

## Determinants of Cost to Client in Accessing Rural Financial Services – A Case of Zambia's Chongwe District

Derick M Ndimbwa<sup>1\*</sup> Gerhard. K Coetzee<sup>2</sup> Johann F. Kirsten<sup>3</sup>

1. Department of Agricultural Economics, University of Pretoria: Private Bag X20, Hatfield, 0028, South Africa.  
Physical: Lynnwood Road, Hatfield, Pretoria 0002, Gauteng
2. World Bank group ; the Consultative Group to Assist the Poor (CGAP) Customer and Provider Solutions 1825 I Street NW | Suite 700 | Washington DC 20037
3. Bureau for Economic Research (BER) at Stellenbosch University, 10 Van Riebeeck St, Stellenbosch Central, Stellenbosch, 7600, South Africa

*The research is financed by The African Economic Research Consortium (AERC) at University of Pretoria.*

### Abstract

Providing affordable access to appropriate financial services for the low-income population has been an on-going challenge for most developing nations, Zambia included. On this premise, this paper seeks to empirically investigate and quantify costs to clients in accessing financial services in the rural areas of Zambia, based on cross-sectional primary data collected in the Chongwe district from 236 households, documentation and key informant interviews. This study used the Probit and Heckman selection models to analyse cost to the client factors affecting the likelihood of accessing financial services (credit) by rural households in Zambia. Results revealed that households' costs incurred by clients in accessing financial services are not limited to financial costs such as interest, fees, transport and savings, etc., but equally other hidden costs such as regulatory and compliance costs, economic costs, psychological costs, and social and cultural costs. The study recommends that policy formulation in the areas of financial inclusion, rural and agricultural finance should be based on reducing cost-to-client attributes such as the regulatory and compliance costs, economic costs and psychological costs identified above.

**Keywords:** costs to client, financial services, access to finance, Heckman two-stage model.

### 1. Introduction

Access to financial services that meet rural needs is vital to economic development in low-income developing states such as Zambia. The rural poor cannot hope to lift themselves out of poverty if their access to finance is deemed expensive. Financial markets in developing countries and particularly the sub-Saharan African (SSA) region, including Zambia, are largely underdeveloped, lack depth and are highly inefficient. According to Morduch (1995), rural financial and insurance markets in the rural areas are generally non-existent, and of those that do, many work imperfectly. Despite this the importance of financial markets which suit and meet the unique requirements of the rural population cannot be over-emphasised owing to rural economies' dependence on agricultural production. The importance of rural financial services can be best understood by examining their potential contribution to the development of the enterprises and agricultural sector (CSO, 2010). Despite rural financial products being largely designed and implemented with rural households as the core intended clients, most of these products have been labelled as inappropriate and expensive. Well-designed products are needed that enable rural financial clients to adequately borrow, save, and be able to insure against any risk as they expand their set of economic activities (Diagne, 2001). A notable number of prominent rural financial programmes such as rural credit, savings and insurance, do not take into account some of the key socio-economic and environmental attributes of the rural financial market that have a bearing on the cost of accessing financial services. Despite 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, 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. This paper seeks to empirically investigate and identify the overall costs to clients in accessing financial services in the rural areas of Zambia. The paper concerns itself with the literature on policy and development in the rural finance markets, seeking to tackle the constraints of the cost to client for financial services in rural Zambia.

#### 1.1 Objective of the Study

The main objective is to investigate determinants that affect the overall cost to the client in accessing rural financial services in Zambia. Data used in the study comprised both primary and secondary data. The specific objectives were:

