Determinants of cost-to-client in accessing rural financial Services – The case of Zambia's Chongwe district

by

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DECLARATION

I Derick Ndimbwa, hereby declare that the dissertation I submit for the degree of MSc Agric (Agricultural Economics) at the University of Pretoria, is my own work and that it has not been previously submitted by me for a degree at this or any other institution of higher learning.

SIGNATURE:………………………………

DATE: APRIL 2015…………………………

DEDICATION

I dedicate this thesis to my mum, dad, sisters, brother, nephew and loving wife for their moral support and uttermost understanding during the duration of my studies.

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ABSTRACT

Despite widespread acknowledgement that financial inclusion plays a vital role in the general livelihoods of low income populations, the majority of the global population remains without adequate access to affordable financial services. The World Bank estimates that approximately 2.5 billion of the global population do not have access to financial services, with the majority of them residing in rural areas .To this effect, in recent years, there has been an increase in both theoretical and empirical literature on financial accessibility studies in rural areas that seek to ascertain the various factors that affect access to financial inclusion which have cited high direct cost- to- client in accessing financial services as a one of the prominent factors hindering financial inclusion.

Notwithstanding various intervention measures to address the high direct costs associated with access to finance, which include lowering interest rates and bank fees, transport costs and other associated transaction costs, generally clients' costs to access financial services remain high. However, to effectively address this cost problem, there is a need to understand how it is constituted. As hypothesized, in addition to the known direct costs mentioned above there are other hidden costs that determine the overall cost to the client in accessing financial services which may have

a profound effect on the client. These include psychological costs, economic costs and regulatory and compliance costs

On this premise, this paper seeks to empirically investigate and identify the overall costs to clients in accessing financial services in the rural areas of Zambia. These factors are important in facilitating smooth policy formulation in the areas of financial inclusion, and rural and agricultural finance. Cross sectional primary data from 232 household was used for this study. Probit and the Heckman selection models were used to analyze cost to the client factors affecting the likelihood of accessing financial services (credit) by rural households. Lessons from the theory of the firm stipulate that the client's costs of accessing financial services are driven by utility maximization under the agency costs theory. This is attributed to the fact that both the principal (financial service provider) and the agent's (client) behaviour is driven by the need to maximize the utility associated with accessing and provision of credit services (financial services). Depending on the clients' perception of the utility they are likely to derive from the ability to access and use credit services (financial services), a decision is made, either to access or not. This client behavior that leads to a discrete choice to be made is modeled in a logical sequence, starting with the decision to access credit services, and then followed by a decision on the cost channel to access to credit services (financial services).

Results of the econometric analysis suggest that cost to client was significantly influenced among many other variables by efficiency of financial provider to serve clients, psychological financial stress, interest fee, loan processing fees, opportunity cost of waiting for the loan, total regulatory and compliance costs, social and cultural network membership, opportunity cost of time spent travelling and total direct fees.
The effects of these significant variables on the cost-to-client vary. This study established that a 1 % increase in each of the above would lead to 1.09 %, 0.78%, 2.75 %, 2.02%, 0.15%, 0.28 %, 0.01 % and 4.78 % increase in client costs expenditure respectively. Unlike the other factors above which positively influence costs to clients, membership of social and cultural networks decreases the cost to the client by 3.02 %. The results presented in this study therefore support claims that policy formulation in the areas of financial Inclusion, rural and agricultural finance would be based on reducing cost-to-client attributes such as regulatory and compliance costs, economic

costs and psychological costs. This should be complemented by infrastructure investment, massive financial education, and design of appropriate and affordable products.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Poverty estimates by the World Bank (2013) indicate that the percentage of Zambians living in abject poverty has not changed significantly since the advent of multi-party democracy and the introduction of free market economic policies in 1991. The gap between the rich and poor has continued to widen, despite having various poverty alleviation strategies in place, thus causing many households to sink deeper into poverty.

In per capita terms, Zambia is a low-middle income country, with the year 2013 estimate of Gross Domestic Product per capita at $1 700 (CIA Fact Book, 2013). In spite of this relatively encouraging wealth statistic for a developing nation, most citizens are still living in abject poverty and remain extremely vulnerable to financial shocks. Furthermore, its income and wealth distribution is relatively unequal, with its Gini coefficient by expenditure, standing at 0.575 in 2010 as compared to 0.75 in 2000, which represents a growth of 50.4 % (UNDP, 2013). Many Zambian households today still lack access to basic amenities such as health care, clean water, energy and education. Accordingly, this situation does not only have the potential to affect the country's social and political stability, but also its economic development path (Chapoto, 2011; IFAD, 2012).

Poverty primarily implies the lack of income necessary to attain a decent standard of living. Evidence from the literature suggests that there is a gradual increase in income poverty. For instance, the headcount index of poverty between 2000 and 2010 increased from 42 % to 46 % nationally (Ozler, 2012). Zambia's population, according to estimates by the Central Statistical Office, stood at about 13.6 million people in 2010 and of these, almost 10.88 million continue to live below the accepted minimum standard of living (IFAD, 2012). Poverty is quite endemic in the

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rural areas of the country, particularly in the Western and Northern provinces. An estimated 80 % of the poor (10.88 million) predominantly reside in rural areas with 65 % vulnerable to being chronically poor (Dinde and Mate, 2006).

According to the World Bank (2012), persistently high poverty levels in rural areas are due to low economic productivity in agriculture, coupled with migration of the population to urban areas in search of employment. Other reasons for the persistent poverty include the lack of complementary assets and essential vital services, resulting in the poor being unable to take advantage of opportunities available to them.

Levine (2004) has recognised that the lack of finance needed to undertake productive ventures by the low-income poor may derail their quest to escape the poverty trap. The provision of affordable financial services has been widely perceived by many scholars as one of the many efforts needed for poverty alleviation.

Further, according to the Consultative Group to Assist the Poor (CGAP, 2012), it is believed that access to finance contributes to the attainment of the Millennium Development Goals (MDGs). This is because it enables people, particularly the poor, to engage in productive activities by empowering them to take control of their financial lives and benefit from more predictable, stable, secure, and relatively low-cost services which are essential for the eradication of poverty. Furthermore, it strengthens the capacity for business growth, particularly the small informal activities of the poor, consequently helping to pull them out of the poverty trap. However, these and other authors (Chapoto, 2011; IFAD, 2012; CGAP, 2012) also argue that poverty is a multifaceted challenge, which requires various interventions besides access to financial services for people to escape the trap of poverty. To date, though, access to finance remains the one cardinal intervention that can unlock a lot of potential for the poor in rural areas to kick-start a rural economy (Levine, 2004).

For this to be effective, it is imperative to develop diverse products which can reach various clients of financial services, including the low-income poor. On the part of financial service providers, developing such relevant products enhances their ability to meet the needs of a variety of clients such as SMEs, marginal groups (smallholder farmers) and low-income households. Having tailored products enables these financial services providers to simplify their serving methodology.

For the low-income poor to effectively respond to shocks and manage their risks, there is need for them to invest in productive enterprises alongside building assets, as long as the enabling environment is suitable. The process of creating an enabling environment to ensure the integrity of service providers and protection of consumers should be undertaken by building appropriate financial service provision channels for the low-income poor. This will reduce the costs of financial service provision to the low-income poor because it will encourage technological innovation and infrastructure development (CGAP, 2010). While financial inclusion may not be one of the MDGs identified in 2000, it has over the years gained increasing importance in the agenda of many governments and central banks around the world.

Despite widespread acknowledgement that financial inclusion plays a vital role in the general livelihoods of low income populations, the majority of the global population remains without adequate access to affordable financial services. It is estimated that approximately 2.5 billion of the global population do not have access to financial services, with the majority of them residing in rural areas (World Bank, 2012). To this effect, in recent years, there has been an increase in both theoretical and empirical literature on financial accessibility studies in rural areas that seek to ascertain the various factors that affect access to financial inclusion. Some of the prominent factors identified as hindering financial inclusion include gender, collateral, age, geographical location and financial literacy, as well as interest rates and transaction costs (Ibrahim, 2012; Kaino, 2005; Beck, 2006; Zeller, 1994; FinScope, 2009).

However, the scope of these various studies is limited to identification of the factors that affect access to financial services, with none of them looking at the costs to clients associated with accessing financial services. Against this backdrop, the low levels of financial inclusion are not altogether surprising.

1.2   PROBLEM STATEMENT

Providing affordable access to appropriate financial services for the low income population has been an on-going challenge for most developing nations, Zambia included. Despite various intervention measures to address the high direct costs associated with access to finance, which include interest rates and bank fees, transport costs and other associated transaction costs, clients' costs to access financial services generally remain high. However, Coetzee (2010) argues that to effectively address this cost problem, there is a need to understand how it is constituted. As hypothesised, in addition to the known direct costs mentioned above there are other hidden costs that determine the overall cost to the client in accessing financial services which may have a profound effect on the client. These include psychological costs, economic costs and regulatory and compliance costs.

While most financial service providers focus their information gathering on cost to serve the client, very little is known about the cost incurred by the client in the process of accessing financial services. On this premise, this research seeks to empirically investigate and quantify costs to clients in accessing financial services in the rural areas of Zambia, using the case of Chongwe, which is situated east of Lusaka rural, with its geographical coordinates being 15° 21' 0'' south, 28° 42' 0'' east.

In view of the above, this study intends to provide answers to the following research question:
What factors constitute overall costs to the client in accessing financial services in rural areas?

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1.3   OBJECTIVES OF THE STUDY

1.3.1   General Objective

The broad objective of the study is to investigate determinants of the overall cost to the client in accessing rural financial services in Zambia.

1.3.2   Specific Objectives

The specific objectives are:

- To identify the factors influencing costs to the client in accessing rural financial services in Zambia.

- To investigate the extent to which these identified factors influence costs to the client in accessing rural financial services in Zambia.

- To propose appropriate policy for rural financial markets based on the results of the cost-to-client analysis.

1.4   RATIONALE OF STUDY

Increasing global attention has been given to the study of households' financial accessibility to savings and credit services and its impact on human development especially in the context of poverty reduction. Although access to financial products has proven to be crucial in the reduction of poverty, particularly at the household level, policies for rural and agricultural finance appear to lack depth and are often not consistent with the country's national development plan.

Recent data from the FinScope survey (FinScope, 2009) revealed that 63 % (8.58 million) of the Zambian adult population is excluded from formal financial services. These 8.58 million people are mainly engaged in traditional agriculture activities. Of this group without access, 66 % reside in rural areas and 78 % are women. Putting these statistics in context, it entails that the majority of unbanked Zambians,

who are mainly poor people, belong to the 65 % of the population that earns less than $1.25 a day, with many being part of the 80.5 % who are officially formally unemployed (IFAD, 2012).

The failure by 63 % of excluded households to gain access to financial services is frequently used as an explanation for many important economic phenomena. Accordingly, many studies (Chapoto, 2011; Dinde and Mate, 2006; IFAD, 2012) have been conducted to investigate the determinants of household financial accessibility and its effect on different issues in Zambia. However, despite the vast number of studies, there has been relatively little empirical work conducted solely for the purpose of understanding the costs clients may incur in accessing rural financial services.

The importance of this study, therefore, is its potential to fill gaps in literature on cost-to-client determinants in accessing rural financial services. It attempts to identify factors that influence the cost structure of clients in accessing rural finance. This particular study focuses mainly on the cost-to-client associated attributes in accessing financial services on the demand side in rural areas. This study will be essential for the successful development and implementation of rural economic policies in Zambia. It is hoped that the findings will be useful in building an information base necessary for drawing on how to potentially adjust product innovation and policy strategies that would enhance access and provision of financial services in rural areas.

1.5   DELINEATIONS AND LIMITATIONS

This study is limited to rural financial markets and primarily focuses on micro aspects of rural finance. In terms of financial services, only the credit component was analysed while other services such as savings transactions, remittances and insurance were not considered. The focus of this study was mainly concerned with the factors affecting costs to clients in accessing finance in rural areas.

One of the major limitations of the study is that the accuracy of the data collected depends solely on the information provided by the respondents. Most of the households lack records on access to financial access hence the dependence of the research on verbal information from the selected respondents, who depend on recollection. Sample selection methods and procedures are explained in depth in Chapter Four. Therefore, the existence of any bias on the part of the respondents could affect the results. However, appropriate scientific approaches were employed to ensure that confidence levels for the data analysis were high enough for statistical reliability.

It is also worth noting that one of the limitations of the empirical analysis is the sensitivity of the topic at hand. Some respondents were reluctant to provide vital information in relation to the study. Therefore, there is need to complement the findings of this study with other studies such as the FinScope survey, to effectively broaden the scope of the application of research findings.

1.6   OVERVIEW

The thesis is organised as follows. Chapter One outlines the background, problem statement, rationale, objectives, delineations and limitations of the study. In Chapter Two, a review of literature relevant to costs to clients in accessing financial services in rural areas is presented. The objective is to give an overview of different concepts of access to finance, the role of rural financial systems and a summary of variables likely to have an influence on the costs to clients. Consideration is given to the feature of the rural finance markets and their relationship to savings and credit accessibility. Finally the chapter looks at the theoretical and analytical framework.

Chapter Three reviews relevant literature on rural and agricultural finance in the Zambian context. The first section of this chapter gives an overview of poverty in Zambia. It then goes on to provide a brief view on the rural economy and finance

markets. Finally the chapter winds up by reviewing the literature on supply of agricultural and rural finance. In Chapter Four, a socio-economic profile of the study area and detailed description of the survey methodology and of the analytical technique used in this study are outlined. In Chapter Five, empirical tests of the hypotheses are conducted and discussed and results are presented. It covers three major analyses, namely, psychological financial stress profile, estimation of cost to client and determinants of household cost to client in the study.

Finally, Chapter Six contains a summary and conclusions of the major findings, implications for policy and recommendations for future research.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1   INTRODUCTION

Access to finance is a broad concept defining the ability to have sustainable and affordable financial services for low-income poor to build assets and increase income thereby reducing their vulnerability to various external shocks and risks. Ledgerwood (2012) views it as the ability for formal community based financial institutions to extend credit, insurance, transactions and remittance services to low-income poor clients who are usually excluded from mainstream financial services such as banks and micro-finance institutions. She further argues that access to finance is a form of financial intermediation whose primary purpose is to alleviate poverty through provision of affordable financial services to the poor. Whereas cost can be defined as the estimated total value of money, resources and time associated with a purchase or activity is termed as cost (Comiskey, 1996). Yung (2012) defines cost as the expended amount in terms of effort, material, risk incurred, time and opportunity forgone to have something done.

Access to financial services contributes to poverty reduction and overall development of rural economy by enhancing income generating investment activities. However, financial access is limited in most rural areas in third world countries due to high transaction costs, poor infrastructure, price risks in agriculture among others (Egwuatu, 2008). According to Zeller (1994) there are various factors hypothesised to hinder access to finance; these include gender, collateral, age, geographical location and financial literacy, as well as interest rates and transaction costs. However the most common factor known to affect access is overall cost-to-client, though very little is known about it. This chapter therefore serves as a guide to the key concepts and knowledge on cost-to-client in accessing rural agricultural finance.

The aim of this chapter is to review relevant literature on costs associated with financial services in rural areas. Issues discussed include; dynamics of the rural economy, background and overview of access to financial services in Zambia, likely determinants of costs to clients in rural areas, empirical literature as well as theoretical framework.

2.2   DYNAMICS OF THE RURAL ECONOMY

A critical assessment of most rural economies in Africa indicates that agriculture which mainly involves basic subsistence farming practices and food production is the most common and viable source of income for rural people (World Bank, 2012). Generally, the rural poor usually have limited access to basic necessities such decent shelter, water and food and as such they are unable to meet their social and economic obligations, leading to low self-esteem. Their lives are basically characterised by lack of adequate formal education, large family size, use of poor farming technologies, and lack of market access for their agricultural produce. They also experience low savings, investment and lack of access to credit facilities. As a result, their economic base is poor, heightening their untold hardship, high death rate, unemployment, leading to a "hand to mouth" kind of lifestyle; which is the order of the day in most rural communities of Zambia (Chapoto *et al*, 2011).

A basic feature of rural Zambia is that the majority of its inhabitants lack a regular source of income and reside fair apart from each other. According to Babasanya *et al.* (2008), ironically, rural farmers in third world countries are simply not paid enough for their produce, whereas prices of basic farming implements and inputs are constantly rising beyond their reach in comparison to their colleagues in developed countries, who are heavily subsidised. Beck *et al* (2000) further attributes the low income level of rural farmers to global instability in the demand for agricultural output.

Another notable feature of Zambia's rural economy which adversely affects financial access is inadequacy of infrastructural facilities. The poor state of the road

network presents barriers to agricultural trade, while at the same time it affects the expansion of financial services by mainstream banking services to operate in rural areas (Dinde and Mate, 2006). Limited access to electricity is another aspect that has negatively impacted on economic activities in rural Zambia. Although in recent years the country has embarked on a rural electrification project, the pace has been rather slow and no considerable progress has been made so far.

