service quality, the potential to qualify for future benefits, the convenience of location, and the overall level of

customer centricity perceived about the organisation as some of the possible criteria considered by micro-finance customers when making their borrowing decisions.

In trying to trying to answer the first research question of “*What are the key criteria considered by micro-finance customers when selecting a micro-finance provider?*”, the literature reviewed revealed that when these broad categories of criteria were investigated in more detail, it suggested that micro-finance customers were likely to employ up to fourteen different elements of criteria when making their borrowing decisions. In order to answer the second research question of “*What is the relative importance of these factors?*”, a pilot study was conducted on a sample of 12 micro-finance customers with the focus of establishing a rank-ordering of the identified fourteen elements of criteria.

Listed in the order of relative importance as obtained from the outcome of the pilot study, the fourteen elements of identified criteria included:

1. The magnitude of the loan amount offered (Walters, 2004; Kotler, 2003; Nexhmi, 1998)
2. The affordability of instalment repayments offered (Walters, 2004; Kotler, 2003; Nexhmi, 1998).
3. The duration of the repayment terms offered (Walters, 2004).
4. The level of competence and friendliness with which services were rendered (Walters, 2004; Nexhmi, 1998).
5. The level of emotional comfort enjoyed when approaching the micro-finance provider for financial assistance (Walters, 2004).
6. The turnaround time taken to conclude the borrowing process from contract signature to the receipt of funds (Kotler, 2003).
7. The price at which the micro-finance products are offered, often expressed as the total cost of credit (Walters, 2004; Kotler, 2003; Nexhmi, 1998).
8. The market perception of the brand (Kotler, 2003; Nexhmi, 1998).
9. The micro-finance provider’s history and reputation of applying fair and legal collection practices (Helms & Porteous, 2005).

10. The convenience of the branch locations and whether or not the micro-finance brokers (also called mobile sales agents) would be willing to come to their place of work in order to conclude the micro-finance loan agreement (www.mfrc.co.za, 2005a).
11. The level of simplicity and ease with which the application process is concluded (Kotler, 2003).
12. The availability of alternative product offerings (Kotler, 2003).
13. The potential of qualifying for future benefits such as larger repeat loans over longer repayment terms or more progressive product offerings such as credit cards (Matin et al, 1999).
14. The level of customer centricity applied by the micro-finance providers to differentiate and assign their product offerings (Nexhmi, 1998; Helms and Porteous, 2005).

The nature of the subsequent conjoint study employed did not allow for all fourteen elements of the listed criteria to be included in the research and with the competent service, friendliness and emotional comfort elements grouped into a single service quality element, only the following six elements were prioritised and selected for testing in the conjoint study:

1. Loan amount offered (Rand)
2. Affordability of instalments (% of Net Take-home Salary)
3. Repayment term (Months)
4. Service quality (Friendliness of service and level of emotional comfort enjoyed)
5. Turnaround time to conclude borrowing process
6. Price of the product (TCOC Price as % of Amount Borrowed)

The conjoint study incorporated the responses of 88 individual micro-finance customers and perfectly validated the rank-ordering of the top six elements the pilot study originally identified as the key criteria considered by micro-finance customers when selecting a micro-finance provider. The average attribute importance values resulting from the conjoint study as detailed in table 25 below and provides a conclusive rank-ordered list of the most important criteria employed by micro-finance customers when making their borrowing decisions.

Table 25 – Average attribute importances of micro-finance decision criteria

Priority	Attribute	Average Importance Value
1.	Loan amount	23.83
2.	Affordability	23.54
3.	Repayment term	12.95
4.	Service quality	13.39
5.	Turnaround time	12.91
6.	TCOC Price	13.38

5.1.2 Sub Problem 2

To segment micro-finance customer groups along the illustrated differences in their borrowing behaviour.

To answer the third research question of “*What segments exists in the micro-finance sector and how do they differ from one another?*”, a principal components analysis was first run on the conjoint utility values to rotate the data in such a way that the maximum variability in the data points would be visible. This was followed by the application of the k-means clustering algorithm to group the micro-finance respondents into groups with similar borrowing needs and preferences.

The research study successfully differentiated between the borrowing needs and preferences of five different segments of micro-finance customers present within the analysed data. An analysis of the most prominent borrowing characteristics defining each of the five identified segments facilitated the following naming to be applied for the labelling of the segments:

1. Affordability and repayment term conscious big loan amount borrowers
2. Affordability constrained small loan amount borrowers
3. Service and price sensitive medium loan amount borrowers
4. Impatient affordability constrained big loan amount borrowers
5. Affordability conscious service and price shoppers

5.1.3 Sub Problem 3

To develop an understanding of how product features may be applied to aid in the design and optimization of customer segment specific product strategies

To facilitate answering the fourth research question of “*How can the specific needs and preferences of each segment be addressed*”, a profiling of each segment was formulated along their demographic, borrowing reason, and borrowing behavioural characteristics for the purposes of identifying the different types of micro-finance customers at the loan application or later stages of the service offering.

The profiling of the “***Affordability and repayment term conscious big loan amount borrowers***” segment indicated that they were likely to be single, younger than 30 years of age, and had the potential to earn between R7,000 and R8,000 per month. This segment was also likely to have more than one active loan with their total loan repayments likely to be in excess of 20% of their net income. The providers of micro-finance products may wish to facilitate loan consolidation as an option for this segment.

The “***Affordability constrained small loan amount borrowers***” segment were likely to be widowed or divorced, between 36 and 49 years of age, and limited to an income of between R1,000 and R2,000 per month. This segment was also likely to have only one single loan at a time with loan repayments in excess of 20% of their net income which they preferred making the loan repayments thereof in cash. The providers of micro-finance products may wish to facilitate small recurring cash loans as an option for this segment.

The “***Service and price sensitive medium loan amount borrowers***” segment were likely to be divorced government employees, aged between 30 and 49 years of age, earning as much as R5,000 or R6,000 per month. This segment was likely to only have one loan at a time, with loan repayments in excess of 20% of their net income. The providers of micro-

finance products may wish to facilitate lower interest rate loans over longer repayment terms as an option for this segment.

The “*Impatient affordability constrained big loan amount borrowers*” segment were likely to be single engineering or construction workers, aged between 25 and 35 years of age, and earning between R2,000 or R3,000 per month. This segment was likely to have had a previous micro-finance loan, but only had one loan at a time. The providers of micro-finance products may wish to facilitate express type repeat loans for this segment.

The “*Affordability and price conscious service shoppers*” segment were likely to be married government employees aged older than 50 years of age, earning as much as R6,000 or R7,000 per month. This segment was likely to have more than one micro-finance loan at a time, but only had one loan at a time with loan repayments in excess of 20% of their net income. The providers of micro-finance products may wish to consider loan consolidation offered by well trained and friendly customer service agents for this segment.

The research attempted to provide an understanding of the different segments in the South African Micro-Finance market. It identified the criteria considered by each segment when selecting a micro-finance provider, and illustrated the degree of importance associated with each criteria. The research continued to profile the segments along demographic and other borrowing related characteristics, and explored possible strategies to pursue for better addressing the needs and preferences of each segment.

Empowered with this information, it is argued that micro-finance providers will find themselves in the competitive position of better understanding how their product features may be applied in the design and optimization of their customer segment specific marketing and product strategies.

5.2 Recommendations for micro-finance providers

It is recommended that the providers of micro-finance operating in South Africa validate the research findings through a process of assessing how their products and services compare against the needs and preferences of the micro-finance customer segments that they choose to target. In this context, it is recommended that the providers of micro-finance evaluate whether their products and services are standard, slightly different, or significantly different compared to its competitors. Wherever differences are observed, it is recommended that micro-finance providers identify whether these differences are positively or negatively impacting the borrowing attitudes of the customers in the segments that they are targeting.

The providers of micro-finance are further recommended to focus on formulating significantly different product features and services that impacts positively on the borrowing attitudes of their respective customer segments. Gorchels (2003:97) suggests that such strategies will create customer excitement and stimulate demand for the specific products and services.

Conversely, the providers of micro-finance are recommended to wherever possible correct or eliminate any product feature or service that is negatively perceived as being different by their target segments. Priority should be given to addressing the negatively perceived product features and services that are viewed as significantly different compared to that offered by competitors. Gorchels (2003:97) indicate that such differences enrage customers and erode demand for the specific products and services.

5.3 Limitations

The following limitation in the research are acknowledged and highlighted.

- The research instrument (questionnaire) used was completely new and never before used in the micro-finance sector.
- The geographic locations selected to facilitate the research was done for convenience purposes only and it is acknowledged that the views and profiles of the respondents interviewed in the selected geographic areas may not necessarily represent that of the entire micro-finance sector across the whole of South Africa.
- The research only focused on instalment loans as a means of obtaining micro-finance. It is acknowledged that the views of the respondents may have been different had the research been designed to accommodate the features of a credit card or any other means of obtaining access to micro-finance.
- The research was subject to the budgetary and other constraints typically associated with an MBA type research report. It is therefore suggested that before this research is used for any commercial purpose, it must be independently validated at scale.

5.4 Recommendations for further research

Understanding how to better profile and serve customers is a significant source of competitive advantage, but it remains an incredibly large area of study, and only certain elements of this discipline were focused upon for the purposes of this research report.

The following is therefore suggested as potential topics for further research:

- Validation of the research findings specified in this study for different geographic areas across South Africa.
- A study of customer centric strategies applied across the micro-finance segments and evaluation of their success.
- A detailed analysis of how the needs and preferences of customers may vary for the different forms of consumer finance available in South Africa across various segments.
- A detailed analysis of how a better understanding of customer needs and preferences may be used to target certain customer segments in a more profitable and sustainable manner.
- A detailed quantification of the economic potential that well informed customer focused strategies could deliver.

5.5 Final remarks

In today's ever turbulent and increasingly regulated economic environment, the level of customer understanding and focus will separate the successful consumer finance organisations from those who fail.

References

African Bank (2006), www.AfricanBank.co.za, accessed on 15 November, 2006

African bank Strategy Presentation (2006), accessed on 15 November, 2006, www.AfricanBank.co.za/presentations/strategy_presentation.ppt

Albright, S. Winston, W and Zappe, C. (2003) *Data and Decision Making, 2nd Edition*, Pacific Grove, USA, Brooks/Cole – Thompson Learning.

Capitec Bank website (2005), accessed on 12 November, 2005, www.CapitecBank.co.za

Carte, D. (2006) *Big four to take on African bank* accessed on 17 November, 2006, www.moneyweb.co.za/shares/financial_services/998867.htm

Curry, J. (1996) *Understanding Conjoint Analysis in 15 Minutes*, accessed on 22 November, 2005, <http://www.sawtoothsoftware.com/download/techpap/undca15.pdf>

Danziger, P. (2004) *Why People Buy Things They Don't Need – Understanding and predicting consumer behaviour*, Chicago, Dearborn Trade Publishing

Department of Trade and Industry (2005) Proposed *National Credit Bill*, accessed on 30 September, 2005, <http://www.polity.org.za:89/pdf/NationalCreditB18.pdf>

Discovery Health website (2007), accessed on 26 February, 2007, https://www.discovery.co.za/index_login.jhtml?p_content=/dcard/discovery_card.jhtml&p_brand_css=/StyleSheets/screen_card.css

Edgars Marstercard website (2007), accessed on 26 February, 2007, <http://www.edgarsmastercard.co.za>

Gardner, C. (2002) *Micro-Finance South Africa: What went wrong now?*, Micro-finance best practices seminar – April 2002, accessed on 24 November, 2005, <http://www.acia.sun.ac.za/projects/conferences/2002/MicroF/seminarbookletfomated.pdf>

Gorchels, L. (2003) *The Product Manager's Field Guide – Practical tools, exercises, and resources for improved product management*, New York, McGraw-Hill

Government Gazette (2006) *National Credit Act*, accessed on 16 November, 2006, <http://www.info.gov.za/gazette/regulation/2006/28864.pdf>

Helms, B. and Porteous, D. (2005) *Protecting Micro-finance Borrowers*, accessed on 11 October, 2005, http://www.cgap.org/docs/FocusNote_27.pdf

Hintze, J. (2007) *NCSS Statistical Systems: User Guide IV*, accessed on 15 September, 2008, <http://itchy.icw.com/ncss/NCSSUG4.pdf>

Kotler, P. (2003) *Marketing Management*, eleventh edition, New Jersey, Prentice-Hall, Inc.