- 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

### 1.1.2 Factors likely to affect Cost to Client

According to Egwuatu (2008) 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, and price risks in agriculture, among others. 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 (Zeller, 1994). However, the most common factor known to affect access is overall cost-to-client, though very little is known about it. This section therefore serves as a guide to the key concepts and knowledge on cost-to-client accessibility of finance. The next two sections discuss cost related literature, which includes a summary of variables likely to affect costs to the client and, finally, a theoretical framework. This will help the study create an understanding of cost to client in relation to access to finance. The next section is meant to discuss elements that are fundamental in coming up with the theory of cost-to-client factors. Social networks are 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 guarantees, 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, the low income poor households means they 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 (Getz, C, 2012). This situation of lack of vital information on potential borrowers and 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 or poor borrowers valid substitutes for individual collateral and low-cost alternatives to imperfect creditworthiness information. Social collateral measure prototypes used by financial service providers are borrowers' reputation, membership of social networks, and location of traditional financial or physical collateral (Bastelaer, 2000). According to Sodano *et al* (2008), it is fundamentally important to understand how cultural factors such 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. According the World Bank (2008), though 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. Furthermore, other social factors that are important are literacy levels and psychological stress associated with accessing financial services. 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 the official languages used by financial service providers hamper 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. 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 or 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 factor that has a profound effect on cost is legal regulatory requirements such as customer identification and residential verification conducted by financial service providers. To comply with these requirements, clients incur costs such as time spent, document acquisition and costs of interpreting complex rules (Bester *et al.*, 2004). Economic costs associated with accessing financial services are incurred as early as credit application process. For instance, in 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 (Calmeadow, 1996). 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 with 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 post office services or mobile outlets greatly reduce the cost of accessing financial services for clients. Proximity to the financial service provider also figures largely. In addition to proximity, the ability to be mobile allows greater access to financial services. According to Goldsmith (1969), many economists across the globe have now focused their attention on issues surrounding high interest on borrowing in a bid to stimulate borrowing which will in turn bring about economic growth.

This section of the literature reveals that cost associated with accessing financial service is only not affected by direct factors such as interest rate, but also by social cultural networks, and economic, psychological, financial, regulation and compliance costs. The literature further establishes that a positive relationship exists between access to finance and the social and cultural network-related factors such as membership of a social network, while a negative relationship exists 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).

### 1.1.3 Conceptual framework

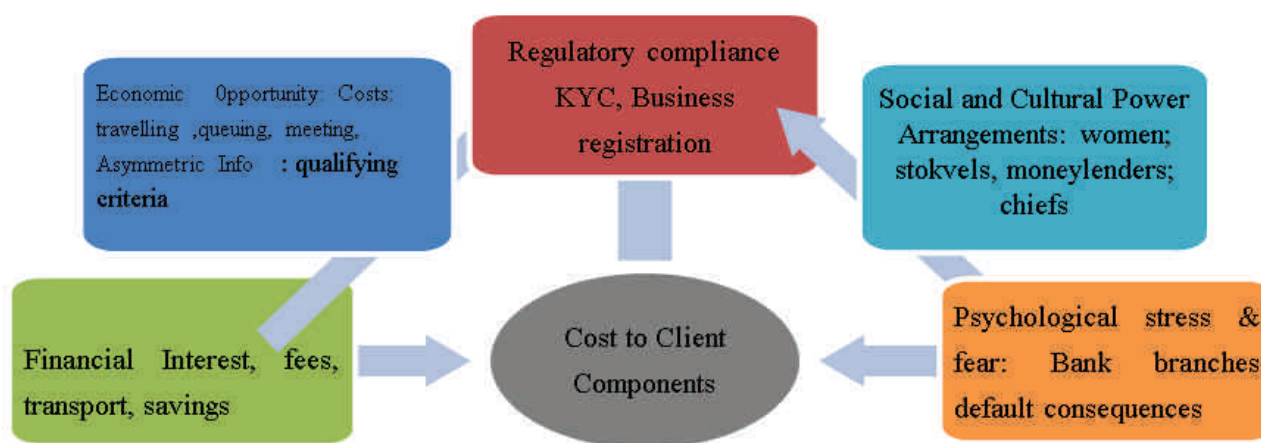


Figure 1. Cost to Client Framework

The conceptual framework shown in Figure 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-dampening concerns with regard to access and usage of financial services by the low-income client in 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, as well as tangible costs such as economic costs, agency costs, social and cultural costs, psychological costs and regulatory and compliance costs. The study seeks to empirically identify and quantify overall cost-to-client components in accessing financial services (CGAP, 2012)