According to Yaron (1997), the underdevelopment of rural infrastructure described above has a direct bearing on increasing the cost of financial intermediation for both clients and financial service providers. He argues that as a result of poor telecommunications, electricity supply, road infrastructure, and security systems, the costs and risks associated with serving rural households with credit and savings services tend to increase. Another important aspect of the rural economy that affects financial access is the lack of collateral to secure loans from formal financial institutions. This has led poor entrepreneurs and households to turn to informal alternative financers, who include informal sources such as family, friends and village money lenders, to meet their financial needs. This forms a key characteristic of rural finance as it leads to the stock of bank credit to the rural poor being very low in comparison to urban areas. For instance in Zambia FinScope (2009) indicates that the use of formal and informal credit in rural areas was 8 % and 17.8 % respectively.

From this section, what emerges clearly is that the dynamics of the rural economy have a strong bearing on the access to finance strand in rural areas. In essence the section above has looked at how various characteristics of the rural economy impact on the availability and cost of accessing rural financial services.

2.3 BACKGROUND AND OVERVIEW OF ACCESS TO FINANCIAL SERVICES IN ZAMBIA

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The majority of the population in third world countries lack access to financial services and remain financially excluded. The level of financial exclusion in developing countries has been of great concern to policy makers in Zambia and the continent at large. To address this, various intervention measures have been formulated to stimulate growth in the financial sector. The financial landscape in Zambia is characterised by a large number of people and small medium enterprises that are mostly financially excluded, yet the section of the population that has access is exploited by high costs and transaction fees. The Zambian government focus has not been restricted to mere access to finance but also to striving to promote the development of financial products that are affordable even to the rural population (Mabula, 2012).

According to Martinez (2006), limited access to financial services in rural Zambia, is reflected in the low number of financial service providers serving the rural areas. For instance, Zambia's financial sector had 120 bank branches in 1990, whereas in 2004 the number had merely increased to 152, giving a ratio of one bank branch per 70,000 people in 2005, which is one of the lowest bank penetration ratios in the world. As can be seen in the figures below, the modest increase in the total number of bank branches was mostly attributed to the growth of branches in urban areas. In 1990, 50% of all branches were in urban areas and the other 50% in rural areas, which was government policy at that time. From 1990 to late 2005, there was a massive reduction in rural bank branches, which saw the closure of about 65% of rural bank branches following the removal of the policy requirement of opening a rural bank branch for every urban branch opened. This has led the majority of individuals in the rural areas to continue being deprived of financial services (Martinez, 2006; Dinde and Mate, 2009). It is for this reason that financial inclusiveness is of the top of priorities among financial policy makers in Zambia and world over as they strive to improve access for all. A follow-up FinScope (2009) study revealed that since the first study, a number of financial services providers have increased both their coverage and type of financial services to suit their clients.

This section has revealed that in Zambia the highest level of financial exclusion is concentrated in rural areas, where poverty is rife. Therefore it is of importance to this study to create an understanding of the development of rural financial services in Zambia to assess gaps in the rural financial markets that have resulted in limited access to finance for the majority of rural households.

2.4   EMPIRICAL LITERATURE ON ACCESS TO FINANCE

There have been a number of comprehensive studies on access to finance. One notable study is the investigation on how access to finance relates to economic development, which was conducted in Botswana, Kenya and Namibia. Results from the survey indicate a positive correlation between poverty reduction and access to finance. Cross-sectional data collected was analysed using the probit model (IPAR, 2007). A similar study in Nepal investigated how gender influences access to finance. Cross-sectional data were analysed using statistical software to generate descriptive statistics. The study findings indicated that men have more access to finance than women (Devkota, 2006). In rural Myanmar, a study on factors that affect access to finance concluded that demographic aspects such as level of education, gender and age had a positive influence while interest rate was found to be negatively related to access to finance (Kaino, 2005). An investigative study, on the aftermath effects of excessive borrowing in the Uganda credit market concluded that household units which spent most of their borrowed funds on investment activities like farming or education rather than consumption are likely to have fewer difficulties in paying back their loans (Kasirye, 2007). According to Kruja (1997), the size of local financial institution, farm size, and proximity to financial institution, among other factors, are of significance in explaining access to finance in rural Virginia. The study collected cross-sectional data in five rural areas, which was later analysed using the probit model.

In Iran, a study was conducted to assess transaction costs incurred in the credit market by different types of institutions. Cross-sectional data of 459 households were collected. Regression analysis was employed to investigate the factors affecting transaction cost in accessing credit facilities. The study findings revealed

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that loan size, contractual form and distance from the financial centre are important determinants of transactions' costs (Mahajan, 2006). In rural Nigeria's rural credit market, an investigative study on factors affecting access to credit identified that collateral, marital status, level of income and educational attainment had positive impact on farmers' access to credit while transaction costs and interest rates were negatively significantly related. This study employed probit model to analysis cross-sectional household data (Ibrahim & Aliero, 2012).

A study in Bangladesh on the cost effectiveness of rural loans, comparison of transaction costs of borrowing from two different sources, i.e. formal and informal lenders was studied. It was observed that the magnitude of transaction costs decreases with loan size. Study findings revealed that the effective cost of borrowing is mainly influenced by the source and size of the loan. The study noted that loans from formal sources are more expensive than those from informal ones, as larger borrowers enjoy the incentives of subsidy in formal credit circles. It has been observed that in Far East Asia, specialised formal institutions in rural credit incur high costs, thereby leading to them imposing high transaction costs on borrowers through their monitoring activities so as to ensure eligibility and diversion of funds avoidance. Therefore, due to this, rural borrowers and farmers have to spend significant amounts of resources in term of money and time to access credit from specialised institutions (Ahmed, 1989).

It has emerged from this section that there are various factors that would significantly influence access to finance; these include collateral, age, gender, financial literacy, interest rate and transaction cost among others. It is evident from various studies reviewed above and the FinScope studies that cost is the most predominant factor that affects access to financial services. The next two sections look at cost related literature and include a summary of variables likely to affect costs to the client and finally theoretical framework. This will help the study create an understanding of cost to client in relation to access to finance.

2.5 SUMMARY OF VARIABLES LIKELY TO AFFECT COST TO CLIENT

This section discusses variables that are likely to affect cost-to-client dynamics in accessing rural financial services. The variables discussed below include economic costs, direct financial costs, social and cultural costs, psychological factors, regulation costs and compliance costs.

2.5.1 Social Network and Cultural Costs

According to Arun (2012), social networks are mainly known to play an important role in smoothing consumption risk, particularly in third world countries where there are limited formal contracts and poorly developed financial markets. In financial industrial credit economies, households usually obtain credit against individual guarantes, whereas from mainstream commercial sources the decisions on loan disbursements to clients are based on the available information on borrowers' credit risk. In most third world countries, however, low income poor households usually do not have access to the guarantees and collateral mechanisms mentioned above. This scenario is further worsened by lack of vital information on potential borrowers' creditworthiness. In turn this leads to a virtual exclusion of this group (low income poor households) of borrowers from formal credit markets (Bastelaer, 2000). This situation of lack of vital information on potential borrowers and their tangible collateral base increases their cost to access credit services. However, certain types of financial service providers design their institutional arrangements to offer these low-income, poor borrowers valid substitutes for individual collateral and low-cost alternatives to imperfect creditworthiness information.

This has seen an increasing number of financial service providers providing credit to the low-income poor households on the basis of what is termed as social collateral. Social collateral measure prototypes used by financial service providers are borrowers' reputation, membership of social networks, and location of traditional financial or physical collateral.

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From this it is clear that social and cultural network arrangements are built on the strength of personal relationships and social interactions. As such, they provide a fertile ground for the analysis of the how social capital factors affect the cost of accessing rural financial credit by clients. Empirical evidence on the relationship between social capital and access to credit facilities programmes in most developing countries suggests that social ties facilitate poor clients' access to credit as they lower costs (Sodano, 2008).

- **Cultural norms:** According to Agarwal (2003), it is fundamentally important to understand how cultural factors such as social norms, legal rights and women's access to and control over resources shape and define their ability to access credit facilities, as this has an impact on the cost of accessing financial services.

- **Property rights:** In most developing countries, legal regulations and customary rules often restrict women's access to credit facilities as they lack full control over assets such as land or livestock that can be accepted as collateral. Furthermore, they are less likely to have land titled under their name as compared to their male counterparts; hence this increases their cost to access the services as well as increasing the cost of monitoring by the financial service provider (Parada, 2008). According to the World Bank (2008), although women have control over their families' livestock, this varies across cultures as they still lack responsibility for their purchase and sale, leaving them with virtually no tangible collateral base. Hence this negatively affects their ability to access credit facilities because costs go up.

- **Literacy levels:** Complex financial documentation and high illiteracy levels significantly constrain access to financial services as they hinge on the level of understanding of the services provided by the service provider. Also, they tend to border on issues of rights and responsibilities of the consumer of various financial services, in addition affecting demand for services (Putnam, R.D.1993). According to the UNDP (2007) even in special cases where rural inhabitants have access to market opportunities and information on financial services, they lack capacity to comprehensively understand and process it.

Their low literacy levels and lack of exposure to official languages used by financial service providers hampers their ability to benefit directly from information that is provided in written form. Brown (2001) stresses that this language barrier leads to these rural clients failing to fully understand the conditions of complex financial products offered to them, thereby leading to costs of access by client being expensive.

- **Age:** Financial service providers usually target their services at middle-class, economically active populations and often overlook the need to innovate products for older or younger potential consumers. While the older rely largely on non-institutional means of savings such as investing in livestock, certain services such as life insurance tend to exclude them. As for the young, rather than being regarded for their potential, they are considered high risk as they usually have no previous borrowing record (United Nations, 2006). In addition, older clients usually struggle to get to the nearest financial service provide due to distance. This results in costly transactions by the older segments of the rural population.

2.5.2 Psychological Financial Stress

According to Field *et al.* (2012), one of the growing causes of health problems in recent times is financial stress. As well documented in literature, it is one of the important factors that lead to mental health problems as it turns out to be among the causes of morbidity in developing countries. One major concern of financial stress is that the psychological burden of frequent repayment of loans lies mainly among the low income poor clients who often lack appropriate financial tools to optimally understand and manage loans. This disability usually offsets the positive influence of access to credit by making borrowers psychologically worse off.

Another study by Field *et al.* (2012) aimed at examining whether a small adjustment in the loan structure reduces repayment rigidity for clients to experience the economic benefits of financial access with minimised financial stress and cost

concluded that less structured frequent repayment is cardinal in reducing overall financial indebtedness and cost associated with access to rural financial services (credit).

Drawing vital lessons from the two financial stress index measures, the index for this study was constructed using four indicator variables to capture financial stress. This suggests that it is possible and appropriate to design a suitable financial stress index by coming up with different questions as measuring one underlying construct. The effect of the individual question variables are carefully reported and the effects of the equally weighted average across the four outcomes.

Table 2.1: Depression Anxiety and Stress Scale

	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	13-	9	15-18
Moderate	14-20	14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

Source: Australian Centre for Post-traumatic Mental Health

2.5.3 Regulation and Compliance Costs

According to Bester (2004), anti-money laundering (AML) and combating financing of terrorism (CFT) is not special or different from any other legal regulation applicable to the financial sector. These regulations impose either absolute access barriers or costs on the usage of the financial services under consideration. The cost component that it poses is two-fold such that it directly accrues costs for the client and compliance costs for the financial institutions. These supply and demand side costs jointly increase the cost to clients of accessing financial services.

Furthermore, some financial legal regulatory requirements act as absolute barriers when they prevent persons from accessing financial services by virtue of not having identification documents, thereby become effectively excluded from the formal

financial services. Whereas unaffordable transaction costs lead to either preventing possible clients accessing financial services as too expensive, leading them to abandon the formal sector and turn to informal sector provision (United Nations, 2006**).**

- **Customer identification and verification:** According to the United Nations Convention against Transnational Organized Crime (2003), the 2003 forty recommendations note that as part of the general procedures of customer due diligence (CDD) financial institutions are required to identify their customers and to verify a customer's identity using independent source documents and information which is reliable. The principal norm is that a customer must be subjected to a full range of CDD measures in all cases, and only allowed to simplify or reduce CDD measures with respect to identification and verification in exceptional circumstances such as:
  - Low risk of money laundering or terrorist financing
  - Publicly available information on the identity of the client
  - Existence of adequate checks and controls in national system circumstances for identification and verification.

Bester *et al.* (2004), note that due to this legal regulatory requirement (customer identification and verification), financial service providers incur massive costs in the course of conducting this exercise such that they later pass these costs to their client through high financial fees for the selected products they offer. In addition, the clients equally bear some compliance costs such as time spent, document acquisition and costs of interpreting complex rules. Compliance costs generally have a more profound effect on lower income clients than those with higher incomes.

- **Residential address requirements:** Another critical legal and regulatory requirement that has a bearing on cost to clients is the issue of residential address requirements. According to the 2003 FATF recommendations, information about a client's residential address should be established and verified using identification data. However this practice is only feasible in well developed economies such as the United Kingdom and the United States of

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America rather than developing countries like Zambia. According to the most recent census (2010), approximately 46 % of households in Zambia live in either traditional dwellings or an informal structure, which makes it difficult for them to have registered residential addresses. When financial service providers request existing and prospective clients to produce documented proof of residential address, they are usually required to produce utility bills or other accounts such as land tax payment receipts containing both the name and physical address of the individual. This mode of residential address requirement is difficult for low income clients to produce and as such increases their cost of accessing credit as they have to find alternative proof such as legal affidavits signed by a lawyer.

- **Business registration:** Another key legal requirement set by the various reserve banks across the globe is that for a business to open a business account with a formal financial service such as a commercial bank they are required to be legally registered formally with the registrar of companies. Businesses are mandated by law to be formally registered with the registrar of companies. This requirement has led to many rural businesses not being registered with the registrar of companies as they will need to travel long distances to have their business registered. This further pushes up the cost of accessing financial services (Dinde and Mate, 2006).

2.5.4 Economic Costs

According to Calmeadow (1996) clients in a financial market are faced by hidden costs such as income, time or money forgone that would have been used in another scenario or case if not obtaining financial services. Economic costs associated with accessing financial services can begin during the process of credit application. For instance a scenario, where a client attempts to obtain credit from a bank or MFI, they incur hidden costs such as opportunities in terms of missed investments and time taken to process credit due to lost documents among others.

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Income and wealth are both associated with financial access in theoretical constructs. Increased income would encourage more consumption of all financial services. Moreover, different financial products would have different elasticities of income, especially, the spectrum of alternative savings products. In theories regarding specific financial services such as savings, the permanent income or life cycle hypothesis, both income and wealth are relevant (Dunham, 2002).

2.5.5 Direct Financial Fees

Beck, *et al.* (2006) point out that some of the cost-related factors that may limit access to financial services include documentation requirements, transport costs, and fees. In an important survey conducted among relatively large commercial banks in several countries, whose aim was to investigate price and non-price barriers to regard with credit, deposit, and payment services, the findings show that there are critical variations in parameters.

Proximity of branches and other financial point-of-sale facilities such as service postal offices or mobile outlets greatly reduce the cost of accessing financial services for clients. Proximity to the financial service provider matters greatly. In addition to proximity, the ability to be mobile enhances access to financial services with more ease. According to Goldsmith (1969), many economists across the globe have now focused their attention to issues surrounding high interest on borrowing in a bid to stimulate borrowing which will in turn bring about economic growth.

- **Interest rates:** There has always been a debate on whether interest rates on micro-loans are too high. Much of the micro-finance revolution has been built on the premise that its clients can afford to pay high interest rates given very high marginal returns on capital. Measuring these returns is challenging. An experiment was undertaken to estimate capital returns to investment in micro-enterprises in light manufacturing and commerce in Sri Lanka and Mexico, respectively. Cash or equipment was given to the enterprises. Returns of 5–7 % per month in Sri Lanka and 20 % or more in Mexico were found. These returns appear high as they are based on grants

and not loans. The returns are measured only over the short term and increased capital by 25 % on average. Hence the returns are not replicable over the long term. These estimates suggest that some micro-entrepreneurs are able to pay the high interest charged by micro-finance institutions, at least where these loan resources are being invested. It cannot be denied that high interest rates are costly for borrowers, especially poor ones. Advocacy for the removal of constraining interest ceilings on micro-finance might have overstated the insensitivity of borrowers to high interest rates (CGAP, 2010).