Lamb, C. Hair, J. McDaniel, C. Boshoff, C. and Terblanche, N. (2002) *Marketing*, Cape Town, Oxford University Press

Lind, D. Marshal, W. and Wathen, S. (2006) *Chapter 15 – Chi-Square Applications, Basic Statistics for Business and Economics, 5th Edition*, McGraw-Hill, Singapore, pg. 464-481.

Malhotra, N.K. (1996) Chapter 20: Cluster Analysis, *Marketing Research: An Applied Orientation, 2nd Edition*, Upper Saddle River: Prentice Hall, pp. 670 - 692

Matin, I. Hulme, D. and Rutherford, S (1999) Paper No 9: *Financial Services for the Poor and Poorest: Deepening Understanding to Improve Provision*, Finance and

Development Research Program: Working Paper Series, University of Manchester, accessed on 09 October, 2005,

MFRC website (2005b) *DTI Interest Rate Study (Year 2000)*, accessed on 26 November, 2005, http://www.mfrc.co.za/files/report_for_dti.zip

MFRC website (2005a) *19th Published Industry Statistics*, <http://www.mfrc.co.za/detail.php?s=392>, accessed on 11 October, 2005,

Nexhmi, R. (1998) *Can the relational banking model explain the role of trust in bank to client relationships?*, Curtin University of Technology, accessed on 20 November, 2005, <http://130.195.95.71:8081/www/ANZMAC1999/Site/N/Nexhmi.pdf>

Orme, B. (1998) *Sample Size Issues for Conjoint Analysis Studies*, accessed on 23 November, 2005, <http://www.sawtoothsoftware.com/download/techpap/samplesz.pdf>

Orme, B. (2002a) *Interpreting Conjoint Analysis*, accessed on 23 November, 2005, <http://www.sawtoothsoftware.com/download/techpap/interpca.pdf>

Orme, B. (2002b) *Analysis of Traditional Conjoint using Microsoft Excel: An Introductory Example*, accessed on 23 November, 2005, <http://www.sawtoothsoftware.com/download/techpap/caexcel.pdf>

Orme, B. (2003) *Which Conjoint Method Should I Use?*, accessed on 24 November, 2005, <http://www.sawtoothsoftware.com/download/techpap/whichmth.pdf>

Orme, B. (2006) *Traditional Conjoint Analysis with Excel*, accessed on 23 May, 2007, <http://sawtoothsoftware.com/download/techpap/caexcel.pdf>

PASA website (2005) *Introduction of a new early debit order system by the clearing banks*, accessed on 13 October, 2005, <http://www.pasa.org.za/Edos%20announcement%20-%20Clean%20version.pdf>

Porter, M. (1980) ***Industry Structure and Competitive Strategy: Keys to Profitability***, Financial Analysts Journal, July – August 1980, pp. 30 to 41.

Porteous, D. and Hazelhurst, E. (2004) ***Banking on Change: Democratizing Finance in South Africa, 1994-2004 and beyond***, Cape Town, Juta & Co. Ltd.

Rademaker, J. (Credit Executive, African Bank Investments Limited). (2007): Personal communication, 4 May 2007

Rademaker, J. (Credit Executive, African Bank Investments Limited). (2005): Personal communication, 14 October 2005

Walters, Z. (2004) ***Customer Value in Retail Bank: Personal Loans***, Unpublished MBA Dissertation, University of the Witwatersrand, Johannesburg

Welman, J. and Kruger, S (1999) ***Research Methodology for the Business and Administrative Sciences***, Cape Town, Oxford University Press.

Appendix A: Consistency Matrix

No	Sub Problem	Research Question	Source of Theory	Source of Data	Method of Analysis
1.	To identify the criteria used by micro-finance customers when making their borrowing decisions.	1. What are the key criteria considered by micro-finance customers to consider when selecting a micro-finance provider?	-Kotler (2003), -Nexhmi (1998), -Walters (2004), - www.mfrc.co.za (2005), -Matin, Hulme & Rutherford (1999), -Helms and Porteous (2005)	Borrowing Behaviour Questionnaire -Part 1 (Appendix A) -Part 2 (Appendix B) -Part 3 (Conjoint Analysis)	Rank Ordering
		2. What is the relative importance of these factors?	-Lamb, Hair, McDaniel, Boshoff & Terblanche (2002), -Danziger (2004) -Nexhmi (1998) -(Albright, Winston and Zappe 2003) -Orme (2002)	Output data from Sawtooth software used to run conjoint analysis	Choice Based Conjoint Analysis

2.	To segment micro-finance customer groups along the illustrated differences in their borrowing behaviour.	What segments exist in the micro-finance sector and how do they differ from one another?	-Kotler (2003), -Danziger (2004), -Rademaker (2007), -Malhorta (1996b)	-Output data from Sawtooth software used to run conjoint analysis	-Principal Components Analysis -k-means clustering method
3.	To develop an understanding of how product features may be applied to aid in the design and optimization of customer segment specific product strategies.	How can the specific needs and preferences of each segment be addressed?	-Curry (1996) -Lind, Marchal and Wathen (2006) -Gorchels (2003)	-Conjoint importances data by cluster -Demographic data by cluster -Borrowing Reason data by cluster -Borrowing status by cluster	Cluster profiling along borrowing preferences, borrowing reasons, borrowing statuses and demographic dimensions.

Appendix B: Borrowing Behaviour Questionnaire – Part 1

Borrowing Behaviour Questionnaire

Part 1 - Relative importance of considered attributes

Date:

Time:

Place:

Respondent Name:

Contact number:

Question

Please rank the following factors listed below in terms of their relative importance when making your borrowing decision and selection of financial services provider.

Please rank order from 1 to 14 in order of importance.

Convenience (branch location/mobile sales consultants)

Emotional comfort (certainty of being offered a loan)

Individual Risk profile considerations used by provider in the product offer

Brand (Adverts, Promotions, Social Responsibility Initiatives)

Alternative Finance Options

Repayment Term

Turnaround time to conclude borrowing process. (of provider)

Loan Amount (likely to be offered by provider)

Fair and Legal collection practices (of provider)

Friendly Service (of provider)

Simple & straight forward application process (of provider)

Price (Total repayable Vs Capital borrowed)

Instalment (affordability of instalment)

Potential future benefits (larger repeat loans or credit card with provider)

Appendix C: Borrowing Behaviour Questionnaire – Part 2

Borrowing Behaviour Questionnaire

Part 2 - Determination of levels within selected attributes

Client Name

Contact Number

What do you consider to be a loan amount

Small	Medium	Large
R	R	R

What do you consider to be a loan instalment amount

Easily Affordable	Reasonably Affordable	Not Affordable
%	%	%

What do you consider to be a term

Short	Medium	Long
mnths	mnths	mnths

What do you consider to be

Poor Service

Good service

Excellent Service

What do you consider to be a turnaround time to conclude borrowing transaction

Quick	Reasonable	Long

 min / hrs / days

What do you consider to be a price for a loan

Cheap	Reasonable	expensive
%	%	%

(TCOC Price as % of amount borrowed)

Appendix D: Conjoint Questionnaire Design (Optimal pair-wise comparison)

Attribute	Number	Attribute Levels
1) Loan Amount	1	R 3,000 (Identified as a small loan size)
	2	R 5,000 (Identified as a medium loan size)
	3	R 10,000 (Identified as a large loan size)
2) Affordability	4	20% of Net Take-home Salary (Identified as easily affordable)
	5	35% of Net Take-home Salary (Identified as reasonably affordable)
	6	50% of Net Take-home Salary (Identified as not affordable)
3) Term	7	6 Months (Identified as a short repayment term)
	8	12 Months (Identified as a medium repayment term)
	9	24 Months (Identified as a long repayment term)
4) Service Quality	10	Incompetent staff (Identified as poor service)
	11	Friendly competent staff (Identified as good service)
	12	Friendly competent staff providing a detailed explanation of terms and conditions of the loan agreement (Identified as excellent service)
5) Turnaround Time	13	Same Day (Identified as quick)
	14	2 Days (Identified as reasonable)
	15	5 Days (Identified as long)
6) TCOC Price	16	10% (Identified as cheap)
	17	30% (Identified as reasonable)
	18	50% (Identified as expensive)

Question	Left-hand Option Attributes						Right-hand Option Attributes					
	LA1	LA2	LA3	LA4	LA5	LA6	RA1	RA2	RA3	RA4	RA5	RA6
1	-2	-5	-8	-11	-15	-16	1	4	7	12	14	17
2	-2	-6	-7	-12	-15	-17	1	5	8	10	13	18
3	-3	-4	-7	-12	-15	-18	2	6	8	10	14	17
4	-3	-5	-9	-12	-13	-17	2	6	8	11	15	16
5	-3	-6	-9	-11	-14	-16	1	5	8	12	15	17
6	-1	-6	-9	-11	-15	-18	3	5	8	12	13	16
7	-2	-6	-7	-10	-14	-18	1	4	9	11	15	17
8	-1	-6	-8	-12	-15	-18	2	4	7	11	13	17
9	-1	-4	-7	-10	-13	-18	3	5	9	12	14	16
10	-3	-4	-8	-10	-15	-16	2	5	9	11	13	18
11	-1	-5	-7	-10	-13	-17	3	4	9	12	14	18
12	-3	-6	-8	-11	-14	-17	2	4	9	12	15	16
13	-1	-6	-9	-12	-13	-16	3	5	7	11	15	18
14	-3	-4	-8	-11	-13	-17	1	5	7	10	14	18
15	-2	-4	-8	-12	-14	-18	1	6	9	10	13	16
16	-1	-4	-9	-10	-14	-16	2	6	7	12	15	17
17	-2	-6	-8	-12	-13	-18	3	5	7	10	15	17
18	-2	-5	-9	-10	-15	-18	1	4	8	11	14	16
19	-2	-4	-9	-10	-14	-17	3	6	7	11	13	16
20	-1	-5	-7	-11	-14	-16	3	6	8	10	13	18

Appendix E: Research Questionnaire

Date: _____

Name: _____

Tel / Cell No: _____

Section 1:

Please mark the most appropriate option that reflects your demographic status in each column.