### 1.14 Theoretical Framework

The agency theory concept was coined as a result of lack of inadequacy of theory which could clearly and sufficiently explain 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 contract or incentive scheme which motivates the employee (agent) to carry out stipulated duties (Jensen and Meckling, 1976). It is assumed that the agent may not always act in the interest of the principal as they 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 (Coetzee, 2012). 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 processing of obtaining the loan and serving the client

respectively. The bonding costs may include the following financial costs such interest, loan fees, commissions, discounting fees, savings requirements and insurance payments requirements, whereas transaction fees include transportation costs involved in receiving and repaying the loan. Fees paid to acquire Know Your Customer (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 cost as suggested by CGAP (2010) is opportunity costs, which include missed investments, forgone income and extra time spent processing the loan.

## 2.0 Methodology

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. Data used in the study comprised both primary and secondary data. The primary data were collected using structured questionnaires from a cross-section of randomly selected rural household heads that had access to and used financial services (credit), either formal or informal. Information gathered from the survey included data on socio-economic and demographic characteristics, agricultural activity, land tenure, social capital, asset ownership, financial psychological stress, financial charges, transport charges and income. To achieve consistency of answers, control questions were included in the questionnaire. In addition, the enumerators were carefully trained to use other questions in the collection tool to deal with cases of inconsistencies in responses.

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 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.

### 2.1.1 Measurement: Analytical Techniques

To effectively address the first two objectives of this study, the Heckman two-stage selection model was used. As mentioned above, 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 discrete; 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 1.3

#### *Heckman Two-Stage Equation*

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 a mathematical expression of the Heckman two-stage model estimation;

#### **STAGE ONE: PROBIT MODEL**

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 discrete 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;

$$\begin{aligned}
 Y_i^* &= X_i' \beta + \mu_i & \mu_i &\sim N(0, \sigma^2) & i &= 1 \dots n & (1) \\
 Y_i &= Y_i^* & & & & & \\
 Y_i &= 0 & & & & & \text{otherwise}
 \end{aligned}$$

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  $i$ th 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  $i$ th household
- $Y_i^*$  = is an unobserved continuous latent variable assumed to determine the value of the cost to client households
- $\beta$  = vector of the coefficients of independent variables
- $\mu_i$  = 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:

$$Pr(Z_i = 1 | X_i, \beta) = \theta(Q(X_i, \beta)) + \varepsilon_i \quad (2)$$

or

$$Prob(Y_i = 1 | X_i) = \int_{-\infty}^{X_i' \beta} \Phi(t) dt = \Phi(X_i' \beta) \quad (3)$$

Where:

- $Y_i^*$  = is an indicator variable equal to unity for households that have access to credit financial services
- $\Phi(\cdot)$  = the standard normal distribution function
- $\beta_s$  = the parameters to be estimated,
- $X_s$  = 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:

$$Y_i^* + X_i' \beta + V_i \quad (4)$$

where:

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

Based on this assumption, it then follows that:

$$Y_i = 1 \text{ if } Y_i^* > 0 \text{ and } Y_i = 0 \text{ if } Y_i^* \leq 0 \quad (5)$$

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

$$Y_i = X_i' \beta + \varepsilon_i \quad (6)$$

where:

- $Y_i^*$  = is the probability of a household having access to financial services
- $X_i$  = is a vector of explanatory variables corresponding to the  $i$ th household's cost-to-client attributes
- $\varepsilon_i$  = the error term.

#### STAGE TWO: INVERSE MILLS RATIO

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

$$\lambda = \frac{\phi(Q(X_i, \beta))}{\Phi(X_i, \beta)} \quad (7)$$

where:

$\phi(\cdot)$  = 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)

$$E(Z_i | Y=1) = f(X_i' \beta) + \gamma \lambda + \mu_i \quad (8)$$

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,

$\beta$  = 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 9.

$$Z_i^* = X_i' \beta + \gamma \hat{\lambda} + \mu_i \tag{9}$$

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:

$$Z_i^* = X_i' \beta + \gamma \hat{\lambda} + \mu_i \tag{2.0}$$

where:

$Z_i$  = is the cost to client in accessing financial services

$X_i$  = 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

$\mu_i$  = error term.

Equation (4) and (9) will be jointly estimated using the Heckman two-stage procedure in STAGE ONE.