2.6   CONCEPTUAL FRAMEWORK

The conceptual framework shown in Figure 2.1 below was developed out of a review of the existing literature on access to finance. It is adapted from Coetzee (2012), who argues that in assessing cost to client in relation to access or usage of financial services, there are many cost components to consider other than interest rates and fees. Coetzee (2012) stresses that there are demand-damping concerns with regard to access and usage of financial services by the low-income client in the rural areas. These concerns largely consist of high costs incurred in accessing formal services. These costs do not merely involve recurrent transactions, costs and interest payments, rather, they also involve some hidden costs, tangible costs such as economic cost, agency costs, social and cultural costs, psychological costs and regulatory and compliance costs. The figure below shows this study's conceptual framework of different cost components that affect access to finance. The study seeks to empirically identify and quantify overall cost-to-client components in accessing financial services (CGAP, 2012).

This cost-to-client construct framework in Figure 2.1 focuses on customer empowerment mainly in the areas of appropriate product development for low-income poor. The cost-to-client construct framework is seen as is solutions to some of the hindrances of financial inclusion.To understand the problem of access to financial services by majority of the poor it is important to start with the costs low-

income and poor clients must incur to interact with formal financial institutions hence this construct .It is based on early stage research work by the Coetzee (2010) , "Cost-to Client" approach focuses on five main thematic areas of cost contributors (a) direct financial costs such as transportation, fees(b)social and cultural costs, such as the cost of being part of a network to improve access (c) compliance and regulatory costs mainly cost of documentation to adhere to KYC(Know-Your-Customer)(d) economic cost such as opportunity cost of time and lastly psychological costs mostly related to stress debt and over indebtedness.

Economic Opportunity Costs: travelling, queuing, meeting, Asymmetric Info:

Regulatory Compliance KYC, Business Registrations

Social and Cultural Power Arrangements: women; stokvels, moneylenders; chiefs

Financial Interest, fees, transport, savings

Cost to Client Components

Psychological Stress & Fear: Bank branches Default
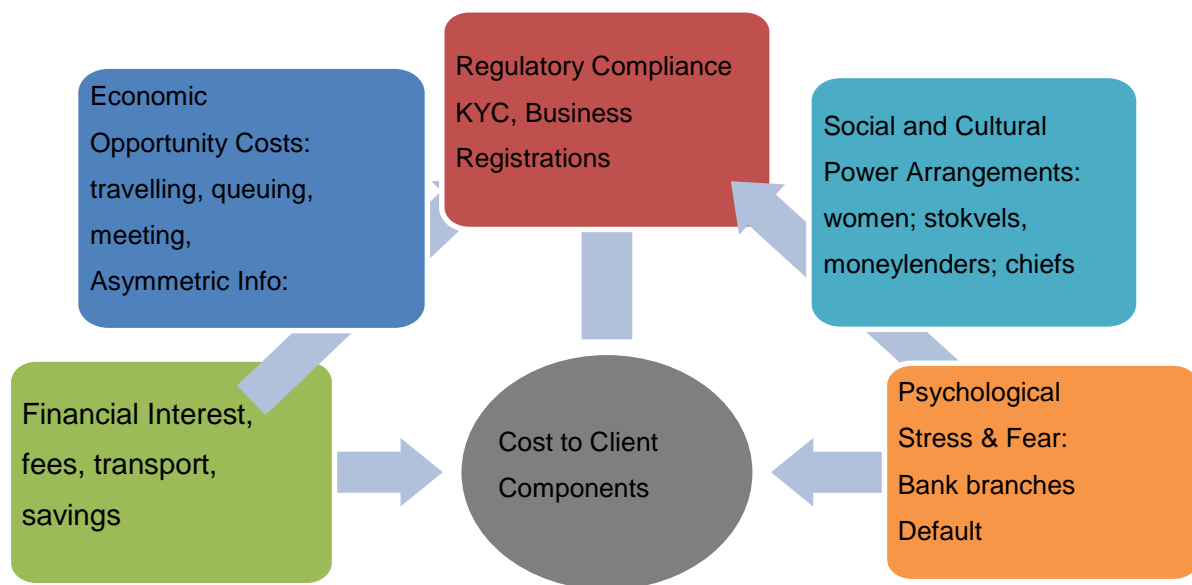
FIGURE 2.1: COST TO CLIENT FRAMEWORK

Source: Coetzee (2012).

2.7   THEORETICAL FRAMEWORK

The agency theory concept was coined as a result of lack of inadequacy of theory which could clearly and sufficiently explain the agency relationships and property rights (Jensen and Meckling, 1976). Stiglitz (1987 in Coetzee, 2004) explains that the principal-agent relationship emanates from the problem of uncertainty, asymmetry of information, moral hazard and adverse selection. The agency relationship exists when an individual who is the principal engages an agent to perform certain tasks on his/her behalf, which involves the delegation of power. The principal who happens to be the employer or capital owner usually designs a

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contract or incentive scheme which motivates the employee (agent) to carry out stipulated duties (Jensen and Meckling, 1976).

Jensen and Meckling (1976) assume that the agent may not always act in the interest of the principal as he/she must maximise utility which may diverge from the original contractual obligations. To counter this problem, the principal usually limits the agent's divergence from the main objective by providing incentives for the agent and expending resources (monitoring costs) to check if the agent is sticking to the objectives and laid down procedure. The agent will expend resources which are known as bonding costs in the transaction. Residual loss occurs as it is impossible to ensure optimal decisions at zero cost to the principal and agent as they carry out their duties. In summary the agency costs are simply the bonding costs by the agent, monitoring costs by the principal, and the residual loss due to divergence between principal and agent decisions (Jensen and Meckling, 1976).

Principal-agent relationships can be applicable to many situations, i.e. credit and insurance industries and many more (Jensen and Meckling, 1976). According to Stiglitz (1987), in the financial sector, a financial service provider who lends a client would have to expend resources to monitor the actions of the borrower. This is in a bid to avoid and lessen occurrence of the moral hazard which surfaces from such a market transaction and leads to a principal-agent problem. This study will only focus on the measurement of the bonding cost incurred by the clients in accessing financial services in rural Zambia.

2.8   APPLICATION TO THE STUDY

This study draws its framework from the theory of the firm (agency theory), discussed in the preceding section above. Linking Figure 2.1 to the agency theory in a credit market, the principal is the financial service provider whereas the agent is the client. Therefore, in a normal situation a financial institution lends out money to a client. Both the agent and the principal will expend some costs in the processes of obtaining the loan and serving the client respectively. The bonding costs may

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include the following financial costs, such as interest, loan fees, and commissions, discounting fees, savings requirements and insurance payments requirements. On the other hand, transportation costs involved in receiving and repaying the loan, fees paid to acquire KYC documents, costs of professional fees such as lawyers, and communication costs, are among the main fees that compose transaction fees. The last category of costs, as suggested by CGAP (2010), is opportunity costs; these include missed investments, forgone income and extra time spent processing the loan. The table below summarises the perspective costs from a borrower's and lender's view. The section on the lender perspective represents the monitoring costs in serving the client in regards to providing credit.

Table 2.2: Cost of Credit

From the Client perspective (Demand Side)	From the Lender perspective (Supply Side)
Financial costs + Transactions costs + Opportunities costs	Operational costs + Loan Loss Reserve + Financial Costs
Total borrowing Costs	Total Lending Costs

Source: CGAP 2010.

From the demand side, the challenge is to minimise transaction and opportunity costs because they don't benefit the client. On the supply side, the major challenge would be to reduce the operational costs so as to become more efficient, to improve services and compete. The client's objective is to ensure that he/she obtains maximum utility from the loan by having flexible repayment terms and low interest rates whereas the financial service seeks to equally see a client repay his /her loan in full with a profitable interest rate.

As such, the both client and financial institution are utility maximisers. There is good reason to believe that the client (agent) will not always act in the best interests of the financial institution. Furthermore, financial institutions are required by law to monitor clients in regard to loan repayments. In case of a loan default by the client,

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the cost of recovery of the loan, or delinquency costs, can be likened to the residual loss in the agency relationship. The costs of recovery of a loan include:

- **Collection costs:** These costs include additional communication and transportation costs for closer monitoring, more frequent visits to borrowers, more extensive analyses of the portfolio, legal fees for pursuing seriously delinquent borrowers, and other costs.

- **Opportunity costs:** This mainly consists of allocating more time, effort and resources to controlling delinquency. This usually results in less time available for the organisation to reach new borrowers and expand services or outreach in regards to delinquency costs.

2.9   SUMMARY

In this chapter, literature focused on the costs-to-client associated with rural finance and access to finance in general was reviewed. According to the findings, the existence of affordable financial services is cardinal for the access and provision of quality rural finance, as experts have noted that the major hindrance to economic growth is a non-functional financial market.

Despite various different financial providers making finance accessible to the low income poor, it still remains very costly due to the various factors which include dynamics of the rural economy, economic, social, cultural and institutional factors. One of the prominent factors that hinder access to finance is cost associated with it. Coetzee (2012), reveals that the constitute of cost-to-client associated with accessing financial services should not only be restricted to direct costs but also other hidden costs. He hypothesised, in addition to the known direct costs mentioned above there are other hidden costs (psychological, economic and regulatory and compliance costs) that determine the overall cost to the client. Theoretically, this study is premised on the agency theory concept (Jensen and Meckling, 1976) that is based on monitoring, bonding and residual costs.

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Principal-agent relationships theory was applied to this cost-to -client study to analyse and estimate bonding costs that clients incur to access financial services. The literature reveals that cost associated with accessing financial service is only not affected by direct factors such as interest rate that also social cultural network, economic, psychological, financial, regulation and compliance costs. Literature further established that a positive relationship exist between access to finance and the social and cultural network related factors such as membership to a social network. While a negative relationship exist interest rate, regulatory and compliance costs and processing costs and economic cost such as opportunity cost of time (Beck, *et al* (2006); Levine 2004; Field *et al* (2012).

CHAPTER 3

RURAL AND AGRICULTURAL FINANCE IN ZAMBIA

3.1   INTRODUCTION

The aim of this chapter is to review relevant literature on rural and agricultural finance in Zambia. The first section of this chapter gives an overview of poverty in Zambia. It then goes on to provide a brief on the rural economy and finance markets. Finally the chapter winds up by reviewing the literature on supply of agricultural and rural finance and key regulatory and supervisory Bodies.

3.2   POVERTY IN ZAMBIA

Poverty remains a major challenge in Zambia as in much of sub-Saharan Africa. To date, it is estimated that the country's rural poverty level stands at an alarming 80 % while that of urban areas is about 34 %. The factors affecting the dynamics of wide spread poverty in Zambia can be better understood from historical, social-economic and geographical perspectives. The vast geographical spread of the country has led to some places having limited or no access to markets, productive assets, technical knowledge, range of services such health, water, financial services etc. This explains why incidences of poverty are highest in rural areas which are mostly distant from the railway line. Socio-economic attributes such as the neglect of the agricultural sector and poor adjustment to free market economic policies have equally contributed to the worsening of the poverty situation in rural areas (Chapoto, 2011).

The country has relatively low agricultural productivity, largely due to the lack of access to inputs, poor transport network development, poor social infrastructure, under-development of markets and lack of financial services (Chapoto, 2011; IFAD, 2012). In response to the alarming poverty rates, government has embarked on an

aggregative development programme as outlined in the National Development Plans (GRZ, 2004; GRZ, 2009). Policy makers have championed viable investment and policy strategy as an effective way of reducing poverty in a country. Some of the key development issues put forward in the national development plan include:

- **Increased investment in agriculture**: Investment in the rural economy is the most cost-effective means of reducing poverty. Thus the Zambian government has renewed its commitment to increase its spending on agriculture. Agricultural technologies such as nitrogen fertilisers, pesticides and new irrigation methods have dramatically reduced food shortages in modern times by boosting yields past previous constraints. The government is further promoting sustainable agricultural practices so as to improve food security, as well as the long-term integrity of the environment, a local and global concern.

- **Improving health care systems for the poor**: The government has equally doubled its efforts to improve the health care system for the poor in the rural areas through (a) increasing access to life-saving drugs and critical health services and (b) investments in local management, training and infrastructure so that these facilities and the staff can provide sustainable, high-quality health care for their communities.

- **Improved access to financial services**: The Zambian government formulated the Financial Sector Development Plan (FSDP) in 2004 with the objectives of addressing the noted challenges as well as to broaden and deepen Zambia's financial system. Furthermore, IFAD (2012) suggests that for the country to effectively address rural poverty there is need for massive investment in the agricultural sector so as to stimulate cultivation and commercialization in rural areas. Currently, most of the rural population does not have access to financial services, whilst those who do lack long-term finance. This leaves the largest source of agricultural financing in rural areas to informal financing and out-grower contract farming operations.

As such, a viable investment and policy strategy is cardinal for poverty reduction in the country. Conversely, several issues continue to impede progress in this area,

among them lack of knowledge, political economy and governance problems. Given the availability of resources, technical knowledge can be used to translate policy into action. Vested interests tend to influence the allocation of public resources. This widens the poverty gap as it hinders the dissemination of knowledge and information relating to the type of policies and investment required if broad-based equitable growth is to be attained, particularly in the rural areas. Therefore, in order to develop pro-poor policies, information dissemination accompanied by solid empirically-based policy is cardinal. Understanding the factors related to income and poverty disparities in the population is essential for the formulation of a poverty reduction and mitigation strategy.

Insights from this section indicate that efforts to address poverty have been driven by developments in access to finance. Therefore the next section examines how access to finance has been developing in Zambia. This will help us assess whether it is offering opportunities to alleviate poverty in the country.

3.3   THE RURAL ECONOMY

Poverty and unemployment remain the biggest deterrents to the county's rural economy. Despite the positive economic growth and improvements in the macroeconomic environment, there has not been a notable decline in poverty levels. Estimates of poverty levels indicate that about 60 % of the Zambian population lives below the poverty line (living on less than $2 a day) and 42 % live in extreme poverty (living on less than $1.25 a day) from World Bank (2012).. Poverty incidence is fairly low in primarily urban areas such Lusaka and copper belt provinces accounting for 22 % and 34 % respectively, whereas in rural areas ,poverty rates are greater than 70 % where agriculture is the main economy livelihood. More so, almost 8.9 million Zambians living below the extreme poverty line are concentrated in rural areas, and the poverty gap ratio for rural populations and their urban counterparts currently stands at 20 % and 3.7 %, respectively, showing a very wide gap.

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According to Dinde and Mate (2006), access to appropriate and sustainable financial services is cardinal to successful contribution to growth and productivity of the global economy. In Zambia, improving the quality and increasing access to agricultural and rural financial services across agricultural and rural businesses, and other target market segments, is highly relevant to national strategies for economic and agricultural growth, poverty reduction, and food security. To address this problem of access at household level, well-designed and well-targeted inclusive financial support is critical for strengthening the rural economy and so as to enhance the transition of the poorest and low-income families out of poverty.

From this section, it is evident that financial services as a remedial measure to simulate rural economies. Therefore the next section examines development and features of the county's rural financial sector how access to finance has been developing in Zambia. This will help us assess some of the unique features of this type of finance and how it affects costs to clients.

3.4   RURAL FINANCE IN ZAMBIA

Financial service providers of in rural Zambia include the following: National Savings and Credit Bank; commercial banks, rural finance schemes, micro-finance institutions, cooperatives and out-grower schemes. Apart from commercial banks scaling down their rural operations, most rural financial service providers have expanded their outreach (Aroa, 2012). This is evident from the number of active clients as well as loans disbursed. Furthermore, the growth of out-grower schemes mostly managed and operated by agricultural marketing companies has dominated over the conventional type of financing. This is owing to the fact that these companies have access to lucrative foreign markets for very high value crops in the European market. Despite Zambia having a considerable number of rural financial service providers, the sector is faced with a number of challenges requiring urgent attention. Some of the challenges include poor infrastructure, high cost of access, high risk in agricultural financing and weak capacity in some institutions. Zambia's

rural financial sector is highly characterised by low financial intermediation, costs of funds and low range of financial services and products (Dinde and Mate, 2006).

3.5 ACCESS TO FINANCIAL SERVICES

According to FinScope (2009), there has been a decrease in the total percentage of adults that are financially excluded from 66.3 % in 2005 to 62.7 % in 2009. An analysis of financial service usage based on a rural/urban shows that 22.6 % of adults in urban areas use a bank product, compared to only 8.6 % of adults in rural areas, whilst 32 % of adults in urban areas use formal financial products, versus 18 % in the rural. The Zambia Business Survey (2010) reports, that 85 % of rural based Small and Medium Enterprises (SMEs) are financially excluded while only 5 % are banked. Physical availability, product affordability and appropriateness are among the key factors that influence access and usage of financial services. Other additional key constraints that are indicative influencing the access-inclusion gap include, poor infrastructure, low returns on savings deposits, high bank charges; high costs of borrowing and Collateral requirements(Fin mark, 2013).

3.6 AGRICULTURAL AND RURAL FINANCIAL SERVICES CONSUMPTION

Zambia Business Survey (2010) notes that apart from the demand factors impacting access and inclusion described in the previous section, the poor or limited supply of agricultural and rural financial services also account for the current low access levels as reported in the FinScope survey (2009). Although over the last six years there have been significant and promising developments in the supply of agricultural and rural finance, an important lesson learned from these efforts is that a vital factor is the appropriateness of financial services for rural populations (GRZ, 2015).