Age	Highest Education	Occupation Status	Marital Status	Net Monthly Salary	First / Preferred Language
< 25	No formal education	Government Employee	Single	<R1000	Northern Sotho
25 to 29	Primary School	Agriculture / Farming	Married / Life Partner	R1,000 to R2,000	Sesotho
30 to 35	Secondary School	Telecoms	Divorced	R2,001 to R3,000	Tswana
36 to 49	Diploma	Engineering / Metal works	Widowed	R3,001 to R4,000	Xhosa
50 to 60	Degree	Mining		R5,001 to R6,000	Zulu
60 +	Other – Please Specify	Chemical		R6,001 to R7,000	Tsonga
		Security		R7,001 to R8,000	Venda
		Transport		R8,001 to R9,000	Siswati / Swazi
		Building and Construction		R9,001 to R10,000	Afrikaans
		Clothing and Textiles		R10,001 to R12,500	English
		Medical and Hospital Services		R12,501 to R15,000	Other – Please specify
		Food and Beverage		R15,001 to R20,000	
		Financial and Insurance services		R20,001 +	
		Education			
		Domestic Worker			
		Casual Laborer			
		Unemployed			
		Other – Please Specify			

Section 2:

Please specify the purpose of your most recent loan

Education	
Home Improvements	
Settlement of expensive retail debt	
Holidays	
Gifts	
Transport	
New Baby Essentials	
Funeral	
Medical	
Vehicle Repairs	
Car Repayments	
Other - Please Specify	

Section 3:

Please indicate whether you had a previous micro-loan(s)

Yes	
No	

Please select the option that most accurately reflect your borrowing status

		% of Monthly Net Income committed to Credit Repayments			
		0%-20%	21%-40%	41%-60%	61%-80%+
Number of loans agreements entered into over the last year	1				
	2				
	3				
	4+				

Please indicate the loan repayment method of your most recent loan

Cash	
Bank Debit Order	
Salary / Payroll Deduction	

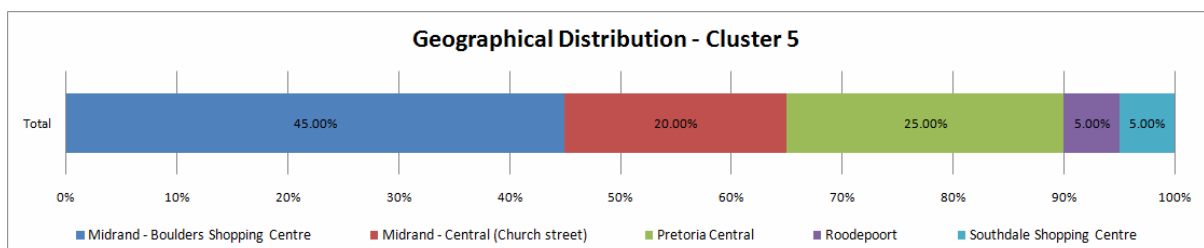
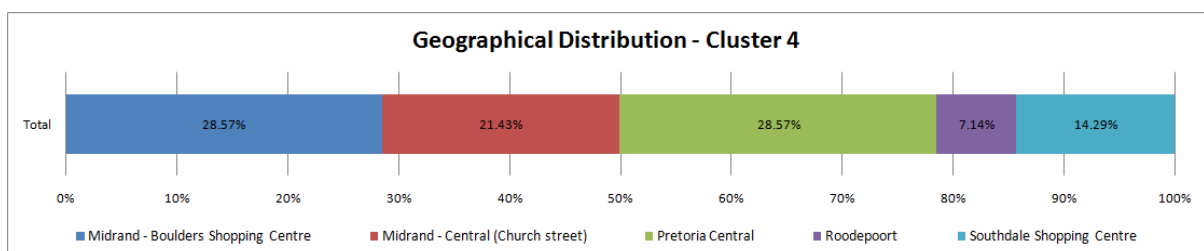
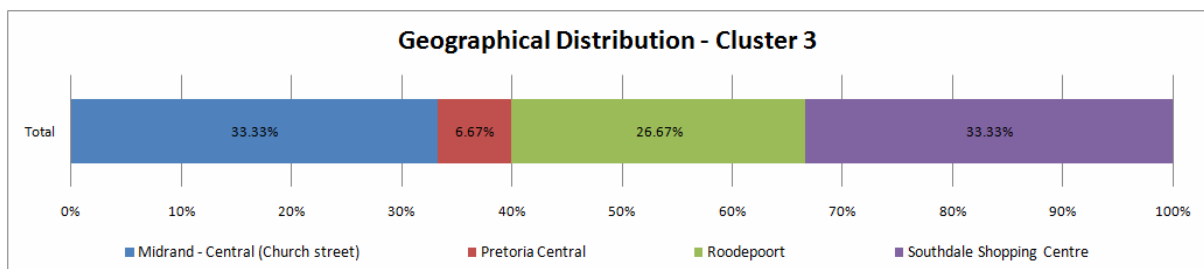
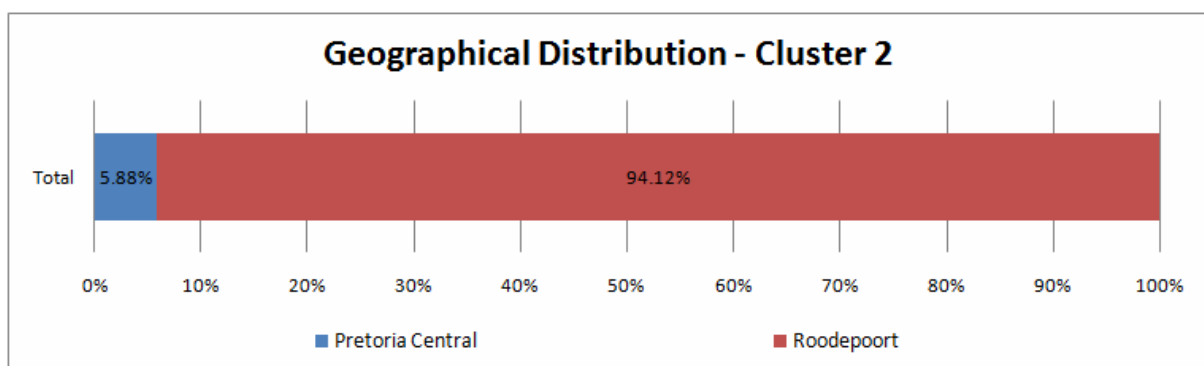
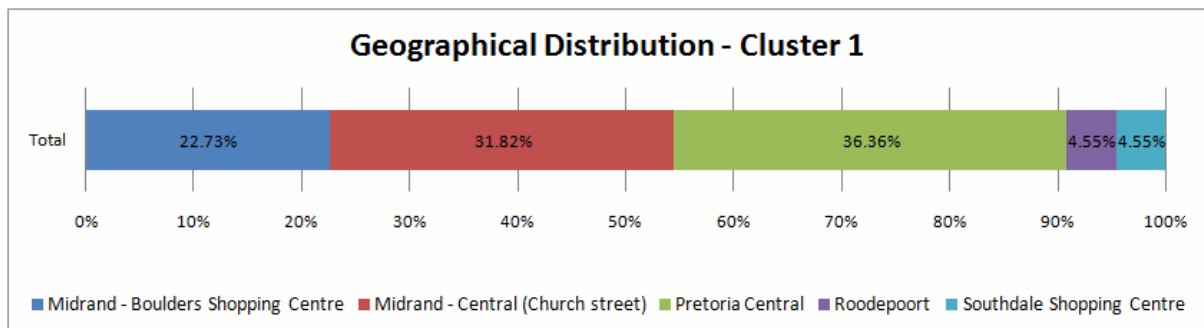
Section 4:

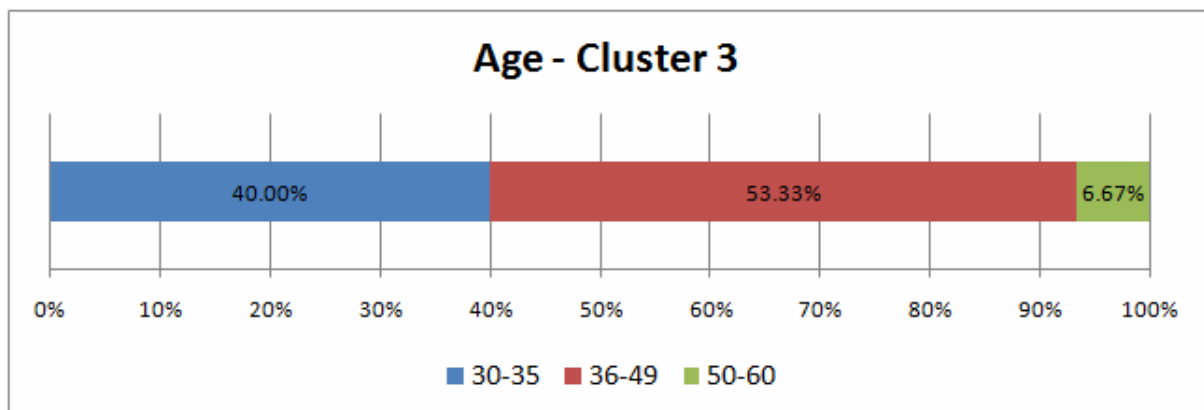
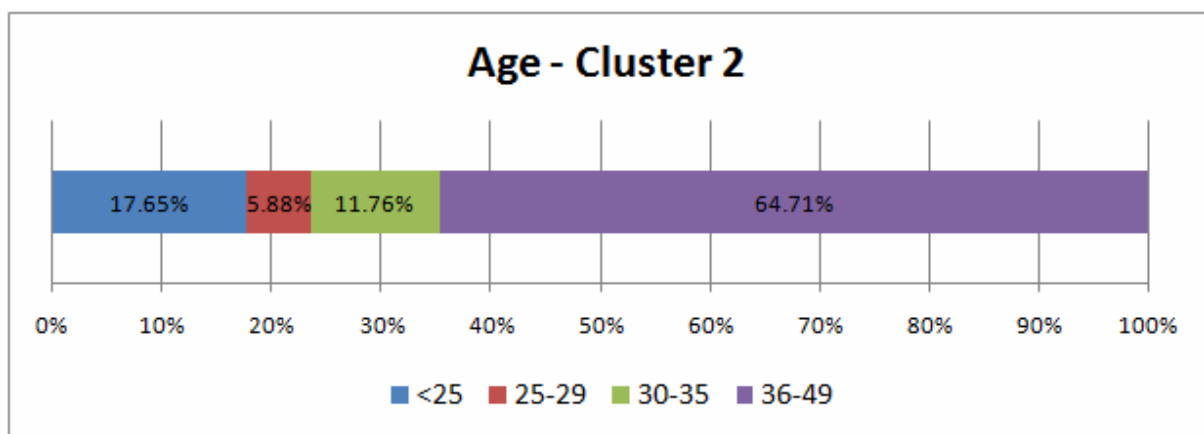
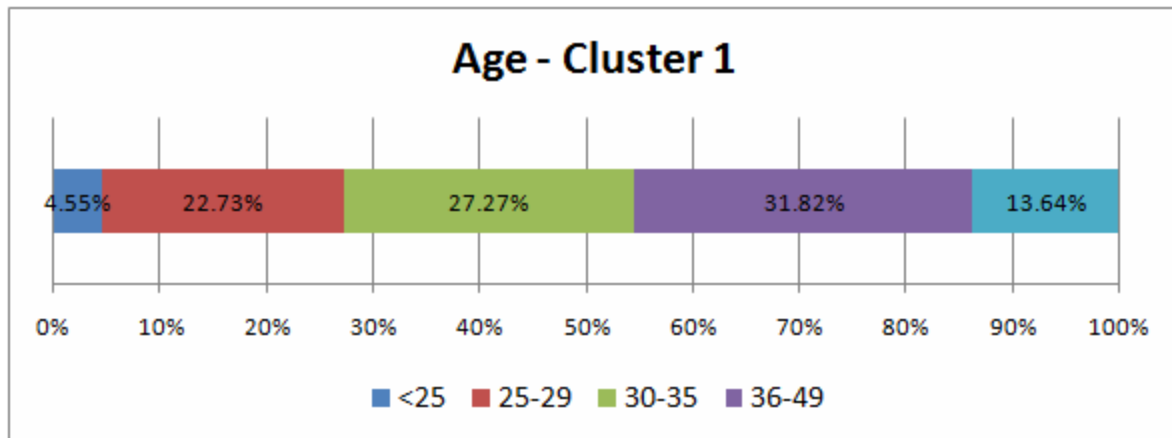
Question 1 of 20										
Which micro finance product would you prefer ?										
Product A						Product B				
Loan Amount = R 5,000						Loan Amount = R 3,000				
Instalment = 35% of Net Salary						Instalment = 20% of Net Salary				
Term = 12 Months						Term = 6 Months				
Service Quality = Friendly competent staff						Service Quality = Friendly competent staff explaining term & conditions				
Turnaround Time = 5 Days						Turnaround Time = 2 Days				
TCOC Price% = 10% of Ln Amount						TCOC Price% = 30% of Ln Amount				
1	2	3	4	5	6	7	8	9		
Strongly Prefer Left					No Preference	Strongly Prefer Right				