Model adapted from Berem et al. (2011)

### 3.0 Empirical Research

**Table 1:** Average Socio-Economic and Demography Characteristics of Households

Variables	All households (n = 236)	Households with credit access (n = 118)	Households without credit access (n = 118)	t-test
Education	8 (0.348)	10 (0.167)	6 (0.483)	0.82**
Land ownership	0.05	0.08	0.02	0.043**
Gender of household head	0.45 (0.036)	0.62 (0.041)	0.65 (0.073)	0.31 <sup>NS</sup>
Age of household head	43 (0.684)	44 (0.367)	56 (0.890)	4.1 <sup>NS</sup>

Standard Error of the means are in parentheses \*\*significant at 95 % level of confidence <sup>NS</sup> Not significant

#### Household Socio—Economic and Demographic Characteristics

Individuals' participation in rural credit market is largely dependent on economic and demographic characteristics such as marital status, land ownership (title land), gender and educational attainment. These characteristics are important as they have a bearing on household's demand for credit services, this is owing to the fact the assessment of client's creditworthiness is based on such factors. Table 1 above presents household socio economic and demographic characteristics. 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. Cultivated Land size (own and rented) of respondents households varied between 0.5 to 16 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. Years of schooling completed by the household head was used as measure of education level. The average years of schooling completed of 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. Results from Table 1 indicate that there is no significant between the gender of household head and age for households with access to credit services financial services and those without at 95 percent confidence level. However the results revealed that there was a significance at 95 percent confidence level of land ownership and education for households the results having access to credit financial services and those without. Results from the gender analysis imply that male-headed households have more access to credit than female-headed households due to their capacity for having more tangible collateral base than women. This age variance may be attributed to financial service provider most lending to economically active group as this group gets credit for productive purposes. The results show these access groups were actively involved in economic activities

**Table 2:** 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*	-0.37	3.09	0.04**
TRCcosts	1.24	-2.38	0.02**
(Psychp)	-0.14	-0.84	0.04**
LPF	0.02	-0.06	0.06 *
OPCL	0.07	-2.66	0.09 *
Mills Lambda	0.11	2.98	0.03**
Lambda	0.07		
Rho	1.00		
Sigma	0.11		

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

Source: Survey data, 2013.

All nine variables entered into the regression analysis 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), efficiency in time to be served by financial provider (ETscosts), total direct fees (TDfeescosts), and social and cultural network (SCcosts). All variables had the expected sign as hypothesised in theory (Table 2), which is supported by economic theory. The model shows results of the effect of the cost-to-client construct as described in Figure 1 on the amount spent in accessing credit services (overall cost to client) from a financial institution. The results of the econometric analysis show 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 cost of time spent travelling (OPcosts), total direct fees (TDfeescosts), total regulatory and compliance costs (TRCcosts), and 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 terms of credit, Total Regulatory and Compliance Costs (TRCcosts) 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 time, 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. The effects of these significant variables on the dependent variable are discussed below. 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 positively and significantly at 5 % level. 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. This variable was positive for households that belonged to social and cultural networks, which incurred less cost in accessing credit products. 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. This variable was negative and significant at 5 % in influencing the costs incurred by the clients to access credit products. A one percent increase in interest fees 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 increase 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

### 3.1.1 Limitations

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 earlier. 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 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.

### 3.1.2 Implications

The implications of the research findings, as highlighted above, 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 Figure 1 above. Government and other stakeholders must work together to ensure that available financial services are appropriate and affordable for the rural market, both for individuals and enterprises.