From the above findings, it is clear that that physical access is not necessarily a prerequisite for uptake. Improving uptake of financial services in rural areas seems to be influenced by a number of factors, which include product appropriateness,

affordability, and issues of perception and trust. Therefore, it is important to state that the design and supply of rural finance should ideally encompass the needs of both businesses and households, and should be addressed in a structured way that reduces the cost of access (ZBS, 2010).

3.7   AGRICULTURAL AND RURAL FINANCE SUPPLY

This section examines the supply side of Zambia's rural and agricultural financial sector, and more specifically, introduces and analyses the institutions, sector initiatives, and support partners with respect to their roles and functions in overseeing and/or participating in financial sector strategy development, programme management and implementation as shown in Figure 3 of the analytical framework.

3.8   KEY REGULATORY AND SUPERVISORY BODIES

The three main regulatory and supervisory bodies providing oversight to Zambia's financial sector development under the framework of the FSDP are the Bank of Zambia (BOZ), the Pensions and Insurance Authority (PIA), and the Securities and Exchange Commission (SEC). As part of the FSDP, technical support has also been directed at strengthening the autonomy and capacities of these core supervisory agencies. An overview of their main roles and responsibilities is provided below.

- **Bank of Zambia:** is the supervisory authority responsible for overseeing banks and non-bank financial institutions. The core function of Bank of Zambia is to contribute to an enabling environment for the evolution of the financial sector to stimulate economic growth and social and financial stability. As such, Bank of Zambia is primarily responsible for overseeing the implementation of comprehensive reforms and strategies, which are taking place under the Financial, sector Development Plan (FSDP).

- **Pensions and Insurance Authority (**PIA) is the agency responsible for regulating and supervising the pensions and insurance industries under the

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Pension Scheme Regulations Act (1996) and Insurance Companies Act (1997) respectively. The core of the PIA‟s work under the FSDP has been to implement a comprehensive review of these two Acts.

- **Securities Exchange Commission**: Responsible for regulating, supervising and developing the securities industry in Zambia. Its core functions include overseeing the licensing, registration, and authorisation of financial intermediaries, issuers of debt and equity instruments, and collective investment scheme under the current FSDP (GRZ, 2012).

3.9   SUMMARY

The purpose of this chapter has been to provide relevant literature on rural and agricultural finance in the Zambian context. Review of the poverty and rural economy literature on their impact on rural finance markets has demonstrated that there are significant gaps in the knowledge of the cost to client in relation to accessing rural finance when applied to the Zambian context.

The overall conclusion therefore is that while there has been increasing interest in policy prescription in the area of development rural and financial inclusion there is a lot of work to make financial markets functional and affordable in the rural context. The chapter also analysed the literature on supply of agricultural and rural finance and key regulatory and supervisory Bodies. Therefore, the potential contribution of emerging policy instruments like rural finance policy has not been sufficiently crafted in policy and practice.

CHAPTER 4

RESEARCH METHODOLOGY

4.1   STUDY AREA DESCRIPTION

This study was conducted in Chongwe District of Lusaka Province in Zambia, located about 45 kilometres east of the central business district of Lusaka City. The sample area covered six villages which are the main operational areas for the financial service providers covered by the study. All financial service providers with a presence in Chongwe District were included in the study. These were composed of two commercial banks, one credit and savings bank, and two micro-finance institutions (of which one was private owned and the other ran by a Non-governmental organisation). These five financial service providers have clients spread across the district. The climatic condition of the district ranges from semi-arid to highland, with a diversified economy. The main crops are vegetables and maize; whereas dairy farming is the predominant livestock activity. The people are predominantly of the Soli tribe, mostly belonging to the Christian religion. As at 2012, the population of Chongwe district was estimated at 237 641 (CSO, 2010).

4.2   POPULATION, SAMPLING FRAME AND SAMPLE SIZE

4.2.1   Population

According to Cooper (1998), a population is defined as a set of people or entities to which findings are to be generalised. In analysing the cost-to-client construct at household level, focus was given to households holding accounts with financial service providers of interest to the study. This population was given priority due to the need to obtain empirical evidence in Chongwe District, Zambia. However, for comparison and reliability purposes, a control group included households who did not use formal financial services selected randomly from within the district. The

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households that were included in the control group were those living in close proximity to the households which have access and use financial services (credit).

4.2.2 Sample Size and Sampling Frame

This study adopted the Naing, L., Winn, T., and Rusli',R. (2006) sampling formula to determine the sample size. This was due to the absence of clear information on the population. Hence, the prevalence rate is used in determining as given below:

$$\text{Sampling Size (n)} = \frac{P\,(1-P)Z^2}{d^2} \tag{4.1}$$

P = 0.82 for this study.

Where:

Z statistic (Z): For the 95 % confidence level

Z = 1.96

P = proportion of prevalence (from previous studies).

Where P is not known it is advisable to use 50 % since it gives the maximum sample size.

P = 0.5

d = precision (in proportion of one);

If 5 % e = 0.05

The proportion of prevalence (P) used in this study, was estimated at by careful studying the average sample size used on similar previous academic research in Chongwe area by University of Zambia students and researchers, this was done to draw a more representative sample size . In order to perform non-probability sampling, a sampling frame was constructed based on a list of clients from the financial service providers in the study area Data collection in special cases can be done on the entire population, but in this study, a total of 232 households were collected. The list of households in Chongwe was generated from the selected financial service providers of interest to the study. Specifically, the coverage included 116 households who had access and use financial services and 116 households who did not use formal financial services (control group). The households that were included in the control group were those living in close

proximity to the households which have access and use financial services. A single household represented a sampling unit**.**

4.3   SAMPLING PROCEDURE AND SAMPLE TYPE

4.3.1 Sample Type

The study employed two different sample types. First, the study used purposive sampling which is a non-probability sample that conforms to certain criteria for selecting households. Purposive sampling was useful in this study as it helped to reach targeted samples. The study further used a quota sampling as a second type of purposive sampling. According to Cooper (1998), quota sampling another type of purposive sampling) is used to enhance the quality of the sample representativeness for sample variables in the population which the study had no control over. Quota sampling allowed me as a researcher to sample a subgroup that is of great interest to the study, as it aimed to investigate some characteristics of clients, both those with and without access to financial services.

Secondly, the study employed random sampling in choosing households which do not access and use financial services and living in close proximity to households accessing and using financial services**.** To collect data from the non-access group (control group), the study employed random sampling to choose households without access to financial services, particularly those that resided in close proximity to the households with financial access. The main purpose for using a control group in this research was to eliminate and isolate all confounding variables and bias. For instance, in this study, the control group ensured that no confounding variables affected the results or factored in any likely sources of bias as it (control group) is expected to work in the modelling. The selection criteria took into

consideration the following factors: financial resources,[1] coverage of households,[2] time frame of the study,[3] validity, [4] accuracy and reliability[5] of information collected.

4.3.2   Sampling Procedure Steps

The sampling procedures for this study involved the following steps:

1) A multi-stage sampling technique was used to select representative households for the study. The first stage involved the selection of three out of the six villages from Chongwe District. Of the six villages, namely, Shamboshi, Shibale, Chiyalusha, Bunga, Kwale and Kampekete, three villages, Shamboshi, Shibale and Chiyalusha, were randomly selected.

2) The second stage involved random sampling of 14 wards within these villages. A reconnaissance survey was then conducted to identify households with access to credit services. In the third stage, 116 respondents were selected using the purposive random sampling method to ensure that the sample was representative of the six villages. Furthermore, purposive random sampling was used to sample respondents that accessed credit services from institution that were of interest to the study as they can provide important information that cannot be obtained from other choices.

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[1]The money available to a carry out research for spending in the form of cash. [2]Area to be surveyed in terms of Km^2.

[3]Timeframe for completion of studies. (Only had 2 months to collect the data and write up the report). [4]Validity refers to the essential truthfulness of a piece of data. [5] Accuracy and reliability relates to researchers' claims regarding the accuracy of their data.

4.4.   SCALE OR MEASUREMENT FOR PSYCHOLOGICAL FINANCAIL STRESS

The Beck Depression Inventory–II (BDI-II), is a popular instrument used to screen depression among adolescents and adults (13 years and older). The BDI-II is a 21 questionnaire self-report depression screening item measure. Each item is rated on a 4-point measure scale ranging from 0 to 3, with higher scores indicating higher levels of depression. The measures ask respondents to endorse statements characterising how they had been feeling throughout the past 2 weeks. The maximum total score for all 21 items is 63. According to the BDI-II manual, scores of 0 to 13 denote minimal depression, scores of 14 to 19 denote mild depression, scores of 20 to 28 denote moderate depression, and scores of 29 to 63 denote severe depression. A series of questions were asked with regards to financial access experiences in terms of default consequences such as loan repayment problems and use of bank branches with regards to accessing credit or loans from financial service providers. Another type of measure for psychological financial stress administered by Field et al. (2012) measured clients' level of financial stress by merely asking the following four key questions**:**

- Confidence in ability to repay loan: if they did not feel confident about their ability to repay the loan;

- Anxiety about loan repayment: if they felt worried, tense, or anxious about paying the next loan instalment;

- Argument with spouse about finances: if they argued with their spouse in the last 24 hours.

- Time spent thinking about repayment: if they spent at least five minutes thinking about repayment during the past day.

Drawing vital lessons from the two financial stress index measures, the index for this study was constructed using four indicator variables to capture financial stress. This suggests that it is possible and appropriate to design a suitable financial stress index by coming up with different questions as measuring one underlying construct. The effect of the individual question variables are carefully reported and the effects

of the equally weighted average across the four outcomes. This study drew lessons from the financial stress index as suggested by Field et al. (2012) and depression anxiety and stress scale as constructed by the Australian Centre for Post-traumatic Mental Health. To design a financial stress index for this study, respondents were asked a series of questions in relation to how much they were troubled by financial access in terms of fear of loss of savings, or consequences of default in the context of loan repayment problems and use of bank branches. The depression anxiety and stress scale is defined in the Table 2.1 in chapter two. For the study, any score above 15 was considered indicative of the presence of psychological financial stress.

4.5   MEASURES TO MINIMISE SURVEY ERRORS

4.5.1   Random (Non-Systemic) Errors

To minimise this type of error, the sampling design described above was carefully applied to ensure data reliability. In order to collect reliable data, the design of data collection tools (interviews and questionnaires) went through several iterations to ensure that the fieldwork was conducted by use of high quality data collection tools.

4.6   DESCRIPTIVE STATISTICS

Descriptive statistics such as mean, percentages and standard deviation were employed to describe the socio-economic, demographic and financial access characteristics of the sampled households. Additionally, the t-test and chi-square statistics were employed to compare the households with access to rural financial services and those without. The comparison was done with respect to the explanatory variables in the context of the costs to clients in accessing rural financial services.

4.7   ANALYTICAL TECHNIQUES –MODEL ESTIMATION

Various analytical tools outlined below were applied in the research in order to achieve the objectives set out in the chapter one.

To effectively address the first two objectives of this study, the Heckman two-stage selection model was used. As mentioned earlier, it was stipulated that the client's costs of accessing financial services is driven by utility maximisation under the agency costs theory. This is attributed to the fact that both the principal (financial service provider) and the agent's (client) behaviour are driven by the need to maximise the utility associated accessing and provision of credit services (financial services). Depending on the clients' perception of the utility they are likely to derive from the ability to access and use credit services (financial services), a decision is made, either to access or not. This client behaviour that leads to a discrete choice to be made is modelled in a logical sequence, starting with the decision to access credit services, and then followed by a decision on the cost channel to access to credit services (financial services).

Knowing that client's utility maximisation behaviour cannot be observed, the choice made by the client to access to credit services (financial services) is assumed to represent their utility maximisation behaviour.

Based on the nature of decisions described above, it is rightful and justifiable to use the Heckman two-stage selection model whose estimation involves two stages. In the first stage, the decision to access credit services (financial services or not was assessed using a Probit model. The choice of this model is based on the fact that the decision to access credit services is discreet; it is either one has access or not. A key study assumption is that of a normal distribution and, therefore, the choice of the probit model. The Probit model used in the first stage is as specified in Equation 4.3.

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4.7.1 Heckman Two-Stage Equation

In order to achieve the first objective of the study, the econometric model developed by Heckman, known as the "Heckman two-stage equation" was adopted to identify the factors influencing costs to clients in accessing rural financial services in Zambia. Below is mathematical expression of the Heckman two-stage model estimation:

4.7.2 Probit Model

A)   STAGE ONE

Probit model analysis was employed to determine the status of access to financial services, based on cost-to-client component attributes. The choice of this model is appropriate owing to the fact that access to financial services is a discreet value. This signifies that the household either has access to finance or not. The Probit model is a probability model where the dependent variable (y_i) can either be one or zero, while the continuous independent variables x_i are estimated in the Probit model are specified as;

$$Y_I^* = X_i'\beta + \mu_i \qquad \mu_i \sim N(0, \sigma^2) \quad i = 1...n \qquad (4.2)$$

$$Y_I = Y_I^* \qquad \text{if } Y_I^* > 0$$

$$Y_I = 0 \qquad \text{otherwise}$$

The respondent either has access ($Y_I = Y_I^*$) or does not ($Y_I^* = 0$) as a function of a set of factors x_i {direct financial costs, economic costs, regulatory and compliance costs, social and cultural networks, psychological costs},

Where:

X_i =are explanatory variables corresponding to the ith household's cost-to-client attributes.

Y_I=are observed cost-to-client attributes when there is access and use of a financial service by the ith household.

Y_I^* = is an unobserved continuous latent variable assumed to determine the value of the cost to client households

β = vector of the coefficients of independent variables

μ_i = the independent normally distributed error term (assumed to be normal with zero mean and variance 1).

In the case of a model of access to financial services, the latent variable is only observed if the respondent has a formal credit account with any of the financial service providers of interest to the study.

This stage uses the Heckman two-stage empirical model procedure. The above Probit model can be equally expressed as below for computation purposes;

$$Pr\,(Z_l = 1\,|X_l,\,\beta) = \theta\,(Q\,(X_l,\,\beta)) + \varepsilon_l \tag{4.3}$$

Or

$$Prob\,(Y_{l=}1\,|X_i) = \int_{-\infty}^{Xi'\beta} \Phi(t)dt = \Phi(\,X_i{}'\beta) \tag{4.4}$$

Where:

Y_l^* = is an indicator variable equal to unity for households that have access to credit financial services

$\Phi(.)$ = the standard normal distribution function

β_s = the parameters to be estimated,

Xs = the determinants of the choice.

When the utility that household j derives from access to finance is greater than 0, Y_i takes a value equal to 1 or otherwise 0. It follows therefore, that the equation is:

$$Y_l^* + X_i{}'\beta + V_l \tag{4.5}$$

Where:

Y_l^* = is the latent level of utility the household gets from having access to financial services and $V_l \sim N\,(0,\,1)$.

Based on this assumption, it then follows that:

$$Y_l = 1 \text{ if } Y_i^* > 0 \text{ and } Y_l = 0 \text{ if } Y_i^* \leq 0 \tag{4.6}$$

Empirically, the model can be also represented in the equation below;

$$Y_l = X_i{}'\beta + \varepsilon_i \tag{4.7}$$

Where:

$Y_l =$ is the probability of a household having access to financial services

X_i = is a vector of explanatory variables corresponding to the ith household's cost-to-client attributes

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ε_i = the error term.

B) STAGE TWO

In the second step, the Inverse Mills Ratio (IMR) (λ) was added as a regressor in the cost-to-client function regarding access to financial services, in order to correct for potential selection bias.

$$\lambda = \frac{(\theta\,(Q(XI\,,\beta)\,))}{\Phi(XI\,,\beta))} \tag{4.8}$$

Where:

φ (.) = normal probability density function.

First, the determinants of the cost-to-client attributes were estimated. Then the Inverse Mills Ratio (IMR) from the selected equation was employed as an independent variable in the target equation that will be used to estimate the cost to the client in accessing financial services, as shown in equation 4.7 (cost to client equation)

$$E\,(Z_I\,|Y=1) = \int\,(X_i'\beta\,)+ \gamma\,\lambda^\wedge +\mu_i \tag{4.9}$$

Where:

E = is the expectation operator, Y is the (continuous variable) of the cost to client in accessing financial services

x = the vector of independent variables affecting the costs to client,

β = the vector of the corresponding coefficients to be estimated.

$\hat{\lambda}$ = the estimated Inverse Mill Ratio and

$\mu_i \sim N\,(0,\,\sigma^2)$.