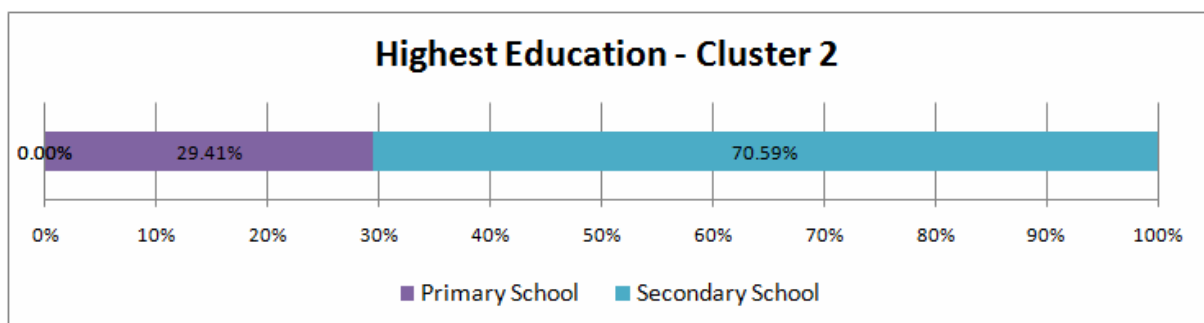
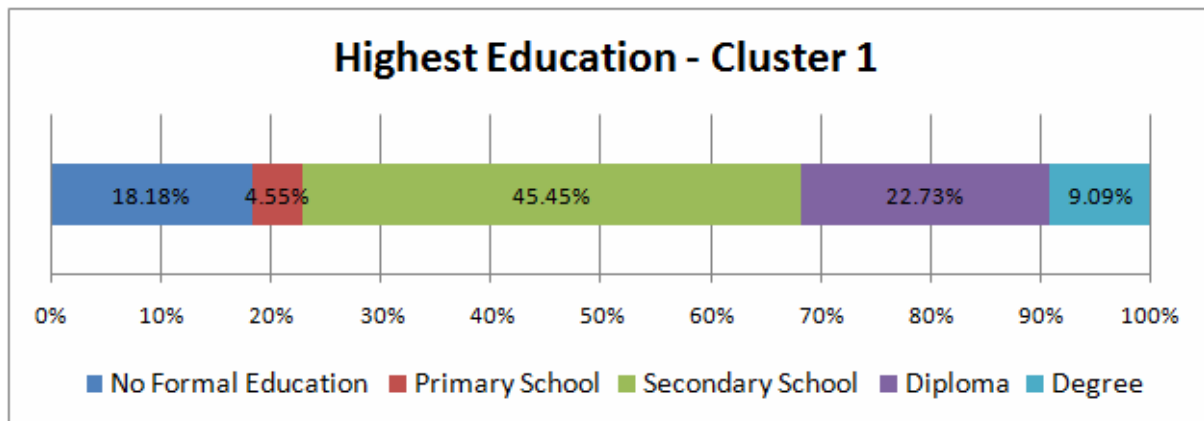
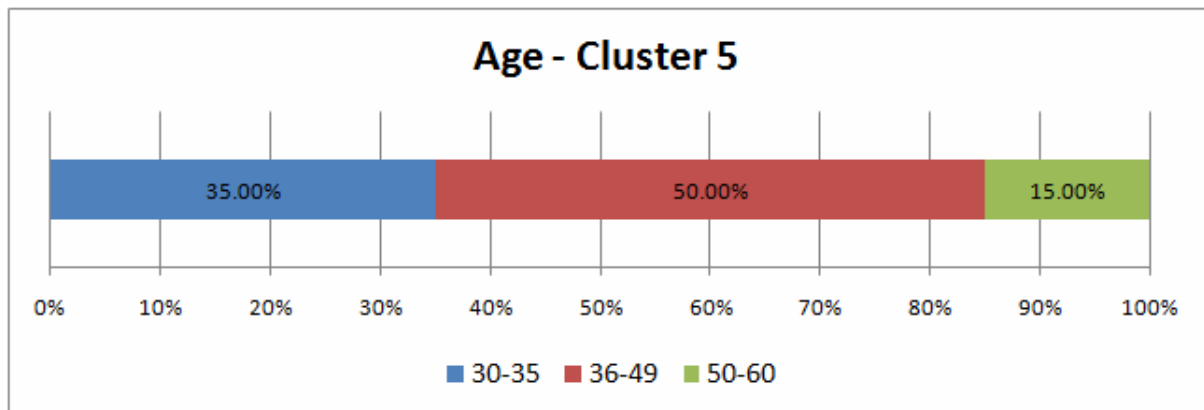
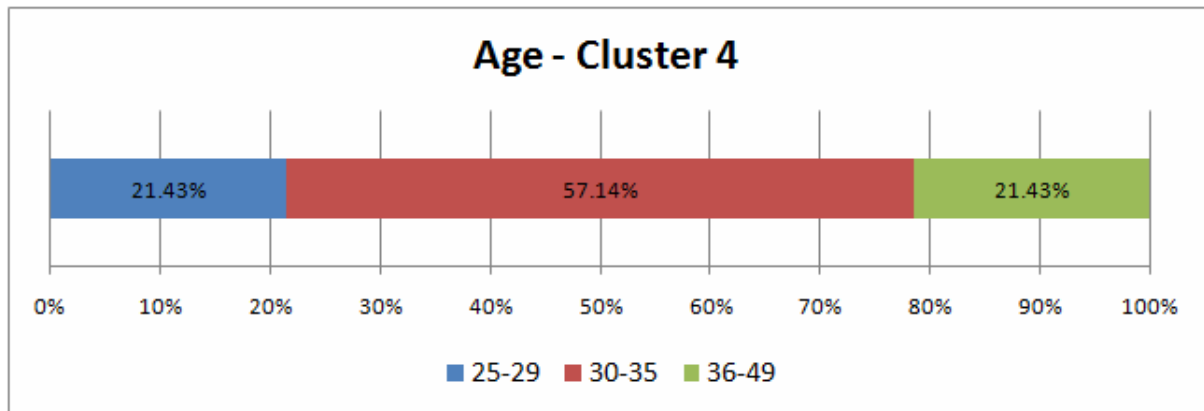
Question 2 of 20										
Which micro finance product would you prefer ?										
Product A						Product B				
Loan Amount = R 5,000						Loan Amount = R 3,000				
Instalment = 50% of Net Salary						Instalment = 35% of Net Salary				
Term = 6 Months						Term = 12 Months				
Service Quality = Friendly competent staff explaining term & conditions						Service Quality = Incompetent staff				
Turnaround Time = 5 Days						Turnaround Time = Same Day				
TCOC Price% = 30% of Ln Amount						TCOC Price% = 50% of Ln Amount				
1	2	3	4	5	6	7	8	9		
Strongly Prefer Left					No Preference	Strongly Prefer Right				

Continued

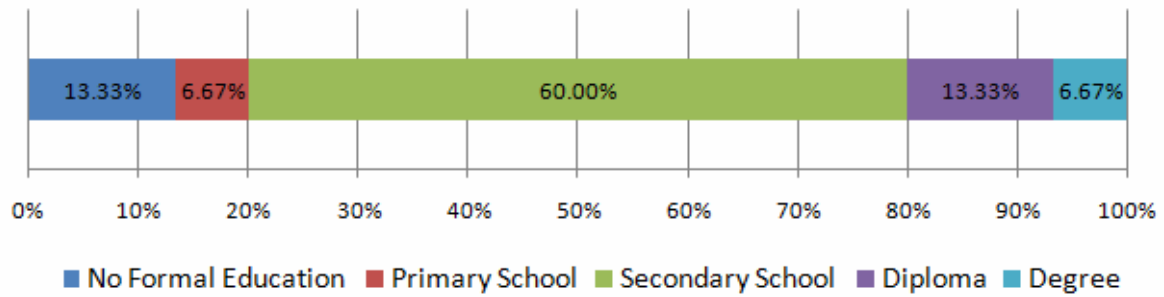
Appendix F: Cluster Specific Characteristic Distributions



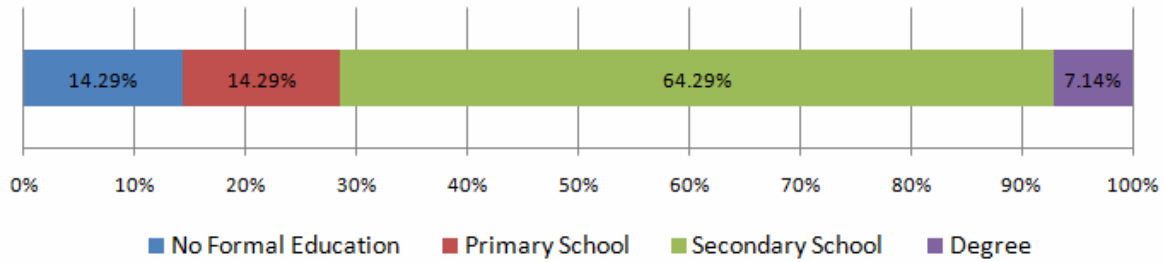




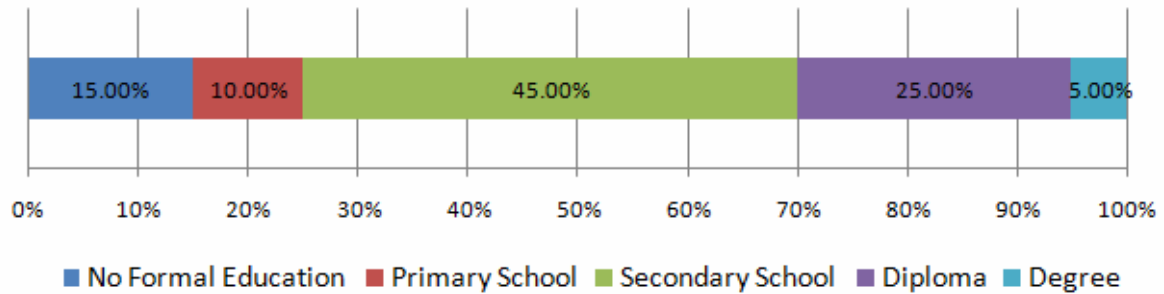
Highest Education - Cluster 3



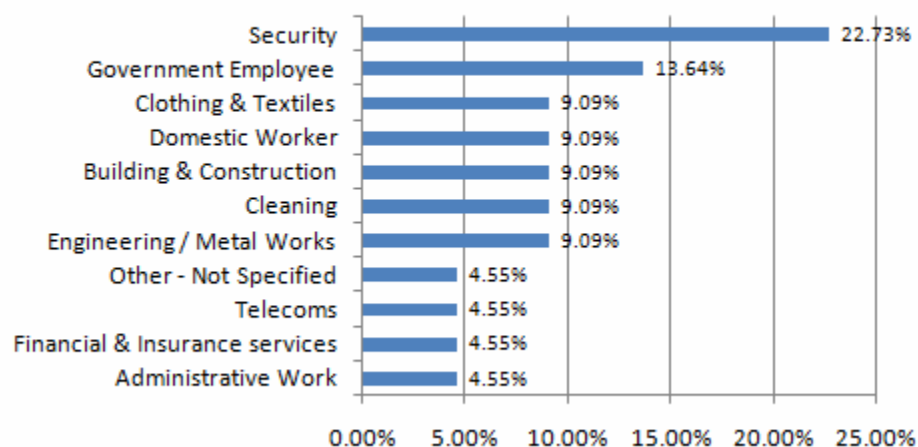
Highest Education - Cluster 4



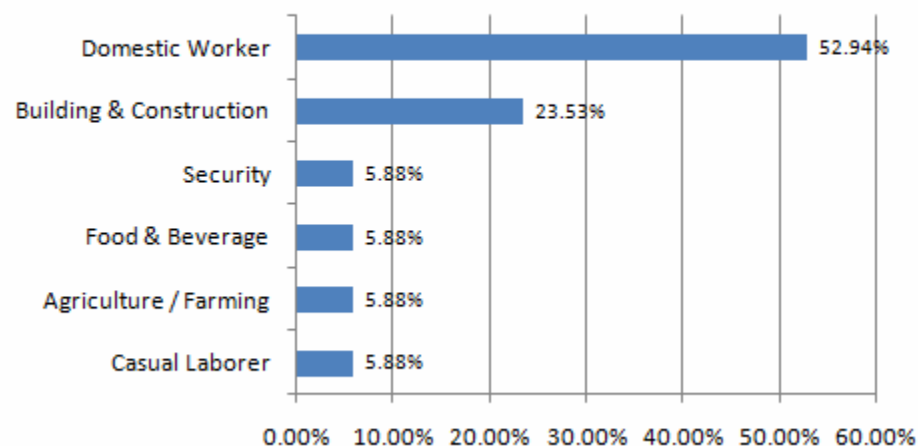
Highest Education - Cluster 5



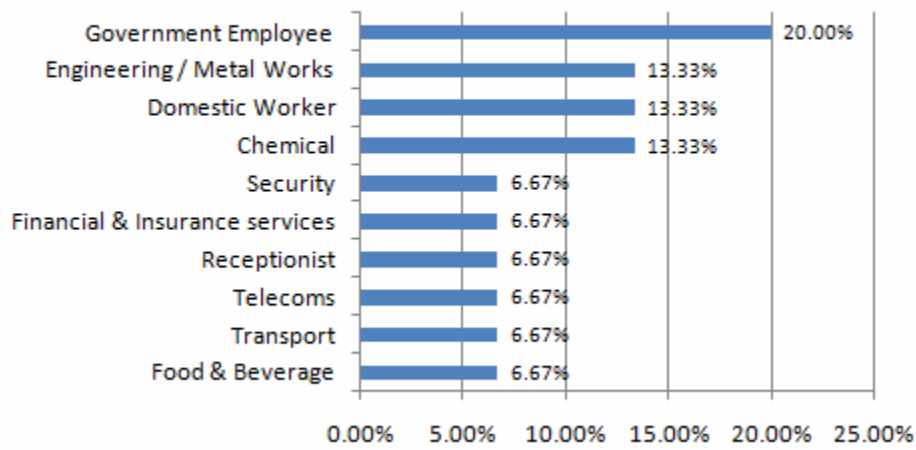
Occupational Status - Cluster 1



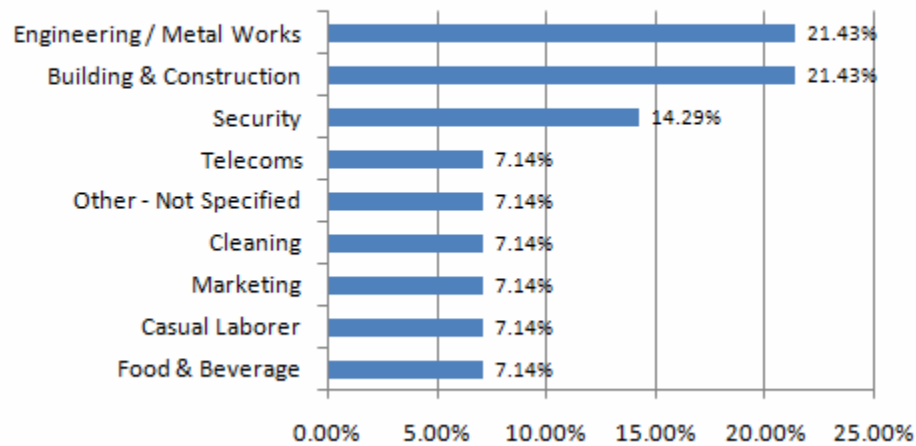
Occupational Status - Cluster 2



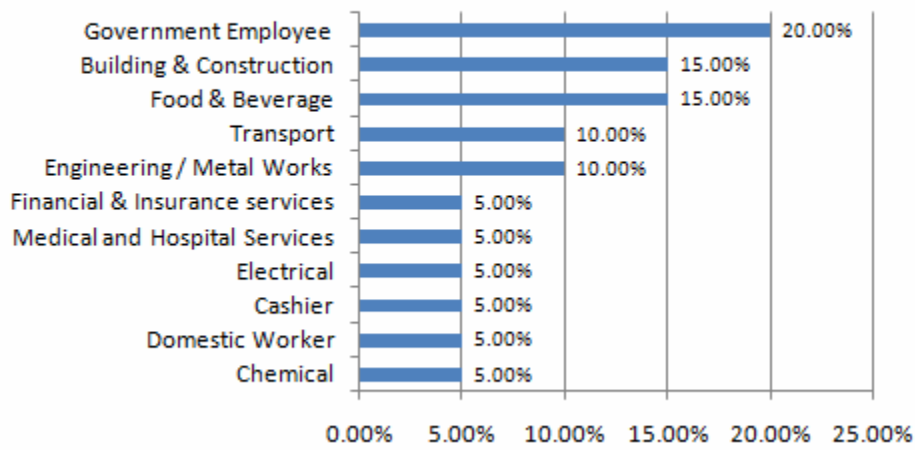
Occupational Status - Cluster 3



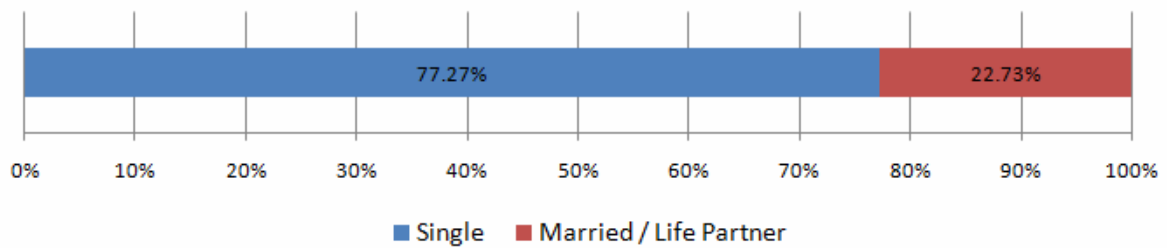
Occupational Status - Cluster 4



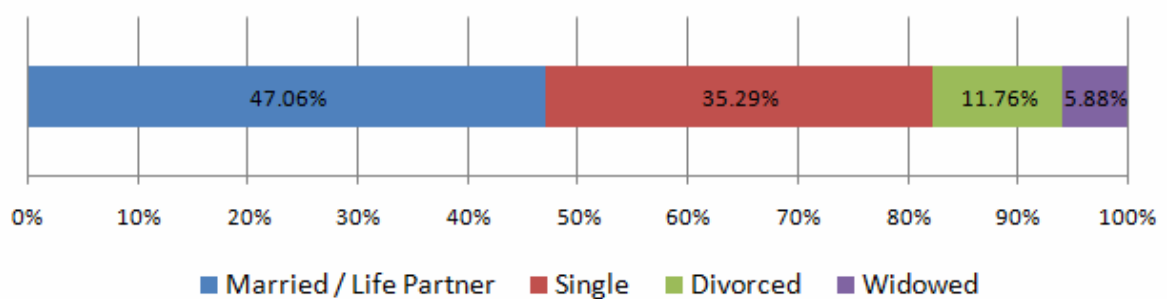
Occupational Status - Cluster 5

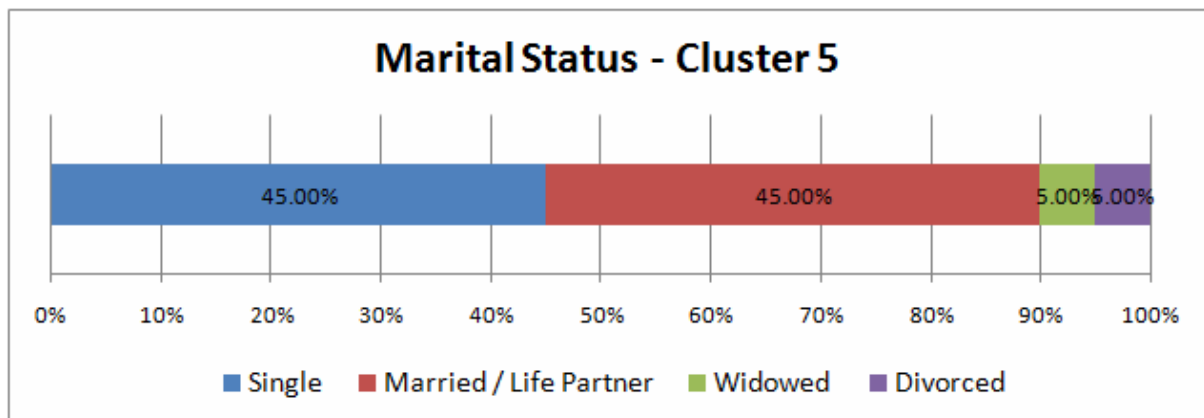
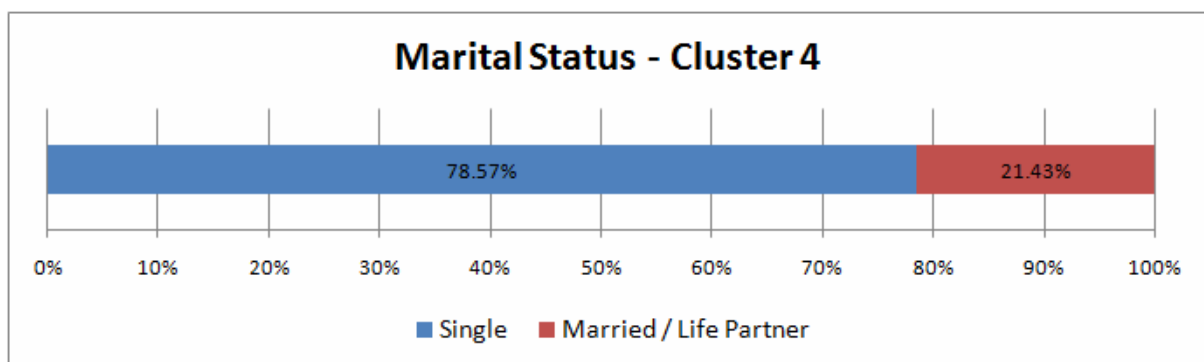
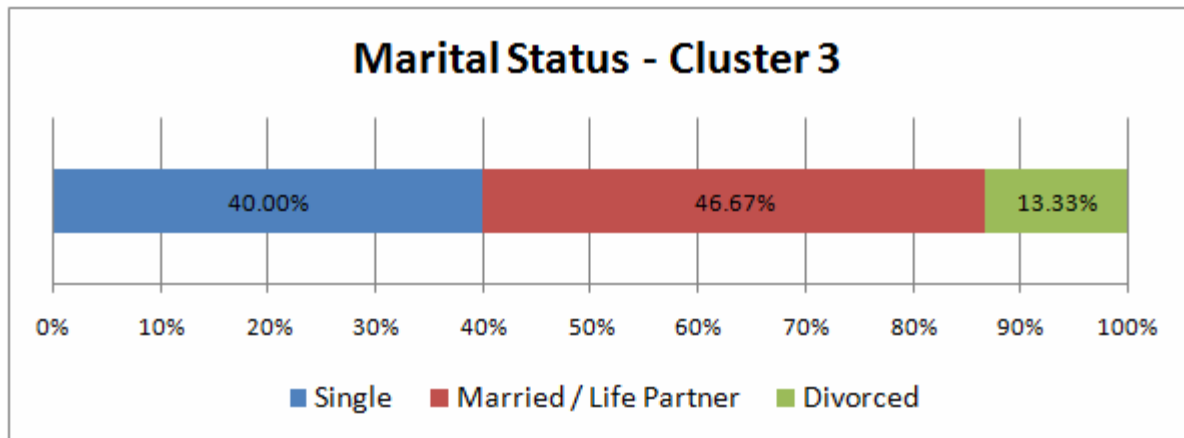