Therefore, Z_i can be expressed as in equation 4.10.

$$Z^*_I = X_i'\beta + \gamma\hat{\lambda} + \mu_i \tag{4.10}$$

This is only observed if a household has access to credit financial services (Y=1). Hence, empirically, Z_i can be finally expressed as shown below:

$$Z^*_I = X_i'\beta + \gamma\hat{\lambda} + \mu_i \tag{4.11}$$

Where:

Z_I = is the cost to client in accessing financial services

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X_i = the vector of independent variables affecting the cost to the client,

$\hat{\lambda}$ = the estimated IMR in the first stage of the Heckman model above and

μ_i = error term.

Equation (4.5) and (4.9) will be jointly estimated using the Heckman two-stage procedure in STAGE A.

Model adapted from Berem et al. (2011)

4.8 METHOD AND MODEL SPECIFICATION

The previous section was devoted to explaining the econometric models to be employed in the analysis of factors determining the cost to client in accessing rural financial services. This section delineated how the probit and the Heckman selection models were implemented. The implementation of the models is presented as follows: first the identification of explanatory variables used in the model. This is then followed by discussion and outline of the models specification. Likely determinants of cost-to-client affecting access to financial services are discussed in the introductory section. These are; education level (EDL), interest rate (Ifeescharge), loan processing fees (LPF), opportunity cost of waiting for the loan (OPCWL), titled land ownership (OTL), total regulatory and compliance costs (TRCcosts), total direct fees (TDcosts), opportunity cost of time travelling to access financial services (OPcosts), psychological financial stress (Psychp), efficiency in time to be served by financial provider (ETscosts), social and cultural network (SCcosts) are used in the Probit and Heckman models' .The dependent and explanatory variables are defined below:

Access to Finance: The dependent variable is a binary variable taken as a categorical variable for the different ranges of financial services, credit and savings. The dependent variable takes a value of 1 if the respondent has access to financial services or otherwise 0. In this study, one (1) was coded for respondents that have access to financial services and zero (0) otherwise. Model estimation is for this segment is given below

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Access to Finance (Y^*) = X_i OPcosts + X_2 Age + X_3 EDL + X_4 lfeescharged $_+$ X_5Gender+ X_6 TDfeescosts + X_7 TRCcosts + X_8 *SCcosts* + X_9 *ETscosts* $_+$ X_{10} Psychp+ X_{11}LPF+ X_{12} OPWL + X_{i3}OTL. + μ_i (4.12)

Where Y^* = *is a dummy variable*

μ_i= error term

X_i = the vector of independent variables

Cost to Client: In the second stage of the cost-to-client construct, a continuous variable is regressed against several independent variables affecting the costs incurred by the client in accessing financial services. Model estimation is for this segment is given below

Cost to Client (Y) = X_i OPcosts + X_2 lfeescharged $_+$ X_3TDfeescosts + X_4 *ETscosts* + X_5*SCcosts* $_+$ X_6TRCcosts + X_7Psychp+$\hat{\lambda}$+ X_8LPF+ X_9 *OPWL* $_+$ μ_i (4.13)

Where **Y =**is a continuous variable

$\hat{\lambda}$ = estimated IMR

μ_i= error term

Selection of Explanatory Variables

The set of independent variables that are hypothesised to determine the overall cost to the client in accessing rural financial services includes direct financial fees, economic factors, regulation and compliance, social and cultural networks and psychological financial stress. Direct financial fees include items such as interest rate, transport, savings, and financial charges and fees, whereas economic factors mainly focus on opportunity costs forgone in accessing financial services. Social and cultural networks basically indicate one's membership to a social network and Psychological financial stress factors give insight into attitudinal factors, such as fear and stress, while regulation and compliance factors focus on the cost of

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meeting legal requirements on the part of the client. The key criterion for selecting potential determinants of overall cost to the client was exogeneity. The explanatory variables which are arguably exogenous to the costs incurred by the client in accessing financial services are selected, as the aim of the model is to show causality. Therefore, explanatory variables are those which are determined outside of the current expenditure system of the household. The selection of these variables as potential determinants was guided by Coetzee's (2010) study on costs-to-clients, as well as by other variables known to be of interest to development finance specialists in Zambia. The selected set of explanatory variables hypothesised to be determinants of costs to the client (credit and savings) in the study are presented below.

4.8.1 Explanatory variables

SOCIAL AND CULTURAL NETWORKS

- **Age:** is a continuous variable that uses household head's age in years as proxy measure and it was hypothesised to have an associated negative coefficient indicating that older household heads will have a lower probability of accessing financial services due to their economic inactive.

- **Gender:** a dummy variable representing sex of a household head, it was hypothesised to have an associated negative coefficient if the gender is female, as women have a lower probability of accessing financial services due to lack of asset ownership owing to the cultural norms

- **EDL**: household head's level of education is represented using a dummy variable. It is hypothesised that households with heads with a higher education qualification have a higher probability of accessing financial service due to their ability to understand financial product thereby lowing their cost of access.

- **SCcosts:** dummy variable representing social collateral attributes measure prototypes such as borrowers' reputation and membership of social

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networks. Being a member of a social and cultural network grouping increased the probability of accessing financial services; thereby it reduces the cost to the client SCcosts will have a positive coefficient indicating that Social collateral increases, probability of accessing financial services as its reduces the client cost of accessing finance.

ECONOMIC COSTS

- **ETscost:** it represents the efficiency in time to be served by financial provider when accessing financial services in minutes. The coefficient of OPcosts is expected to be negative, as it is hypothesised that the more time financial providers take to process loan application the higher the cost clients will incur to access thereby lowering probability of credit access.

- **OPcosts:** it will represent the opportunity cost of time travelling to access financial services in minutes. The coefficient of OPcosts is expected to be negative indicating that more time spent travelling to access financial services lower probability of accessing financial services as the increase the cost of finance

- **OPWL:** it will represent the opportunity cost of waiting for the loan to be processed time in day. The coefficient of OPWL is expected to be negative indicating that more time spent waiting for the loan to be processed lower probability of accessing financial services as the increase the cost of finance

TOTAL REGULATORY AND COMPLIANCE COSTS

- **TRCcosts:** total regulatory and compliance costs will represent the cost in kwacha spent by clients in acquisition of identify document and costs of meeting KYC requirements (residential address requirements, business registration and Interpreting complex financial legal rules. The coefficient of TRCcosts is expected to be negative indicating that more complex and costly regulatory and compliance costs are the lower probability of accessing financial services as its increase the client cost of accessing finance

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PSYCHOLOGICAL FINANCIAL STRESS

- **Psychp:** a dummy variable representing presence of psychological financial stress cost. Any Beck's score above 8 is an indication of client experience financial stress in terms of default consequences such as loan repayment problems and use of bank branches with regards to accessing credit or loans from financial service provider. The coefficient of Psychp is expected to be negative indicating that presence of psychological financial stress the lower probability of accessing financial services as its increase the client cost of accessing finance

DIRECT FINANCIAL FEES

- **L P F**: is a continuous variable representing the loan processing fees in kwacha levied on clients by financial providers in the process on loan application. The coefficient of LFP is expected to be negative indicating that higher LPF fees the lower probability of accessing financial services as its increase the client cost of accessing finance.

- **TDfeescosts:** is another continuous variable representing the total direct cost such as transport and other cost as client accessing financial services. Likewise the TDfeescosts: coefficient of is expected to be negative indicating that higher TDfeescosts: lowers the probability of accessing financial services as its increase the client's cost of accessing finance.

- **Ifeescharged:** it represents the interest fees paid by clients on credit product in percentage. The coefficient of Ifeescharged is expected to be negative indicating that higher interest fees paid the lower probability of accessing financial services as its increase the client cost of accessing finance.

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4.9   SUMMARY

To achieve the first and second objective of estimating the effect of hypothesised access to finance factors on cost –to-client this study employed two-step selection model, which is accomplished using Heckman's two stage selection method. As pointed earlier in the chapter, Heckman selection regression model involves two stages. The first stage involves a probit model in the selection Probability of participation equation to predict the probability of credit status. From probit estimation, appropriate inverse mills ratio (IMR) is generated and employed in the target equation with overall cost to client as dependent variable.'

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4.9.1 MODEL SPECIFICATION OF HECKMAN SELECTION MODEL
Table 4.1: Specific Model Specification

Variable	Description	Unit of Measurement	Expected Signs	
			Access to Credit	**Costs to Client**
Dependent Variables				
Access to Credit	Access or not	1= yes, 0=else		
Costs to Client	Costs in Kwacha	Kwacha		
Independent Variables				
OPcosts	Opportunity cost of time of travelling	Minutes	(-)	(+)
Age	Age of the household head	Years	(-)	
TDfeescosts	Total direct fees	Kwacha	(-)	(+)
EDL	Level of household education	Years	(-)	
Gender	Gender of household head	Dummy(1=male,0 = female)	(+,-)	
TRCcosts	Total regulatory and compliance costs	Kwacha	(-)	(+)
ETscosts	Efficiency in Time to be saved by financial provider	Minutes	(-)	(+)
Ifees	Interest rate	Percent	(-)	(+)
SCcosts	If member of a group of Social and Cultural Network	Dummy(1=yes,0=No)	(+)	(+)
Psychp	Presence of psychological costs	Dummy(1=yes,0=No)	(-)	(+)
OPCWL	Opportunity cost of waiting for the loan	Days	(-)	(+)
LPF	Loan processing fees	Percent	(-)	(+)

Survey data, 2013

CHAPTER 5

RESULTS AND DISCUSSION

5.1 INTRODUCTION

In this chapter, the empirical results of the study are presented. The chapter is presented in four main sections. In the first section, data description and descriptive analysis are presented. The second section deals with the link between the economic characteristics of the households, and access to financial services is discussed. Sections three and four present the econometric analysis employed to investigate the costs associated with accessing financial services in rural areas.

5.2 HOUSEHOLD SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

5.2.1 Discussion of Household Socio-Economic and Demographic Characteristics

Demographic, socio-economic and institutional characteristics of the respondents, such as marital status age, gender, level of education, land under cultivation, income, travel time and financial stress associated with accessing financial services were analysed using descriptive statistics.

5.2.1   Descriptive Analysis

Gender

Results of the analysis in Table 5.1 below shows that 45 % of the households sampled were male headed, while 55 % were female headed. Of the households with access to credit, about 62 % were male headed households, while 38 % were female. Results indicate that there is no significant difference between the gender of household head at 95 % confidence level. It was important to analysis this variable as social norms in some rural setup have a bearing on the access to credit

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due to lack of collateral ownership which is biased towards the Male headed household as a result women headed intend to incur more costs to access credit due to Lack of collateral.

Table 5.1 Characteristics of the Sample Households by Gender

Variables	All Household	Access	Non-Access	*t*-test
Gender of household head	0.45 (0.036)	0.62 (0.041)	0.65 (0.073)	0.31^{NS}

Standard Error of the means are in parentheses **significant at 95 % level of confidence

^{NS} Not significant

Source: calculated from field survey

Age of the Household Head

The age of respondents ranged from 19 to 80 years with a mean of 43.23 years and standard deviation of 12.41. The average age of individuals with no access to financial services was 44.36 years, while that of those with access was 42.81 years. From the survey results, it is clear that the mean difference between individuals with access to financial services and those without with regard to age was statistically significant at 10% significance level, as seen below. Therefore, it indicates that individuals lacking access tend to be older than those with access, implying that over time, households headed by older individuals have a tendency to use fewer of the financial services as they may no longer be as economically active as their younger counterparts.

Table 5.2. Distributions of the Sample Households by Age

	Access		Non-Access			Total Sample	
	Mean	Std. dev	Mean	Std. dev	T-Value	Mean	Std. dev
Age (Years)	42.11	11.85	44.36	12.89	1.82*	43.23	12.41
Maximum	67		80			80	
Minimum	23		19			19	

* Significant a 10 % probability level

Source: own computation, 2013.

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Cultivated land size

Cultivated land size (own and rented) of respondents households varied between 0.5 to1 6 hectares, with a mean holding of 4.23 hectares and a standard deviation of 2.6. Mean cultivated land size for individuals with no access to financial services was 4.35 hectares while it was 3.2 hectares for those with access to financial services. The standard deviation was 1.8 and 3.2 respectively for the two groups. Statistically, there was a significant difference of 1 % between the two groups in relation to the land under cultivation.

Table 5.3 Characteristics of the Sample Households by Cultivated Land Size

	Access		Non-Access			Total Sample	
Characteristics	Mean	Std. dev	Mean	Std. dev	T-Value	Mean	Std. dev
Land Size	4.11	3.2	4.35	1.8	1.67***	4.23	2.6
Maximum		16					16
Minimum		0.25					0.25

* **Significant at 1 % probability level

Source: own computation, 2013.

Educational Attainment of the respondents

Years of schooling completed by the household head was used as measure of educational level. The average years of schooling completed by the household heads was 6.04 years with a standard deviation of 4.64. Mean years of schooling for individuals with no access to financial services was 4.65 years while it was 7.11 years for those with access to financial services. The standard deviation was 3.8 and 2.3 respectively for the two groups. Statistically, there was a significant difference of 10 % between the two groups in terms of educational level.

Table 5.4.Characteristics of the Sample Households by educational Attainment

Characteristics	Access		Non-Access			Total Sample	
	Mean	Std. dev	Mean	Std. dev	T-Value	Mean	Std. dev
Education Level (Years)	7.11.	3.8	4.65	2.3	1.97*	6.04	4.64
Maximum		16				9	16
Minimum		0.				0	0

*Significant at 10 % probability level

Source: own computation, 2013.

Marital Status

With regard to the marital status, from the total sampled household heads 7.33 %,, 71.28 %, 8.62 %,12.67 % were single, married divorced and widowed, respectively. The marital status of household head with non-access were 10.34 %, 71.45%, 8.62 %, and 9.48 % are married, single, divorced and widow, respectively, while for the access group it is 4.31 %, 72.40 %, 8.62 %, and 14.62 % in the same order.

Therefore, results from Table 5.5 below indicate that the percentage difference between the two groups in terms of marital status was insignificant.

Table 5.5 Distribution of Sample Household Heads by Marital Status

Marital status	Access $n = 116$	Non-access $n = 116$	X^2-Value	Total Sample
Single	4.31 %	10.34 %	1.37	7.33 %
Married	72.40 %	71.55 %		71.28 %
Divorced	8.62 %	8.62 %		8.62 %
Widowed	14.62 %	9.48 %		12.67 %
Total	100 %	100 %		100 %

Source: own computation, 2013.

On-farm and non-farm income of the sampled household

Sale of agricultural produce, namely crops, live animals and animal products, are major sources of income for the sampled households. Reported average income earned from crops and livestock in the 2012 farming season was K3,150. On average, households with no access to formal financial services obtained a monthly income of K1, 017, while the access group obtained K4, 467. The mean difference between the two groups was found to be statistically significant at a 95 % level of confidence. This implies that the households who have access to formal credit services have a higher chance of obtaining higher on-farm income than the non-access group.

Table 5.6. Distribution of Sample Household Heads by On-farm and non-farm income

Variables	All Household (*N* = 236)	Household with Credit access (*n* = 118)	Household without Credit access (*n* = 118)	t-test
Monthly Income	K3,150.00 (173.04)	K4,467.00 (146.67)	K1,017.00 (124.78)	456.2**

Standard Error of the means are parentheses **significant at 95 % level of confidence ^{NS} Not significant

Source: calculated from felid survey, 2013.

Assets

The value of assets of the all sampled households was estimated to be K23, 105.90. The average for households with access and those without was estimated at K 29,687.05 and K 7,897.06. Just like on-farm and non-farm income, there was significant difference for households having access to credit financial services and those without, in terms of value of assets, at a 95 % confidence level.

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Table 5.7 Average income for both sub-groups of households

Variables	All households (*N* = 236)	Households with credit access (*n* = 118)	Households without credit access (*n* = 118)	t-test
Value of Assets	K23,105.90 (1,745.04)	K29,687.05 (1,945.76)	K7,897.06 (569.05)	3,617**

Standard Error of the means are parentheses **significant at 95 % level of confidence [NS] Not significant

Source: calculated from felid survey ,2013.

Duration Taken to Get to a Financial Institution

Table 5.8 below shows the average time taken by clients in Chongwe to access different services from the post office, commercial banks, microfinance institutions, money transfer operators, or credit and savings banks. Results indicate that the farthest point of financial access is the commercial bank branch. Therefore, the longer the distance to the financial institution, the more costly it becomes to access financial services.

Table 5.8. Time Taken from Home to a Financial Service in Minutes

	Post Office	Bank Branch	Micro Finance Institution	Money Transfer Operator	Credit and Savings Bank
Mean	25	43	12	28	32
Maximum	48	90	46	50	39
Minimum	21	38	10	18	19

Source: own computation, 2013

Financial Stress

Table 5.9 below shows the financial stress scores distribution of those with and without access to formal finance. Of the two groups of respondents, it was established that the group with formal access to finance had higher financial stress scores recorded as compared to the non-access group. The non–access group members obtained credit from informal money lenders. The high scores above translate into severe and extreme presence of stress with the use of financial services. Therefore, individuals who have access to credit with the formal channels

are more likely to experience more physiological stress compared to those who access credit from the informal lenders. Statistically, there was a significant difference at 5 % between the two groups in relation to financial stress.