Marital Status - Cluster 1

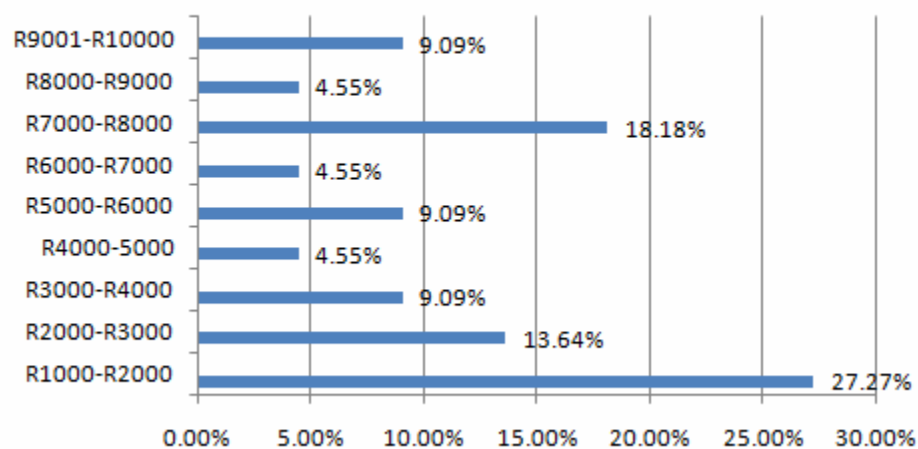


Marital Status - Cluster 2

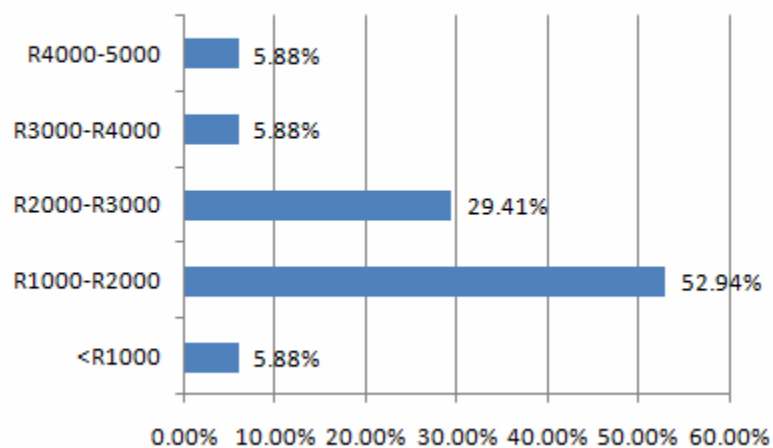




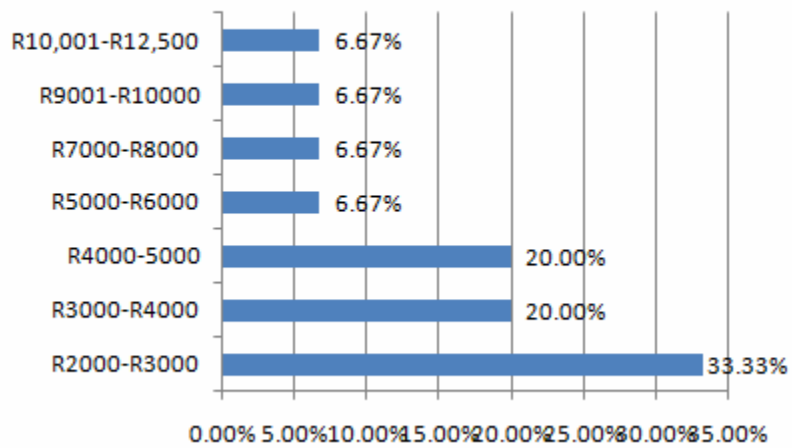
Monthly Net Income - Cluster 1



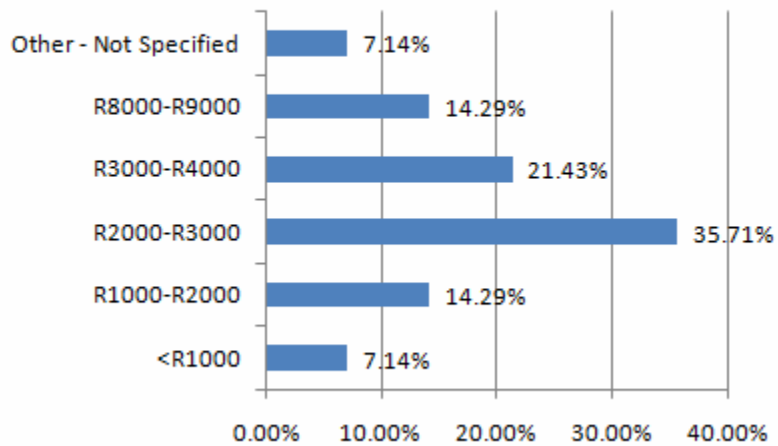
Monthly Net Income - Cluster 2



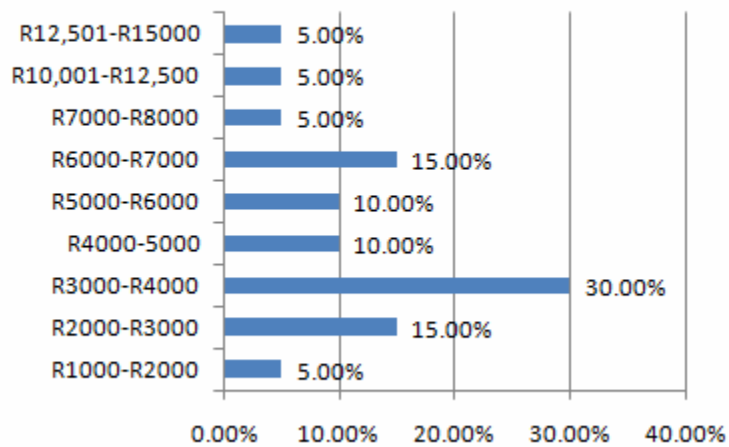
Monthly Net Income - Cluster 3



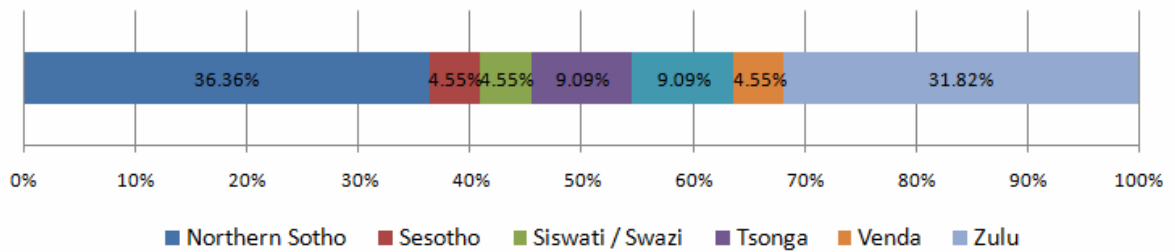
Monthly Net Income - Cluster 4



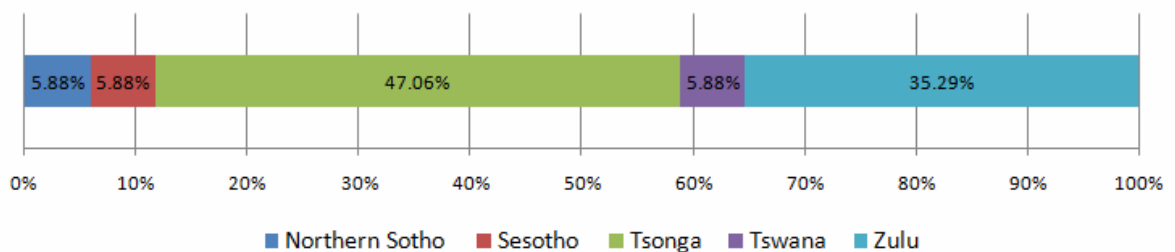
Monthly Net Income - Cluster 5

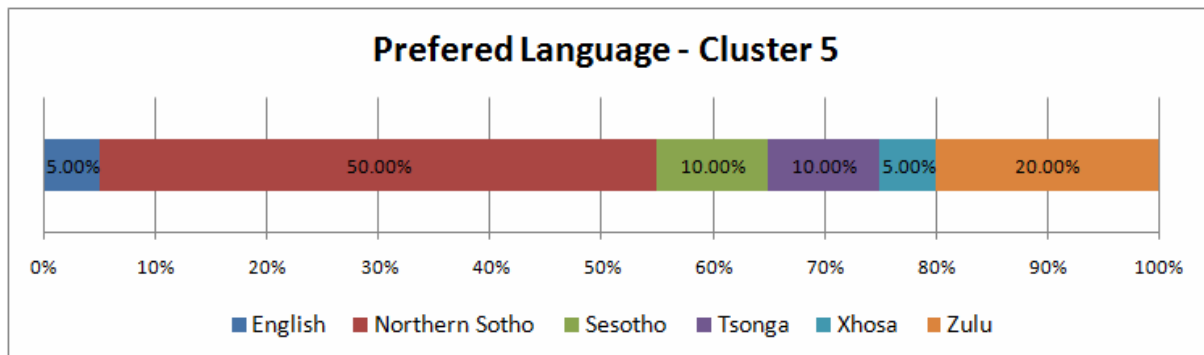
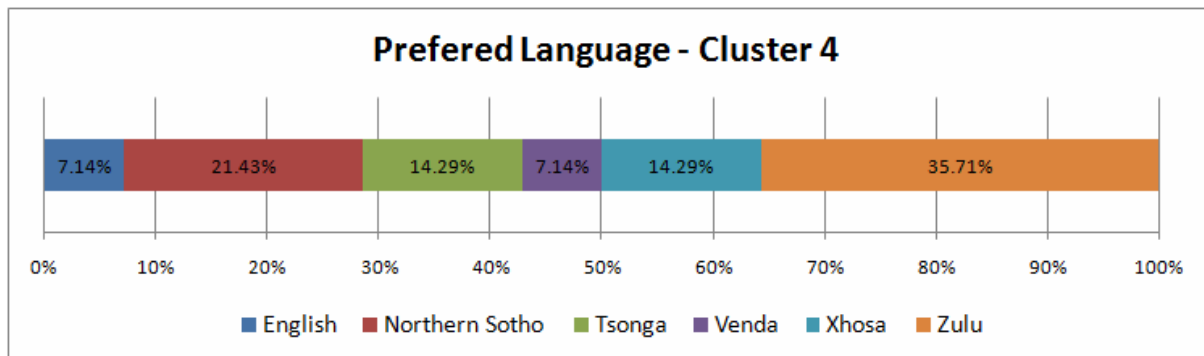
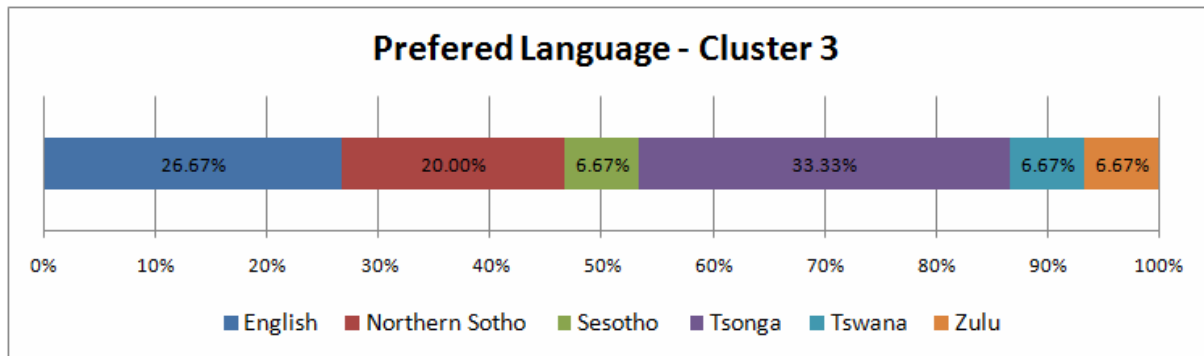


Preferred Language - Cluster 1

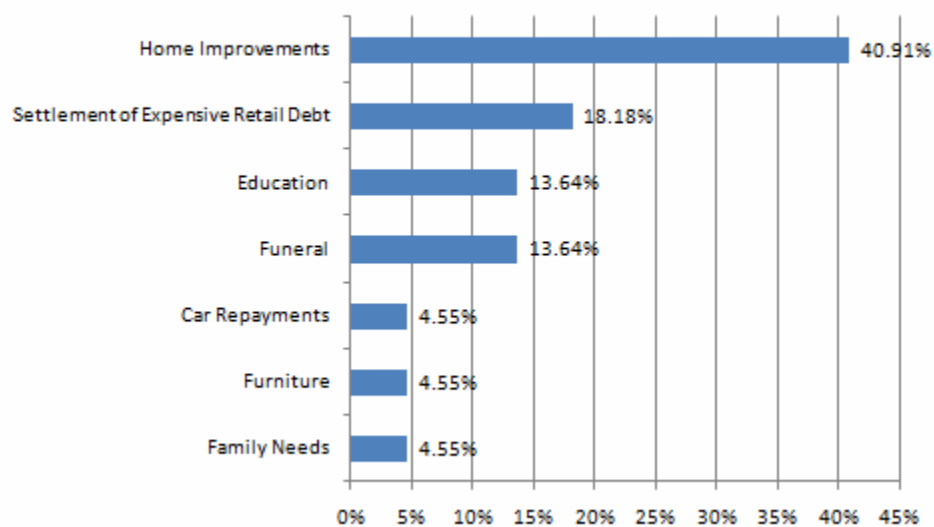


Preferred Language - Cluster 2

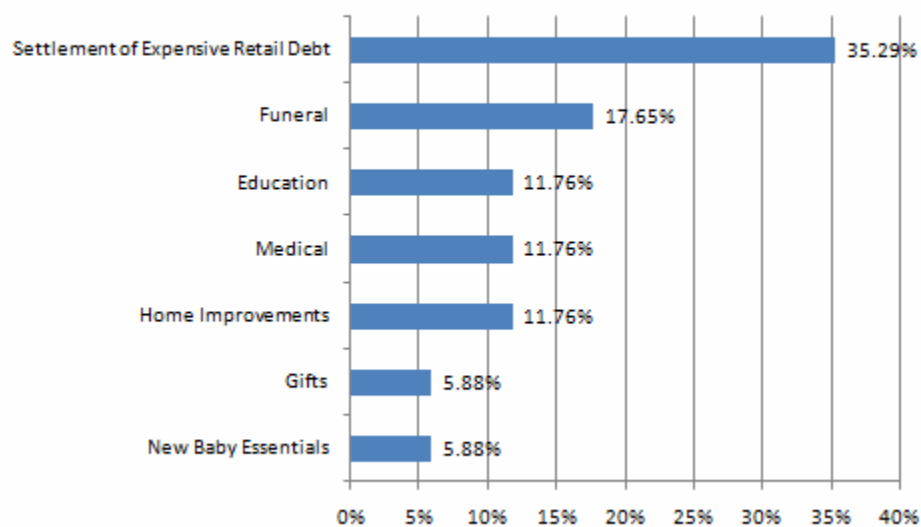




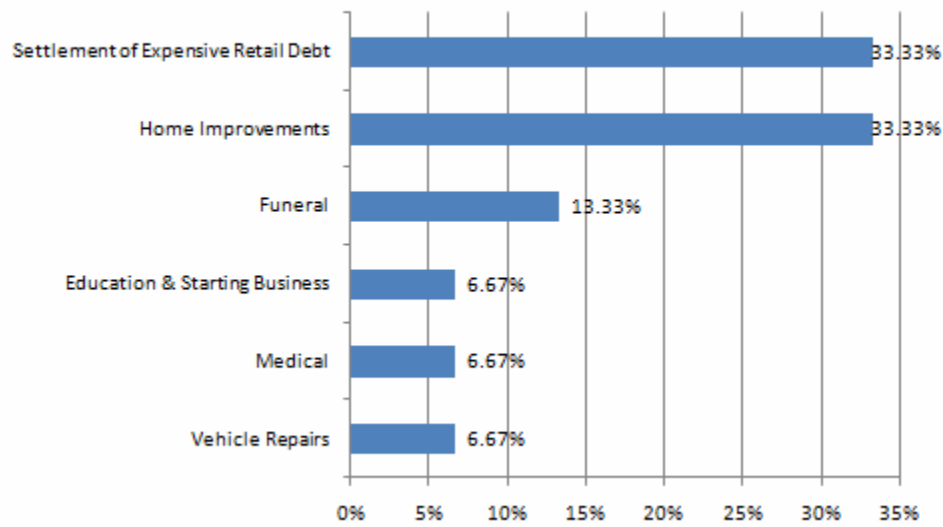
Purpose of Most Recent Loan - Cluster 1



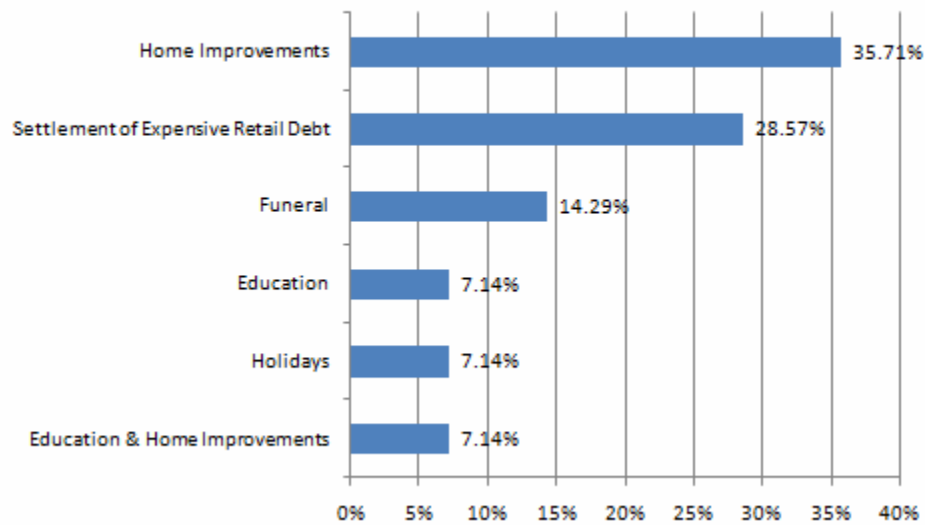
Purpose of Most Recent Loan - Cluster 2

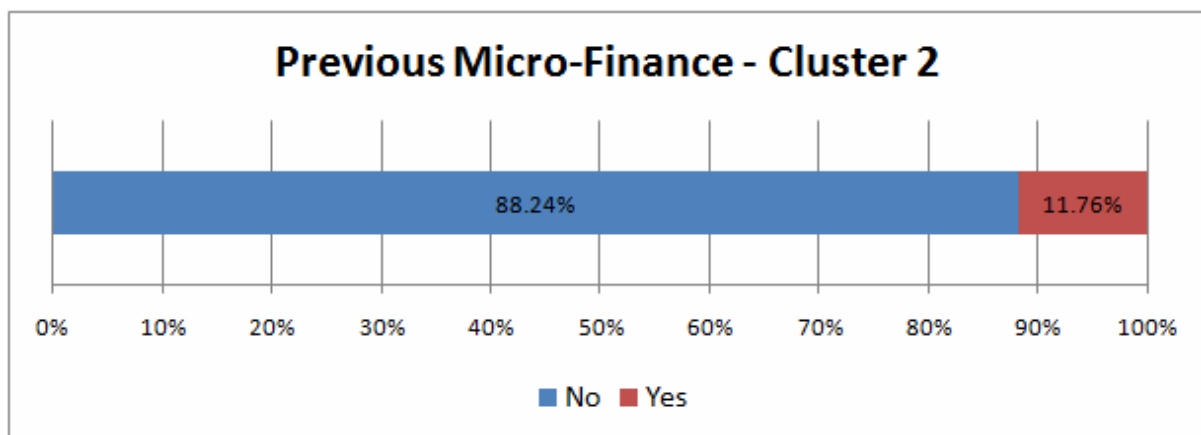
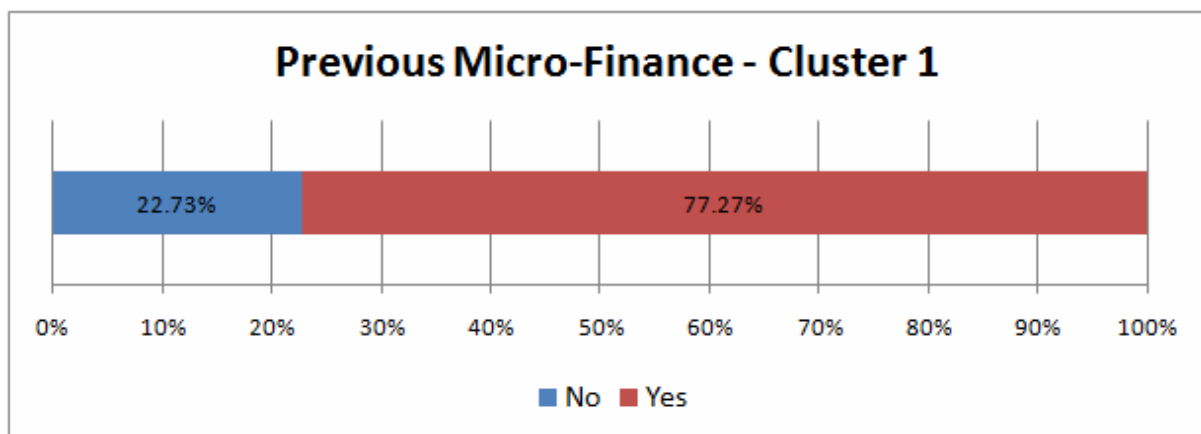
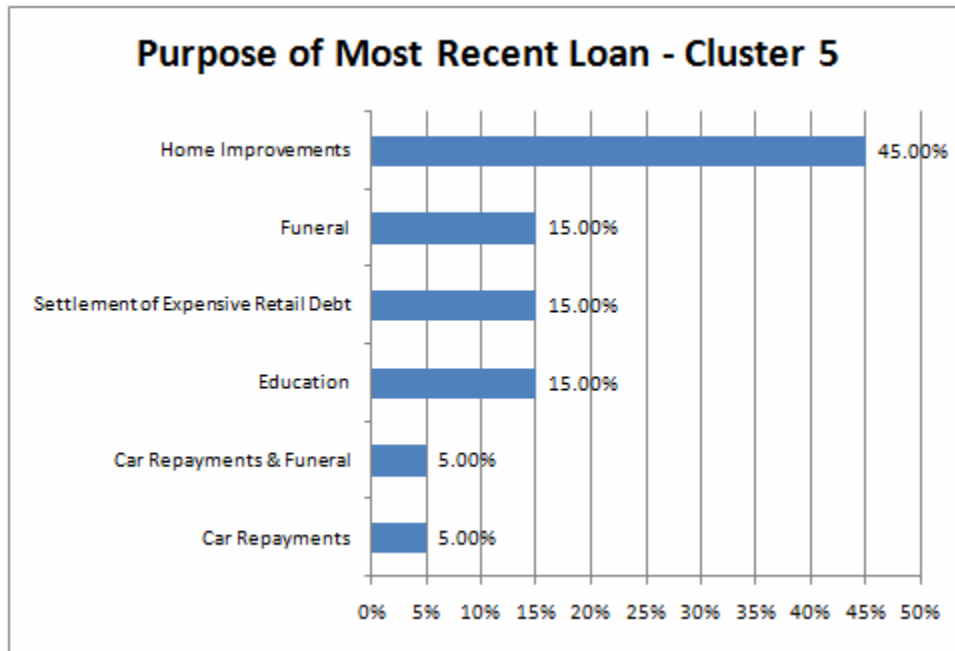