Table 5.9. Financial Stress Measure

Variables	Average Financial Stress Score		
	Access to Finance (%) $n = 116$	T-Value	Non-Access to Finance (%) $n = 116$
Applying for a Loan	19	1.07**	15
Waiting for the Loan	24		21
Repayment of the Loan	31		25

**Significant at 5 % probability level

n = Number of respondents

Source: own computation, 2013.

5.3 HETEROSCEDACTICITY, MULTICOLLINEARITY AND NORMALITY ANALYSIS

This section reports the research findings on costs to client in accessing credit services in rural Zambia. The first part of this section seeks to check for the existence of heteroscedacticity, multicollinearity and other regression problems such as normality.

- **Multicollinearity test:** The presence of multicollinearity arises when one or more independent variables are in linear combination with the others. This results in the estimated regression coefficients having the wrong signs and furthermore, its affects the magnitudes of the *t*-ratios, which end up being small, such that it leads to seriously wrong conclusions. Literature suggests two major measures that are recommended for effectively testing for multicollinearity. These are Variance Inflation Factor (VIF) for association among the continuous explanatory variables and Contingency Coefficients for dummy variables (Gujarati, 2003). The table below shows the Variance Inflation Factor (VIF) values for the continuous explanatory variables.

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- **Interpretation of VIF:** The larger the value of VIF the more collinear the variable X_i is. As a rule of thumb, if the VIF of a variable exceeds 10, there is a multicollinearity problem.

From VIF values displayed in Table 5.10 below, it is clear that all the continuous explanatory variables that were considered did not have any significant multicollinearity problem as the VIF mean value is 1.62. Furthermore, no VIF of a variable above exceeded 10. Similarly, multicollinearity test results for dummy variables indicated no serious multicollinearity problem as shown in Table 5.11 below.

Table 5.10: Variance Inflation Factor (VIF)

Variable	Variance Inflation Factor (VIF)
EDL	1.13
ETscost	1.15
Ifees	1.18
TDC	3.68
Age	1.13
OPcosts	1.10
TRCcosts	3.53
LPF	1.16
OPCWL	1.05
Mean	1.62

Source: Survey data, 2013.

Table 5.11: Contingency Coefficient for Dummy Variables

Variable	Gender	Psych	SCcosts	Credit status
Gender	1	0.027	0.053	0.083
Psych		1	0.066	0.097
SCcosts			1	0.122
Credit status				1

Source: Computed from the field survey data, 2013.

- **Heteroscedacticity:** One of the fundamental assumptions in regression analysis is that the errors *(u$_i$)* have a (constant) variance σ^2. In the event that

errors have no constant variance, then heteroscedacticity exists (Gujarati, 2003). The presence of heteroscedacticity results in the estimated parameters of a regression being inefficient though consistent. In the case of the binary dependent variable models such as the Probit model, it is more practical to make some reasonable check for the presence of heteroscedacticity in cross-sectional data. Therefore, in this study, all variables were checked using a robust standard error test. Results in Table 5.12 below indicate that there was no serious problem of heteroscedacticity in the model. As such all the variables were retained in the analysis.

Table 5.12: Maximum Likelihood Estimates Using Robust Standard Error to Test Heteroscedacticity

Variable	Coefficient	Robust Std. Err.	Z	P>|Z|
ETscost	−0.472	0.121	−3.88	0.00***
Ifees	−3.937	0.97	−4.15	0.07*
TDC	−15.22	3.72	−4.00	0.00***
Psychcp	−6.9	1.913	−3.52	0.02**
Age	−0.07	0.034	−2.16	0.38
OPcosts	−0.080	0.023	−3.49	0.00***
TRCcosts	−7.404	1.80	−4.09	0.00***
Gender	−6.86	2.011	−3.41	0.16
SCcosts	0.13	0.051	2.71	0.07*
LPF	−0.89	0.28	−3.14	0.02**
OPCWL	−0.025	0.121	−3.88	0.00***
EDL	3.46	0.067	4.02	0.07*
OTL	0.44	0.345	2.56	0.00***

Number of observations = 232

Log likelihood function = - 43.09. ***, ** and * represent level of significance at 1 %, 5 % and 10 % respectively

Source: Survey data, 2013.

- **Normality:** Results from normality tests indicated that residuals were normally distributed at significance of 5 %. The calculated Jarque-Bera coefficient was 3.2 which is less than 5.99. Since JB = 3.20 < 5.99, and since the *p*-value of the JB statistic = 0.35 > 0.05, the null hypothesis was not

rejected Therefore, it was concluded that the residuals are normally distributed.

5.4   COSTS TO CLIENT ECONOMETRIC MODELING RESULTS

5.4.1 Step 1: Selection Probability of Participation Equation

This section seeks to answer the first objective of the study which was to identify the determinants of costs to clients in accessing rural credit financial services in Zambia. The results and discussions are followed by the table below which represents the selection equation in the two stage Heckman model. The significant variables in the selection equation below are education level (EDL), interest rate (Ifeescharge), loan processing fees (LPF), opportunity cost of waiting for the loan (OPCWL), titled land ownership (OTL), total regulatory and compliance costs (TRCcosts), opportunity cost of time (OPcosts), psychological financial stress (Psychp), efficiency in time to be served by financial provider (ETscosts), and social and cultural network (SCcosts). Table 5.8 shows the results of the binary probit regression coefficients of determinants of cost to client factors in accessing rural credit services. A positive sign on the variable's coefficient indicates that higher values of the variable that decrease the odds against of a client's access to credit services as it reduces the cost-to-client and vice versa. The results show that social and cultural networks, age, education level and ownership of titled land have significant positive effect on the rural clients' access and usage of credit services by reducing cost to client expenditure. However, total direct fees, opportunity cost of time in waiting for the loan, loan processing fees, total regulatory and compliance costs, opportunity cost of time, psychological financial stress, efficiency in time to be served by financial provider all had a significant negative effect in terms of cost to the client on the rural clients' access to and usage of credit services.

Table 5.13: Step 1 Selection Probability of Participation Equation

Variables	Coefficient	Std. Err.	Z	P > Z
OPcosts	−0.08	0.03	−2.44	0.01**
Age	0.07	−0.045	−1.61	0.11
EDL	0.82	0.45	1.81	0.07*
Ifeescharged	−3.93	1.61	−2.44	0.02**
Gender	−6.86	2.8	−2.45	0.06*
TDfeescosts	−15.22	5.07	−3.00	0.03**
TRCcosts	−7.404	2.46	−3.01	0.03**
SCcosts*	0.138	0.0734	1.88	0.06*
ETscosts	−0.47	0.17	−2.78	0.05**
Psychp*	−6.74	2.5	−2.63	0.08*
L P F	−0.801	0.44	−2.02	0.04**
OPCWL	−0.025	0.10	−2.45	0.03**
OTL	0.34	0.02	1.12	0.01**

Number of observations = 232, Log likelihood function = −53.04

***, ** and * represent level of significance at 1 %, 5 % and 10 % respectively

Source: Survey data, 2013.

The results in Table 5.1.3 indicate that a marginal (one-year) increase in the education level enhances the probability of access to credit products and services by 0.82 %. This finding confirms the United Nations (2006) findings which state that limited education level also reduces a potential customer's ability to seek out credit services that may otherwise be available. However, as clients gain experience with credit services usage, financial literacy increases. When appropriate services are available, experienced clients easily adapt to understanding loan contracts and requirements of financial service providers (United Nations, 2006).

For a one-minute increase in opportunity cost of time spent in travelling and queuing for credit services, there is a drop in access by 0.025 % in terms of cost to client. Time taken to get to a financial service provider negatively affects access to financial services as it increases the costs (Johnson and Morduch, 2007). Being a member of a social and cultural network grouping and ownership of titled land increased the probability of accessing credit services by 0.138 % and 0.34 %

respectively; thereby it reduces the cost to the client. This conforms to Zeller (1994) who states that group affiliation reduces information asymmetry and substitutes for tangible collateral thus attracting lending and thereby reducing the cost of accessing financial services.

Interest charged by financial service providers on credit accounts held, decrease access to credit products and services. In this case, every one percent charged in interest decreases access to credit products by 3.93 % as it increasing costs. Higher interest and charges levied by financial service providers increase the cost hence this hinders access to credit products (Zeller, 1994). Total regulatory and compliance costs (TRCcosts), loan processing fees and total direct fees decreased the probability of accessing credit services by 7.4 %, 0.8 % and 15.22 % respectively, thereby increasing the cost to the client. This conforms to the United Nations (2006) findings that the legal identify of clients and place of residence negatively affect access to credit products. Rural populations generally have a harder time accessing financial services due to their distant locations from points of financial access. Furthermore, the lack of good road networks blocks access, especially during rainy seasons, when many rural areas are inaccessible.

The presence of psychological financial stress decreases the probability of accessing credit products by 6.74 % thereby increasing the cost to the client. This finding is in line with studies conducted by United Nations that observed that clients may limit their use of formal financial institutions for a number of reasons that include fear of stigma, theft, knowledge of corruption and mismanagement in the institution, which leads to lower product usage.

In the second step the model shows the effect of the cost-to-client components: interest rate (Ifeescharged), loan processing fees (LPF), opportunity cost of waiting for the loan (OPCWL), total regulatory and compliance costs (TRCcosts), opportunity cost of time (OPcosts), psychological financial stress (Psychp), efficiency in time to be served by financial provider (ETscosts), and social and

cultural costs (SCcosts) on total cost to client as continuous variables. The factors that significantly influence cost to client are shown in the table below.

5.4.2 Step 2 Target Equation with Overall Total Cost-to-Client as Dependent Variable

In the second step, the model shows results of the effect of the cost-to-client construct as described in Figure 2.1 on the amount spent in accessing credit services (overall cost to client) from a financial institution. This section seeks to answer the second objective of the study, which was to investigate the extent to which factors identified in step one influence costs to the client in accessing rural financial services in Zambia.

The results of the econometric analysis showed that time taken (efficiency) to be served by financial provider (ETscosts), psychological financial stress (Psychp), interest fees charged by financial service provider on credit products (Ifees), loan processing fees (LPF), opportunity costs of time spent travelling (OPcosts), total direct fees (TDfeescosts), total regulatory and compliance costs (TRCcosts), psychological financial stress (Psychp), opportunity cost of waiting for the loan (OPWL), and social and cultural network membership (SCcosts) were all significant in influencing costs to the client among respondents in term of credit services. The effects of these significant variables on the dependent variable are discussed below.

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Table 5.14.: Step 2 Target Equation with Overall Cost to Client as Dependent Variable'

Variable	Coefficient	z	P>|z|
OPcosts	0.05	−0.61	0.08 *
Ifees	0.87	−4.05	0.00***
TDfeescosts	3.03	3.27	0.01***
ETscosts	0.08	−5.43	0.02**
SCcosts*	−0.368	3.09	0.04**
TRCcosts	1.24	−2.38	0.02**
Psychp*	−0.14	−0.84	0.04**
LPF	0.016	−0.06	0.06 *
OPCL	0.07	−2.66	0.09 *
Mills Lambda	0.107	2.98	0.03**
Lambda	0.07		
Rho	1.00		
Sigma	0.107		

***, ** and * represent level of significance at 1 %, 5 % and 10 % respectively

Source: Survey data, 2013.

- **Psychological Financial Stress (Psychp):** As expected, a client's past stressful experiences with lending institutions influence the cost to the client positively and significantly at 5 % level. The presence of financial stress increases the cost to the client in accessing credit products by 0.014 Kwacha, *ceteris paribus*.

- **Total Regulatory and Compliance Costs (TRCcosts):** This variable was found to influence the amount of cost to the client expended in accessing credit products positively and significantly (at 5 %). That is, clients who spent more money to meet their regulatory and compliance requirements incurred more costs in accessing credit products than those who spent less, keeping the other factors constant, because every kwacha spent on "know your customer" (KYC) requirements increases the cost to the client by 1.24 kwacha.

- **Efficiency (ETscosts):** This variable was found to influence cost to the client in accessing credit products positively and significantly at a 5 % level.

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As indicated in the table above, for each extra minute spent by the financial service provider in attending to a client, the client's costs to access credit products increases by 0.08 Kwacha, *ceteris paribus*. This suggests that each additional minute increase in ETscosts raises the cost to the client, thereby reducing the accessibility of credit products.

- **Loan Processing Fees (LPF):** This variable was positive and significant at 10 % level in influencing costs to the client in accessing credit products. Therefore, every kwacha charged on loan processing by the financial providers leads to an increase in client's costs to access credit services by 0.016 kwacha, *ceteris paribus*. This entails that each additional kwacha charged in loan processing increases the cost to the client, thereby reducing the accessibility of credit products.

- **Opportunity Cost of Waiting for the Loan:** This variable was positive and significant at 5 % in influencing the cost to the client in accessing credit products. As indicated in the table above, for each extra day spent by a client waiting for the loan approval, the client's costs to access the credit product increase by 0.07 Kwacha, *ceteris paribus*. This suggests that each additional day that passes raises the cost to the client, thereby reducing the accessibility of credit products.

- **Social and Cultural Network Membership (SCcosts):** This variable was negative and significant at 5 % in influencing the costs incurred by the clients to access credit products. That is, households that belonged to social and cultural networks incurred less cost in accessing credit products. Holding all the other factors constant, membership of a social and cultural network decreases costs to the client by 0.368 kwacha.

- **Interest Charged:** This variable was positive and significant at 5 % level in influencing costs to the client in accessing credit products. Therefore, a one percent increase in interest fee levied on credit accounts leads to an increase in client costs to access credit services by 0.87 kwacha, *ceteris paribus*. This entails that each additional increased percent in interest

charged increases the cost to the client, thereby reducing the accessibility of credit products and services as indicated in the table above.

Table 5.15: Elasticities of Target Equations after Heckman

Variables	Marginal effects	Z	P > |Z|
OPcosts	0.01	3.75	0.00**
IfeesCharge	2.75	3.02	0.08*
TDfeescosts	4.78	4.11	0.04**
ETscosts	1.09	2.68	0.03**
SCcosts*	−3.02	−1.85	0.06*
TRCcosts	0.28	3.89	0.01***
Psychp*	0.78	1.68	0.05**
LPF	2.02	2.78	0.03**
OPWL	0.15	1.50	0.01*

***, ** and * represent level of significance at 1 %, 5 % and 10 % respectively

Prob > X^2 = 0.0000, Log likelihood = −171.68

Source: Survey data,2013.

A 1 % increase in the amount of total regulatory and compliance costs leads to a 0.28 % increase in the cost to client expenditure. It follows therefore that complex regulatory and compliance requirements worsen accessibility of finance products as they raise the cost of obtaining credit, as hypothesised by Beck (2006).

The amount of interest charged on credit and loan products likewise leads to an increase in cost to client expenditure in accessing credit products. A 1 % increase in interest rates levied by financial providers leads to a 2.75 % increase in the cost to the client expenditure. It follows therefore that higher interest charges worsen access to credit services by positively influencing cost to client expenditure. This conforms to the findings by Gok (2006) and Fuchs and Beck (2004) that higher interest rate charges lower access to financial services as it raises the cost.

Every 1 % increase in the opportunity cost of time spent travelling (opcosts) leads to a 0.01 % increase in the cost to the client. Opportunity cost of travelling, waiting for the loan and efficiency of the financial service provider when serving a client

positively influence client cost expenditure, as seen in the table above. A 1 % increase in all of the above would lead to 0.01 %, 0.15 % and 1.09 % increase in client costs expenditure respectively. This confirms the findings of Sults (2003) that established a positive relationship between time spent in accessing financial services (opportunity costs) and cost of obtaining credit.

Unlike the other factors above which positively influence costs to clients, membership of social and cultural networks greatly reduces client costs. Hence it has a profound effect on accessibility of credit products. Membership of social and cultural networks decreases the cost to the client by 3.02 %. As hypothesised by Grant and Coetzee (2011), different economic interest groups, village associations and traditional wealth-creating structures easily obtain credit from one another without any tangible securities, hence bringing down the cost of accessing financial services.

In conclusion, to answer the first objective conclusively, it can be empirically proven that interest rate, loan processing fees, opportunity cost of waiting for the loan (OPcwl) and travelling (OPcosts), total regulatory and compliance costs (TRCcosts), membership of social and cultural networks (SCcosts), psychological financial stress (phscy), loan processing fees, efficiency (etscosts), and total direct costs are factors that significantly influence the cost to the client in accessing rural credit service.

5.5   SUMMARY

This study was intended to analyse determinants of the overall cost to the client in accessing financial services by rural households in Zambia. For data analysis, descriptive statistics, probit and Heckman regression models were used. Descriptive statistics results show that there were significant differences between the access and non-access groups with respect to age, level of education, and land

under cultivation, income from on-farm activities, travel time and financial stress associated.

On the other hand, from 13 explanatory variables used in the probit regression model, 12 variables had a statistically significant influence on access of credit rural finance, namely education level (EDL), interest rate (Ifeescharge), loan processing fees (LPF), opportunity cost of waiting for the loan (OPCWL), titled land ownership (OTL), total regulatory and compliance costs (TRCcosts), total direct fees (TDfeescosts) opportunity cost of time (OPcosts), psychological financial stress (Psychp), efficiency in time to be served by financial provider (ETscosts), and social and cultural network (SCcosts).

Finally, Heckman two-stage regression analysis was employed to investigate the extent to which factors identified in the probit model above influence costs to the client in accessing rural financial services in Zambia. All nine variables were entered into the regression analysis and were found to be statistically significant at less than 10 % level. These variables are interest rate (Ifeescharge), loan processing fees (LPF), opportunity cost of waiting for the loan (OPCWL), total regulatory and compliance costs (TRCcosts), opportunity cost of time (OPcosts), psychological financial stress (Psychp), and efficiency in time to be served by financial provider (ETscosts), total direct fees (TDfeescosts), social and cultural network (SCcosts). All variables had the expected sign as hypothesised in Chapter Four (Table 4.1), which is supported by economic theory.

CHAPTER 6

SUMMARY, CONCLUSION AND POLICY IMPLICATIONS

6.1   INTRODUCTION

Since the advent of the financial sector development plan in 2006, the Zambian government has put emphasis on rural and agricultural finance intended to restructure the financial sector and development of the rural economy. Over the past decade the government has stepped up efforts to reduce poverty in rural areas by promoting financial deepening and investment policies through the provision of a wide range of financial services.

The summary and conclusions of the study and policy recommendations follow in the following two sections. The last section of this chapter provides pointers for possible areas for future research work.

6.2   SUMMARY AND CONCLUSIONS OF STUDY FINDINGS

This study was motivated by that fact the majority of the global population remains without adequate access to affordable financial services, especially the rural population. Providing affordable access to appropriate financial services for the low income population in rural areas is an important catalyst for their economic, financial, and socio-cultural development. The impact of high costs of finance available to low income population in rural areas may result in serious economic and financial development decline for the local rural economy. As a result this research undertook empirical investigation to identify what constitutes the costs to clients in accessing financial services in the rural areas of Zambia. This research is relevant at this time in light of low and poor development of the rural financial markets in Zambia.

An econometric analysis approach was used to analyze cost-to-client factors affecting the likelihood of accessing financial services (credit) by rural households in Zambia. The study was premised on three main objectives, which were (1) to identify the factors influencing costs to the client in accessing rural financial services in Zambia, (2) to investigate the extent to which these identified factors influence costs to the client in accessing rural financial services in Zambia, and (3) to propose appropriate policy for rural financial markets based on the results of the cost-to-client analysis. The study successfully modeled the determinants of the cost to clients in accessing rural financial services (credit services), using financial costs, economic costs, regulatory and compliance costs, social and cultural costs and psychological cost characteristics. The method of analysis adapted for this study was based on a procedure used by Berem, *et al* (2011), which was to determine the extent of value addition contingent on the decision of a honey producer to participate in value addition activity.

The summary results of the analysis showed that the cost to the client in accessing rural financial services (credit) is largely determined by components such as loan processing fees, interest fees charged by financial providers on credit products, total regulatory and compliance costs, opportunity cost of time spent travelling, time taken (efficiency) to be served by financial providers, membership of social and cultural networks, opportunity cost of waiting for the loan, and loan processing fees and psychological costs. Total direct fees and total regulatory and compliance costs were crucial for determining the cost to the client in terms of accessing credit products and services.

The regression results support the summary findings and empirical literature in general. The results indicated that a 1 % increase in the amount of total regulatory and compliance costs leads to a 0.28 % increase in the cost to client expenditure. This finding is in line with Beck (2006) stating that complex regulatory and compliance requirements worsen accessibility of finance products as it raises the cost of obtaining credit. Just like the studies of Gok (2006) and Fuchs and Beck (2004), this study equally concluded that higher interest rates worsen access to

credit services by positively influencing cost to client expenditure. Empirical evidence indicated that a 1 % increase in interest rate levied by financial providers leads to a 2.75 % increase in the cost to the client expenditure. The study further established that 1 % increase in the opportunity cost of time spent travelling (opcosts) leads to a 0.01 % increase in the cost to the client. This confirms the findings of Sults (2003) that established a positive relationship between time spent in accessing financial services (opportunity costs) and cost of obtaining a loan. Others factors under consideration such as opportunity cost of travelling, waiting for the loan and efficiency of the financial service provider when serving a client positively influence client cost expenditure. Results showed that a 1 % increase in all of the above would lead respectively to 0.01 %, 0.15 % and 1.09 % increase in client costs expenditure.

The amount of interest charged on credit and loan products likewise leads to an increase in client expenditure in accessing credit products. A 1 % increase in the interest rate levied by financial providers leads to a 2.75 % increase in the cost to the client. It follows therefore that higher interest charges worsen access to credit services by positively influencing client expenditure. This conforms to the findings by Gok (2006) and Fuchs and Beck (2004) that higher interest rate charges lower access to financial services.

Unlike factors such as interest rate, loan processing fees, opportunity cost of waiting for the loan (OPcwl) and travelling (OPcosts), total regulatory and compliance costs (TRCcosts), membership of social and cultural networks (SCcosts), psychological financial stress (phscy), loan processing fees and efficiency (etscosts) positively influence costs to clients, membership of social and cultural networks greatly reduces client costs. As regression results indicated, membership of social and cultural networks decreases the cost to the client by 3.02 %. This finding is consistent with Grant and Coetzee (2011) who stated that different economic interest groups, village associations and traditional wealth-creating structures easily obtain credit from one another without any tangible securities, hence bringing down the cost of accessing financial services.

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6.3 POLICY IMPLICATIONS

Although a number of a policy propositions for rural financial markets could be drawn from estimated results of the cost to client analysis, this section suggests some policy implications based on how access to affordable financial services, especially for the rural population, can be enhanced through alteration of the identified cost to client factors in accessing rural financial services through policy changes and product innovation. Given that policy formulation in the areas of financial Inclusion, rural and agricultural finance would be based on reducing cost-to-client attributes such as regulatory and compliance costs, economic costs and psychological costs were identified. The following are some of the policy formulations that should be considered;

- **Regulatory and Compliance Costs:** Financial institutions have over the past few years played a very vital role in bringing financial services closer to the poor, especially those in the rural areas. Usually these financial service providers face high operation costs and often have to adjust their traditional mode of service delivery to be able to meet the needs of the low-income groups by curtailing the high costs and risks. Therefore, there is need for the government through the central bank and other financial regulatory bodies to relax their regulatory and compliance requirements and lower capital reserves requirements for financial institutions in order to enable them to invest in rural areas so as to make their investments profitable as they seek to serve the low-income group. This policy proposition will help address the issue of total regulatory and compliance costs, since, if left unchecked, they may worsen accessibility of finance products as they raises the cost of obtaining credit, as hypothesized by Beck (2006).Regulatory and compliance requirements are generally a major challenge to rural inhabitants. As such, financial regulatory bodies need to find a mechanism of easing the complexity of prevailing regulatory and compliance

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requirements in order to increase the rural poor's access to financial services. This study recommends that policy efforts should be focused on lowering interest rate and other direct financial fees as reduction in capital reserve requirements increase in the numbers of rural finance thereby increasing supply of financial services and lowering of prices.

- **Economic costs:** Both local and central government should invest in infrastructure developments such as roads and railway lines to smoothen and enhance transport and communication in rural areas. The government should encourage the private transport sector and telecommunication companies to invest in rural areas as this leads to investment in less costly product delivery methods such as mobile and branchless banking systems coupled with investments in customer relations and well trained staff to reduce the time spent by clients in accessing credit and savings products

- **Social and cultural costs:** Lessons from the study, indicate that a negative relationship exist between costs to clients and Social and cultural networks. To enhance this positive attribute towards reducing costs to clients, group lending and social networking should be encouraged in rural areas.

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- **Psychological Financial Stress:** To reduce incidences of financial stress among rural clients, financial regulatory bodies should strengthen capital reserves requirements regulation of financial institutions to avoid loss of savings by clients. Financial associations should embark on vigorous financial education to help remove fears and stigma that surround access and usage of financial services. Financial institutions equally ought to design attractive savings and credit products by lowering the interest rates, loan processing fees and other direct fees incurred in accessing savings and credit services.

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- **Total Direct Costs:** Reduction of capital reserve requirements for financial institutions willing to operate in rural areas could in turn lead to lower and more flexible direct financial fees and charges Equally, there is need for the government and other relevant authorities to acknowledge that financial institutions can only expand their services to rural areas when and if it is profitable to do so. Therefore, it is important that the government provides appropriate incentives and grants to help cover the initial costs, as these would ease the burden on financial institution entry into the rural finance market.Financial service providers should utilize modern today technology such mobile banking and other last money transaction technologies as the have shown to significantly improve customer experience, enhance customer loyalty, increase customer value, and lower service costs in accessing financial services. This can only be achieved by designing of appropriate financial products which are in line with client needs. The products should further have appropriate delivery channels that offer that is reliable and convenient to clients. Therefore it is important that financial service providers design that are easier for clients to understand and compare since simple products are usually more affordable and flexible

6.4   RECOMMENDATIONS FOR FUTURE STUDY

The implications of the research findings, as highlighted in Chapter Five, indicate that financial costs, economic costs, regulatory and compliance costs, social and cultural costs and psychological cost characteristics all significantly influence costs to clients. However, for a deeper understanding of the cost-to-client construct, a holistic study of the environment should be conducted, as shown in the cost to client framework in chapter two.

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REFERENCES

Ahmed, Z. U. (1989) Effective Costs of Rural Loans in Bangladesh. *World Development* 17(3): 357–363.

Bastelaer, T. V. (2000). Does Social Capital Facilitate the Poor's Access to. Credit? A Review of the Microeconomic Literature the World Bank Social. Development Family Environmentally and Socially Sustainable Development. Network.

Beck, T. and Torre, L. (2006). The Basic Analytics of Access to Financial Services, Paper presented at the Latin American Regional Study on Access to Finance, World Bank, Washington, DC.

Beck, T. and Fuchs, M. (2004). Structural Issues in the Kenyan financial system: Improving competition and access. World Bank Policy Research Working Paper. No. 3363.

Bee, K.F. (2007). Rural Financial Markets in Tanzania: An Analysis of Access to Financial Services in Babati District, Manyara Region. Unpublished PHD thesis. University of Pretoria.

Berem, R.M., Owuor, G.O. and **Obare, G**. (2011). Value Addition in Honey and Poverty Reduction in ASALs: Empirical Evidence from Baringo County, Kenya. *Livestock Research for Rural Development 23 (12), Article #243.*

Bester, H., Chamberlain, D. and Hawthorne, R. (eds.) (2004). Making insurance markets work for the poor in Botswana, Lesotho, Namibia and Swaziland – Scoping Study. Johannesburg: GENESIS.

Brown, W. *(*2001). Credit programs for the poor and seasonality in rural india *www.brown.edu/.../brown.edu.../seasonality_%20paper_11-26-01_0.pdf*

Calmeadow, M. (1996). *A Canadian Experiment in Sustainable micro-finance.* Produced for Department of Finance, Economic Development Policy Branch**.**

Chapoto, A, Banda, D., Haggblade, S. and Hamukwala , P .(2011). Chapoto .M (2011). *Factors Affecting.PovertyDynamics in Rural Zambia*. Food Security Research Project Working Paper No. 55.Lusaka, Zambia: FSRP.

Central Statistical Office. (2010). Census Report.

Central Statistical Office. (2012). Annual Reports.

CIA Fact Book Report (2013).www.cia.gov/library/publications/the-world-factbook/.../ni.html .

CGAP (2012) .Financial Inclusion and Stability: What Does Research Show? www.cgap.org/.../CGAP-Brief-Financial-Inclusion-and-Stability.

CGAP (2010).The State of Financial Inclusion through the Crisis Financial. www.cgap.org .

CGAP (2002). Developing Deposit Services for the Poor: Preliminary Guidance for Donors. Consensus Microfinance Guidelines. Washington, DC: Consultative Group to Assist the Poor.

Christen, J. (2004). Domestic Debt Market in sub-Saharan Africa. IMF Working Paper 04/46, Washington D.C.

Claessens, S. (2005). Access to Financial Services: A Review of the Issues and Public Policy Objectives. Paper presented at the Fifth Services Experts Meeting on universal Access, Paris, 3-4 February, organized by the OECD and the World Bank.

Coetzee, G. (2004). Rural Finance Working Paper: Department of Agricultural Economics, Extension and Rural Development University of Pretoria. ageconsearch.umn.edu/bitstream/18036/1/wp020010.pdf

Coetzee, G. (2010). Cost to Clients to Access Financial Services. A Framework and Lessons from South Africa. 5th African micro-finance Conference. Available at www.up.ac.za. [Accessed 14 February 2013].

Coetzee, G. and Grant, W. (2011). The role of membership-based financial services in reaching the under-banked primarily in rural areas. Background document for August Conference on African micro-finance.

Chomsky, E (1966). Cost control by regression analysis. The Accounting Review .www.aejournal.com/ojs/index.php/aej/article/download/ [Accessed 14 March 2013].

Cooper,H. (1998). Synthesizing Research: A Guide for Literature Reviews, *3rd edn.* *Thousand Oaks, CA: Sage Publications*.

Devkota, D. (2006). Access to and Control over Household Resources. *Journal of Agricultural Research* 7(1): 99-107.

Dinde, S. and Mate, W. (2009). Innovative approaches in the provision of rural finance with emphasis on smallholder producers. The case of Zambia. Available at www.afraca.org [Accessed 4 December 2012].

Dunham, C. R. (2002) "The Role of Banks and Nonbanks in Serving Low and Moderate Income Communities. *Office of the Comptroller of the Currency*. Washington, D.C

Egwuatu, B. (2008). Reducing Poverty through Better Credit Delivery: The Asian Experience. *CBN.* 8-14.

Eisenhardt, K.M. (1988). Agency-and-Institutional-th6eory explanations: the case of retail sales compensation. *The Academy of Management Journal*, 31(3):488-511.

Fafchamps, M. and Minten, B. (2002). Returns to Social Network Capital among Traders. *Oxford Economic Papers* 54: 173-206.

Field, E., Rohini, P., John, P. Y, and Jeanette, P. (2012). *Repayment Flexibility Can Reduce Financial Stress*: A Randomized Control Trial with Microfinance Clients in India Published: September 26, 2012.DOI: 10.1371/journal.pone.0045679

FinMark Trust (2011). The Status of Agricultural and Rural Financial services in Southern Africa Available at www.finmark.org.za/wp-content/uploads/Rep_rural %20finance2011.pdf. [Accessed 3 January 2012].

FinScope Zambia (2009). *Presentation of Top Line findings*.

Fletschner, D., Anderson, C.L. and Cullen, A. (2010). Are women as likely to take risks and compete? Behavioural findings from central Vietnam. *Journal of Development Studies* 46(8): 1459-1479.

Getz, C., Geanakoplos, G.M. and Polemarchakis, H.M. (2008). Social capital, organic agriculture, and sustainable livelihood security: Rethinking agrarian change in Mexico. *Rural Sociology*, 73(4): 555-579.

Godwin, E. (2008). The Role of micro-finance Institutions in the Economic Development of Nigeria. Bullion Publication of Central Bank of Nigeria. pp. 17-20.

Goldsmith, R.W. (1969). Financial structure and development. *New Haven, CT: Yale University Press*.

Gok, V. (2006).Survey on unregistered non-banking financial institutions in Kerala, 2005, Department of Economics and Statistics, Thiruvananthapuram.

Gujarati, D.N. (2003). Basic econometrics, Fourth edition. *McGraw-Hill*, New York.

GRZ. (2012).Rural Finance Policy and Strategy.

Heckman, J. (1979). Sample selection bias as a specification error, *Econometrica* 47: 153-161.

Ibrahim, A. (2012). An analysis of farmers' access to formal credit in the rural Nigeria. www.academicjournals.org/journal/AJAR/article-abstract/6F61D6838726

IFAD. (2012). *Rural Finance: Policy*. Rome: IFAD.

Jensen, M., and Meckling, H. (1969). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure *Journal of Financial Economics*, October 1976, 3(4): 305-360.

Johnston, D. and Morduch, J. (2007). The Unbanked: Evidence from Indonesia. www.nyudri.org/wp-content/uploads/2011/10/unbanked.pd

Kaino, T (2005). Rural Credit Market in Myanmar: A Study of Formal and Non-formal Lenders. Asian. *Journal of Agricultural Development* 4(1): 3-15.