Purpose of Most Recent Loan - Cluster 3

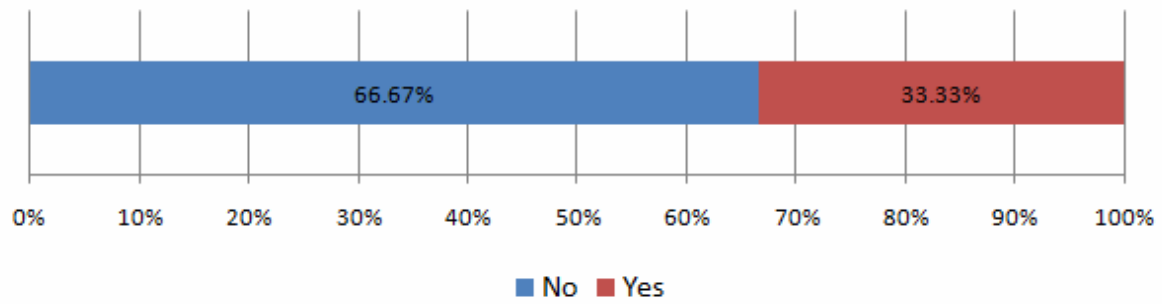


Purpose of Most Recent Loan - Cluster 4

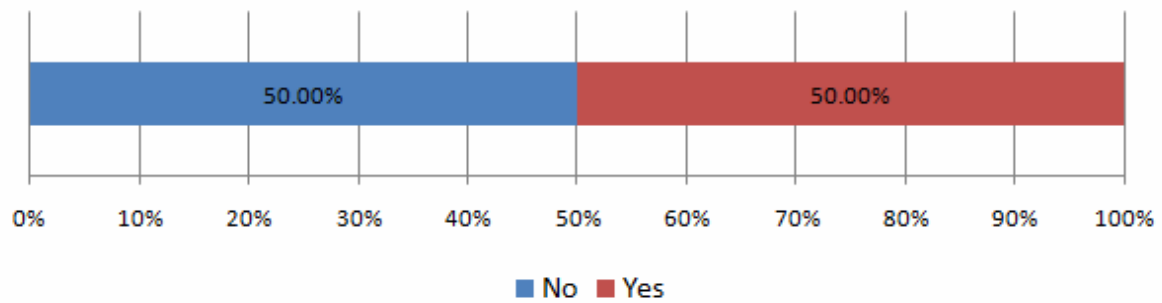




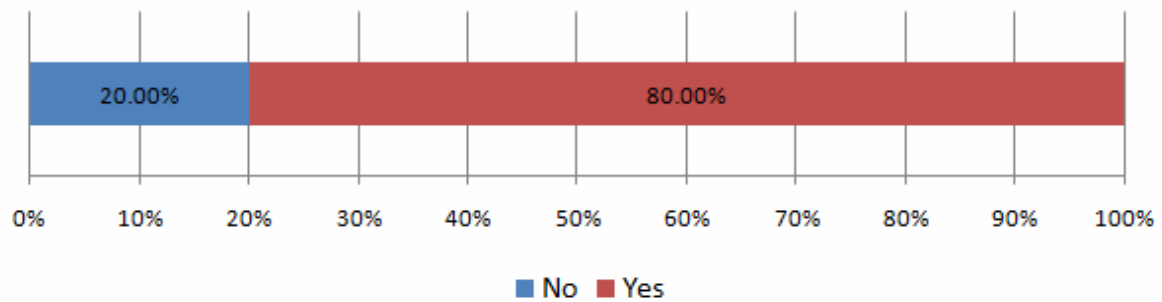
Previous Micro-Finance - Cluster 3

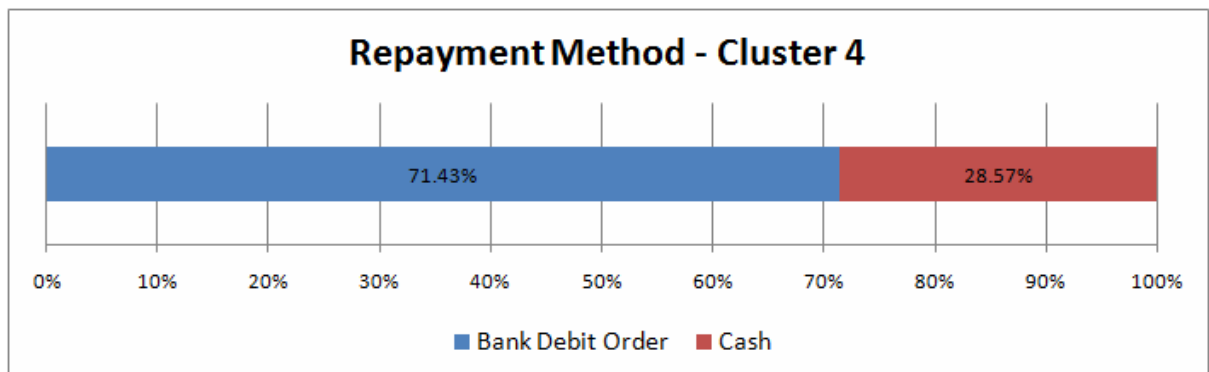
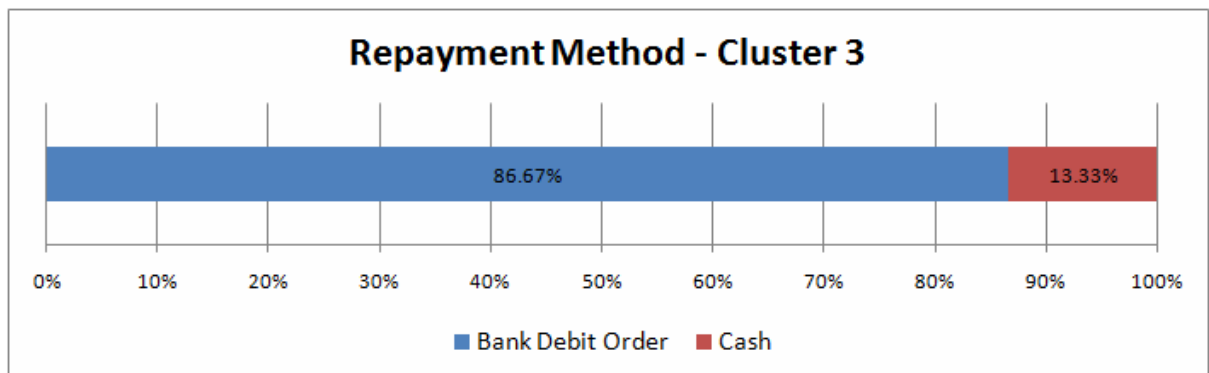
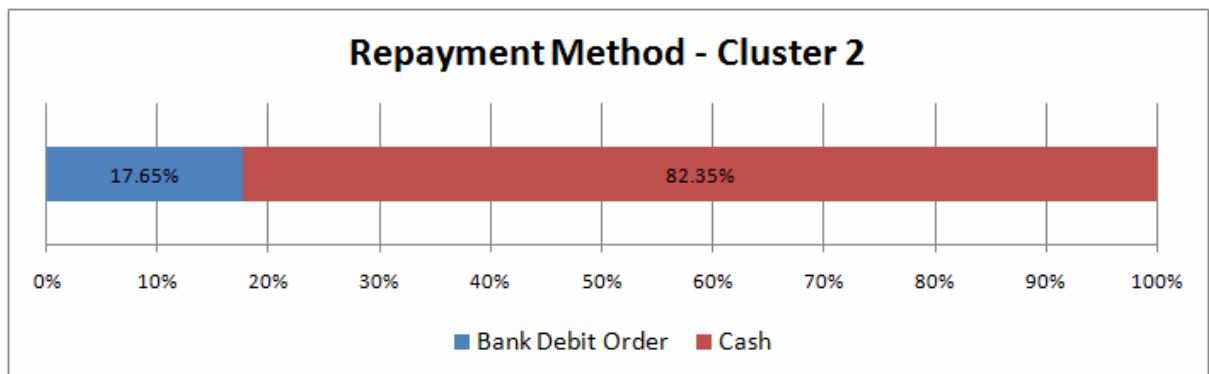
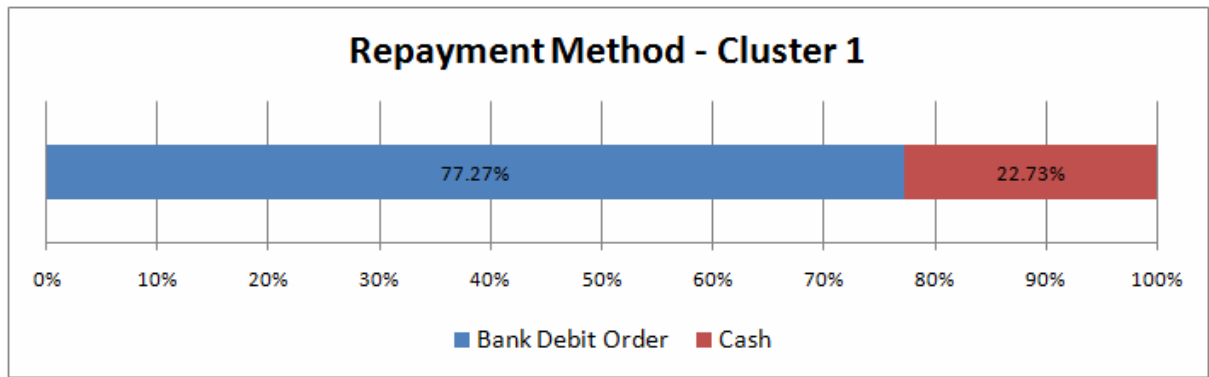


Previous Micro-Finance - Cluster 4

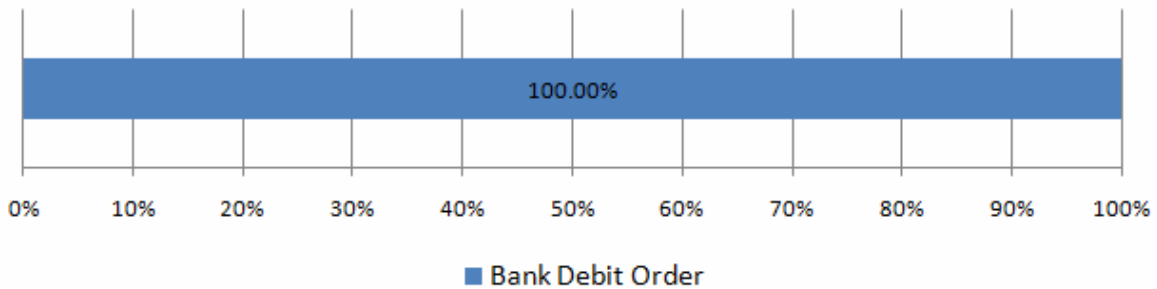


Previous Micro-Finance - Cluster 5





Repayment Method - Cluster 5



Borrowing Status - Cluster 1					
	0-Credit Repayments	0%-20%Credit Repayments	21%-40%Credit Repayments	41%-60%Credit Repayments	Total
0-Loans	4.55%	0.00%	0.00%	0.00%	4.55%
1-Loans	0.00%	36.36%	18.18%	0.00%	54.55%
2-Loans	0.00%	0.00%	27.27%	4.55%	31.82%
3-Loans	0.00%	0.00%	4.55%	4.55%	9.09%
Total	4.55%	36.36%	50.00%	9.09%	100.00%

Borrowing Status - Cluster 2				
	0%-20%Credit Repayments	21%-40%Credit Repayments	41%-60%Credit Repayments	Total
1-Loans	17.65%	52.94%	23.53%	94.12%
2-Loans	0.00%	5.88%	0.00%	5.88%
Total	17.65%	58.82%	23.53%	100.00%

Borrowing Status - Cluster 3				
	0%-20%Credit Repaym	21%-40%Credit Repayments	41%-60%Credit Repayments	Total
1-Loans	33.33%	40.00%	0.00%	73.33%
2-Loans	0.00%	13.33%	0.00%	13.33%
3-Loans	0.00%	0.00%	6.67%	6.67%
4+Loans	6.67%	0.00%	0.00%	6.67%
Total	40.00%	53.33%	6.67%	100.00%

Borrowing Status - Cluster 4				
	0-Credit Repayments	0%-20%Credit Repayments	21%-40%Credit Repayments	Total
0-Loans	7.14%	0.00%	0.00%	7.14%
1-Loans	0.00%	50.00%	28.57%	78.57%
2-Loans	0.00%	0.00%	14.29%	14.29%
Total	7.14%	50.00%	42.86%	100.00%

Borrowing Status - Cluster 5					
	0-Credit Repayments	0%-20%Credit Repayments	21%-40%Credit Repayments	41%-60%Credit Repayments	Total
0-Loans	5.00%	0.00%	0.00%	0.00%	5.00%
1-Loans	0.00%	15.00%	15.00%	0.00%	30.00%
2-Loans	0.00%	10.00%	30.00%	0.00%	40.00%
3-Loans	0.00%	0.00%	20.00%	0.00%	20.00%
4+Loans	0.00%	0.00%	0.00%	5.00%	5.00%
Total	5.00%	25.00%	65.00%	5.00%	100.00%