Kasirye, I. (2007). Rural Credit Market in Uganda: Evidence from the 2005-2006. National Household survey paper submitted for African Economic Conference on opportunities and Challenges of the Development for African Global Arena.

Kruja, Z. (1997). Capital Access in Rural Virginia. A Dissertation Submitted to the Department of Applied Economics Virginia Polytechnic Institute and State University. Online [Accessed 22 February 2013].

Ledgerwood, J. (2012). *The New Microfinance Handbook A Financial Market System Perspective 2013.* International Bank for Reconstruction and Development. Washington, DC: The World Bank.

Levine, R. (1997). Financial development and economic growth: views and agenda. *Journal of Economic Literature*, 35(2):688-726

Mabula, K. (2012). How can government promote financial inclusion for woman: The Zambian Case Second African Women's Economic Summit, Lagos, Nigeria: 13–14 July 2012.

Martínez, J.L. (2006) Access to Financial Services in Zambia. World. Bank Policy Research Working Paper 4061.

Marge, S. (2003). Banking sector development and credit constrained households in Estonia.World Bank Policy Research Working Paper 4041.

Nagarajan, G. and Meyer, L.R. (2005). Rural Finance: Recent Advances and Emerging Lessons, Debates and Opportunities. Working Paper AEDE-WP-0041-05, Department of Agricultural, Environmental, and Development Economics. The Ohio State University (Columbus, Ohio, USA).

Naing, L.T. and Rusli, B.N. (2006). Practical Issues in Calculating the Sample Size for Prevalence Studies

Okten, C and Osili, U.O. (2004). Social Networks and Credit Access in Indonesia. *World Development* 32 (7): 1225-1246.

Ozler, A. (2012). Poverty Alleviation Through Geographic Targeting: How Much Does Disaggregation Help?" *Journal of Development Economics*, Vol. 83(1), 2007, pp. 198-213.

Putnam, R.D. (1993). The prosperous community: social capital and public life. The American Prospect, 4(3): 27–40. Available at http www.philia.cafilespdfProsperous Community.pdf [Accessed 18 April 2013].

Sodano, V., Hingley, M. and Lindgren, A. (2008). The usefulness of social capital in assessing the welfare effects of private and third-party certification food safety policy standards: trust and networks. *British Food Journal*, 110(4/5): 493-513. [Online] Available from: www.emeraldinsight.com/0007-070X.htm [Accessed 3 April 2013].

Stiglitz, J. E. (1987) Principal and agent, *The New Palgrave: A Dictionary of Economics*, v. 3, pp. 966- 71.

Sukhwinder, A., Saasa, O., Stone, R., Carpio, M.A., Williams R. and Grossman. J. (2012). Development of Rural Finance Policy and Strategy in Zambia Available at**.**www.opml.co.uk/sites/opml/files/Zambia %2520Rural %2520Fi [Accessed 14 February 2013].

United Nations Convention against Transnational Organized Crime report. (2003)

United Nations Development Program. (2013).Human Development Index. r.undp.org/sites/default/files/reports/14/hdr2013_en_complete.pdf

United Nations. (2006). Building Inclusive Financial Sectors For Development UN Publications Number: E.06.II.A.3ISBN: 92-1-204251-1.

World Bank. (2003). Policy Initiatives to expand financial access in South World Bank Online at info.worldbank.org/etools/docs/library/232729/Kirsten [Accessed 4 February 2013].

World Bank. (2005). Meeting Development Challenges Renewed Approaches to Rural Finance Available at www.ruralfinance.org/.../1124790789977_WBank_Meeting_ Development-_Challenges [Accessed 1 March 2013].

World Bank .(2012). www.worldbank.org/financailinclusion.

World Bank .(2013). www.worldbank.org/financailinclusion.

Yaron, J., Benjamin, M.and Charitonenk .S. (1997) Promoting Efficient Rural Financial Intermediation the World Bank Research Observer, vol. 13, no. 2 (August 1998), pp. 147–70 ©1998 The International Bank for Reconstruction and Development / THE WORLD BANK.

Yung, P. (2010). Construction Cost Studies Using a. Multivariate Regression Method. ISBN 978-1-905148-16-5.17.

Zambia Business Survey. (2010). siteresources.worldbank.org/INTAFRICA/../zambia_biz-survey.pdf

Zeller, M. (1994). Determinants of Credit Rationing. A Study of Informal Lenders and Formal Credit Groups in Madagascar *World Development* 22(12): 1895-1907.

ANNEXURE A: DATA COLLECTON TOOLS

Questionnaire number: | | | |

Cost to clients to Access rural financial services.

Department of Agricultural Economics and Extension Education:

University of Pretoria,

South Africa.

Survey Instrument-COST TO CLIENT QUESTIONNAIRE

SECTION A: IDENTIFICATION DATA

PART A: Household identification: Enumerator: Fill in the information asked for in the following table

Variable	Information
Household Identification Number	
Village	
Name of household head	
Name of Interviewer	

PART B: Socio-Economic Demographic Data: Enumerator: Fill in the information asked for in the following table on you and your household. I now would like to ask you a few questions about your household

Age	Sex	Marital Status	Education Level	Household Number	Professional Employment status	Type of Employment Specify	Source of Income
DMO1	**DMO2**	**DMO3**	**DMO4**	**DMO5**	**DMO6**	**DMO7**	**DMO8**

DM03   1=Single   1= Male   1= Primary Education   1= Farming

          1=Yes

2=Married   2=Female   2= Secondary **DM02**   **DM04**   **DM08**

                             DMO6

Education   2= Non –Farming Income   0=No

3=Divorced or separated   3= University   3= Grants

 4=Widowed   4= No Education / drop out   4=Salaries

5= Remittances   6=Others Specify_____

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PART C: Land holding/Ownership Data: Enumerator: Fill in the information asked for in the following table on Land holding.

I would like to ask you a few questions about your land holding

Land ownership Status	Number of Hectares	Land Tenure
LHU01	LHU02	LHUO3

LHU01

1= Yes

0= No

LHU03

1=Family owned –Non Titled

2= Family owned – Titled

3= Leased

4= Government ownership

5=other please specify_____

SECTION B: INVENTORY OF HOUSEHOLD ASSETS

PART D: Household Assets Data: Enumerator. Fill in the information asked for in the following table on household assets.

Item and code :Read Aloud Name of Item		Do you own a….? YES=1 NO=2>>Next item
Bed	1	
Radio /Stereo	2	
Cell phone	3	
Television	4	
Car	5	
Bicycle/ Motor cycle	6	
Sewing Machine	7	
Farming Implements e.g. Hoe, Shovel, Plough Sheller, pick and sprayers	8	
Livestock e.g. Chicken. Cattle and Goats	9	

SECTION C: AGRICULTURAL PRODUCTION AND MARKETING

PART E: Agricultural and Production data: Fill in the information asked for in the following table about Agricultural production and Marketing.

What was the main crop you planted last farming? See Codes below	Who was the major buyer of **APM01**?	How much produce was harvested from last farming season?	How much of produce **(APMO3)** was purchased from last farming season?	What was the mode of payment for the crop **(APMO3)**? State below	What was the main livestock you reared last farming season?	Who was the major buyer of **APM06**?	What was the mode of payment for your livestock products?
APMO1	**APMO2**	**APMO3**	**APMO4**	**APMO5**	**APMO6**	**APMO7**	**APMO8**

APMO 1	UNITS	APMO5 /APMO8	APMO2/APM07
1= Maize	1=50kg	1=Bank	1=Processors
2=Soya beans	2=25kg	2=Cash payment	2=Local traders
3=Vegetables	3=Tonnes	3= Cheque	3=NGOs (WFP)
4= Groundnuts	4=Crates	4= Others	4=Export Companies
5=Others_____			5= Government
6= Others _____			

PART F: General Access to Agricultural finance: Fill in the information asked for in the following table about the agricultural financing of your farm.

Source of Funding		Did the farm use … as a source of funding last year? 0=No 1=Yes	Does the farm usually use … to finance inputs (e.g. feed, livestock drugs, labour) 0=No 1=Yes	Does the farm usually use … to finance inputs (e.g. feed, drugs, labour) 0=No 1=Yes
FUND	**Description**	**CR01**	**CR02**	**CR03**
1	Retained earnings(Savings)			
2	Credit from Financial Services provider			
3	Government			
4	Fellow farmers or informal lenders			
5	Remittances - Family members, relatives			
6	NGO or Project / Cooperative			

SECTION D: SOCAIL AND CULTURAL NETWORKS

PART G: Social and Cultural Network: Enumerator I am now going to ask you questions about social and cultural networks.

Are you member of any social and cultural networks? e.g. savings club chiliimba, Stokvels	If answer to SCO1 is YES. Please state the network you belong to?	How often do you contribute to these savings clubs? state below	State the number of members in your SCO2?	How much time do you spend with your SCO2?	Which of the following services listed below SCO6 does your club SCO1engage?	Does the group encourage resource exchange? e.g labour etc.	How do you rate the level of trust among your group members and their ability to keep promises?
SCO1	SCO2	SCO3	SCO4	SCO5	SCO6	SCO7	SCO8

SCO1/SCO4/SC07

1=Yes

0=No

SCO2

1= chiliimba

2=Stokvels

3=Money

4=Women

SCO3

1= every week

2= Every Month

3= every two months

4=Twice per year

5=Once a year

SCO8

1=Very Good

2=Good

3=Bad

4=buy assets as a group

SCO6

1=lend out to members

2=Collect money from each

3 =buy assets as a group

4= Others_____

Official use Social and Cultural Network   **SC010** Yes ☐   NO ☐

SECTION E: COST TO CLIENT – CREDIT

INTRODUCTION: I am now going to ask you questions about credit access

Do you borrow money or do you have a loan? 1. Yes 2. No	If you borrowed from a financial service provider? State Below	Why did you borrow the money?	If you have **not!** **Borrowed** Why have you not borrowed?	What was the interest charged on your borrowed funds?	Does your provider of Credit require you to meet some KYC requirement? I.D.	Would you estimate the amount of time spent when queuing up to borrow money?	Do you pay more to quick obtain your credit from your financial services provide? If Answer what is how much more to you pay?
CO1	**CO2**	**CO3**	**CO4**	**CO5**	**CO6**	**CO7**	**CO8**

C01/CO6/C08	**C02**	**C04**	**C03**
1=Yes	1=financial cooperative	1=Fear of debt	1=life events i.e. school fees,
2=N0	2=micro finance institution	2= interest payment is high	2= Emergencies i.e. medical
	3=NGO	3= Fear of failure to pay back	3=Assets i.e. buying land,
	4=Bank	4=others specify _____	4=others specify _____
	5= Savings Club i.e. chiliimba		

SECTION F: COST TO CLIENT – CREDIT 2

INTRODUCTION: I am now going to ask you questions about credit access

How long do you take to get to **CO2**? State below	Which mode of transport do you use to get to your Credit financial institutions	If you walk to financial institution? Explain you don't use public transport? State below	If you use public transport to get the your financial institution what would a return trip cost you ? State below	What is the distance to and from your financial institution To your home? In Km? State below	If you use your own car to get to your financial institution how much do u spend on fuel?	If you use bicycle to get the financial institution what would a return trip cost you in term of time spent?	What other fees do you incur to obtain credit?
TCO1	**TCO2**	**TCO3**	**TCO4**	**TCO5**	**TCO6**	**TCO8**	**TCO9**

TC01	TCO2	TCO3
1= under 10 minutes	1=walk	1=close: don't transport
2=between 10 to 20 minutes	2=own car	2= too expensive
4= between 20 to 30 minutes	3=taxi	3=it is not available
5=about 30 minutes	4=bicycle	4=don't come regularly
6= between 30 to 60 minutes	5=mini bus	5=it is not safe
7=about 1 hour	6=others	6= others
8=more than hour		

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SECTION J: PSYCHOLOGICAL COSTS (FEAR AND STRESS)

Introduction Enumerator: Fill in the information asked for in the following table. I now would like to ask you a few psychological related questions with the experience of accessing financial service in this area.

Now choose number from the scale below to show how much you are troubled you have with worrying of using the financial services mentioned in the previous section in terms of loss of savings or general fear of the worse would happen when using it?

```
0    1    2    3    4    5    6    7    8
```

No fear   slightly disturbing   definitely disturbing   markedly disturbing   very severely disturbing
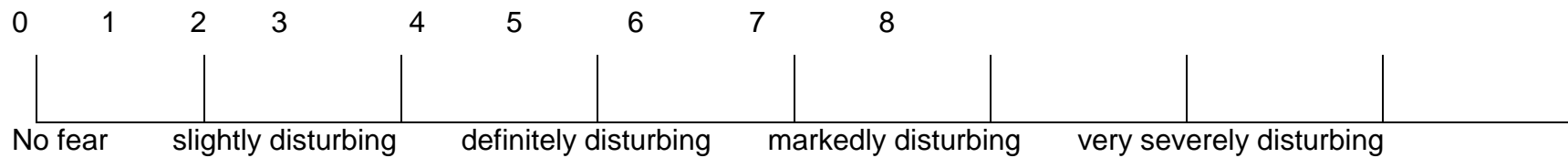
PSCO1 Score:_____

In regards to accessing credit or loans from your financial service provider, I would like you to share the experiences through the question that will follow. Now choose number from the scale below to show how much you are troubled by financial access in term default consequences such as loan repayment problem and use of bank branches using the question below and write down the number in the space opposite (score)

Variables	Beck Depression Measure :PSC01 :Score :
Applying for the loan	
Waiting for the loan	
Repayment of the loan	
Oral feelings	

Kindly share the experience you have had in regard the **application process** of the loan through to the **repaymen**t **process**. Please highlight moments.

_____

_____

_____

_____

_____

_____

_____

_____

_____

Official use psychological costs   PC01 Yes ☐   NO   ☐

Cost to clients to Access rural financial services

Department of Agricultural Economics and Extension Education:
University of Pretoria,
South Africa

Survey Instruments

Interview- Guide-Key Informant- (Financial Service Providers)

Welcome, Thank you for meeting me

Introduction

My name is Ndimbwa Derick from University of Pretoria, am conducting a research, on the cost to client associated with accessing rural financial services. The aim of the study is to ascertain the cost associated issues' in accessing rural financial services in order to capture lessons that can be used in future interventions. I will be taking some notes during the session.

All responses will be kept confidential. This means that your interview responses will only be shared with research members at University at Pretoria and I will ensure that any information included in my report does not identify you as the respondent. Your opinion and views will be very helpful for us as it will give us a better understanding the structure cost to client in accessing rural financial services. The discussion will take about 45 minutes to 1 hour and your answers will remain strictly confidential.

Section A: Cost to client - Credit

- Describe the client base (customers) in terms of credit product usage in Chongwe for your institutions?

- Briefly describe credit product features such as loan amount, instalment size, loan term, collateral, terms and conditions to open, maintain the account, documentation required to open the account, and nature of account?

- Briefly describe price structure of your credit products in terms of: interest rate charged, processing fee, membership fee, any other fee?

- Explain the process or methodology followed by your institution as financial service to open the loan account?

FOCUS GROUP GUIDE

Focus-Group	Information Source	Topic of Focus discussion
Woman	-Vision Fund -FINCA -Savings Groups	-Financial Fees (Interest, fees, transport, savings) -Economic Costs (Opportunity Costs: travelling, queuing, meeting) -Social and Cultural Networks (Power arrangements: women; stokvels) -Psychological (Experience with Financial services)
Moneylenders;	Chiefs	-Model of operations - Financial Fees -Requirements to be met -Clients

COST-TO-CLIENT DATA COLLECTION TOOLS – CHECK LIST

Variable	Description	Unit of Measurement	Source: Survey Instrument Type
Dependent variables	Individual use or access to one or more of the financial services i.e. credit, savings, insurance and transaction	1=access and usage of financial services 0=Otherwise	Questionnaire
Access to finance			Financial service provider
Independent Variables			
Transport	Transport Cost	Zambian Kwacha (ZMW)	Questionnaire
			Transport Association Fare
Fees	Financial Fees Charges	Zambian Kwacha (ZMW)	Questionnaire
Interest rate	Interest rate	Interest rate	Financial service provider
Economic Costs	Opportunity Costs	Time spent / Zambian Kwacha ZMW	Questionnaire
	Agency Costs	Zambian Kwacha	Financial service provider
Regulatory and Compliance	Regulatory and Compliance Costs	Zambian Kwacha	Questionnaire
			Focus Group
			Key personal Interview Guide
Social and Cultural Network	Social and Cultural Network	If member of a social network group? Dummy (1=yes 0=No)	Questionnaire
			Focus group
Psychological Financial Stress	Psychological Financial Stress	If experience financial stress? Dummy (1=yes 0=No)	Questionnaire- Beck Depression Index
Efficiency	Taken to be served	Time spent in minutes	Questionnaire/ Financial service provider

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