### 3.1.3 Future Research

Lastly, an area of research not covered by this study, which is essential to better understand rural financial markets, is the analysis of the cost to serve incurred by the financial service providers in delivering the services to rural inhabitants

## References

- Ahmed, U. (1989). Effective costs of rural loans in Bangladesh. *World Development* 17(3): 357–363.
- Beastlier, T. (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 February 2000.
- Beck T, la Torre (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.
- 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.
- 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. Department of Agricultural Economics and Agribusiness Management, Egerton University, P.O. Box 536, 20115 Egerton, Kenya
- 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](http://www.brown.edu/.../brown.edu.../seasonality_%20paper_11-26-01_0.pdf)
- Calmeadow, M (1996). A Canadian experiment in sustainable micro-finance. Online at [www.com/pdf/metrofund.pdf](http://www.com/pdf/metrofund.pdf) [Accessed 1 March 2013].
- Central Statistical Office (2010). Census Report. Lusaka: CSO.
- CGAP (2012). Financial inclusion and stability: What does research show? <https://www.cgap.org/.../CGAP-Brief-Financial-Inclusion-and-Stability>
- CGAP (2010). The state of financial inclusion through the crisis financial access 2010. <https://www.cgap.org>
- Coetzee, G. (2004). Rural finance Working Paper: 2002–04, Department of Agricultural Economics, Extension and Rural Development University of Pretoria. Available at [ageconsearch.umn.edu/bitstream/18036/1/wp020010.pdf](http://ageconsearch.umn.edu/bitstream/18036/1/wp020010.pdf) [Accessed 14 November 2012].
- 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](http://www.up.ac.za). [Accessed 14 February 2013].
- Coetzee, Grant (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.
- Cooper H. (1998). *Synthesizing Research: A Guide for Literature Reviews*, 3rd edn. Thousand Oaks, CA: Sage Publications. Cooper (1998),
- Diagne, A and M. Zeller (2001). Access to credit and its impacts on Welfare in Malawi Research Report No 116 Washington D.C International Food Policy Research Institute.
- Egwuatu, B. (2008). Reducing poverty through better credit delivery: The Asian experience. *CBN*. 8–14.
- Eisenhardt, K.M. (1988). Agency-and-Institutional-theory explanations: The case of retail sales compensation. *The Academy of Management Journal*, 31(3):488–511. Available at <http://www.jstor.org/stable/256457> [Accessed 6 December 2012].
- Field, E., Rohini P., John P, Y. Jeanette P (2012) Repayment Flexibility Can Reduce Financial Stress: A Randomized Control Trial with Microfinance Clients in India .*PLoS ONE* 7(9):e45679.doi: 10.1371/journal.pone.0045679
- Finscope Zambia (2009). Presentation of top line findings. Available at [www.boz.zm/FSDP/Zambia\\_report\\_Final.pdf](http://www.boz.zm/FSDP/Zambia_report_Final.pdf) [Accessed 12<sup>December</sup> 2012].
- Getz, C, Gianakopoulos, 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. Available at



- <http://search.proquest.com.innopac.up.ac.za/docview/199332406/fulltextPDF/137F5954F307B8D0A73/1?accountid=14717> [Accessed 19 April 2013].
- Goldsmith, R. W. (1969). *Financial structure and development*. New Haven, CT: Yale University Press.
- Heckman, J. (1979). Sample selection bias as a specification error. *Econometrica* 47: 153–161.
- Jensen, M. and Meckling, H. (1969). Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure. *Journal of Financial Economics*, October 1976, 3(4): 305–360.
- Johnston and Murdoch, J (2007). The unbanked: Evidence from Indonesia. [www.nyudri.org/wp-content/uploads/2011/10/unbanked.pdf](http://www.nyudri.org/wp-content/uploads/2011/10/unbanked.pdf)
- Levine, R. (1997). Financial development and economic growth: views and agenda. *Journal of Economic Literature*, 35(2):688-726: <http://0-web.ebscohost.com.innopac.up.ac.za/ehost/pdfviewer/pdfviewer?sid=ac14ce5c-24f9-48e6-92b9-d3ee526711da%40sessionmgr114&vid=1&hid=108> [Accessed 31 January 2012].
- Mabula, T.Kankasa (2012). How can government promote financial inclusion for woman: The Zambian Case Second African Women's Economic Summit, Lagos, Nigeria: 13–14 July 2012.
- 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](http://www.emeraldinsight.com/0007-070X.htm) [Accessed 3 April 2013].
- Sults, M (2003). Banking sector development and credit constrained households in Estonia.
- Stiglitz, J E. (1987) Principal and agent, *The New Palgrave: A Dictionary of Economics*, v. 3, pp. 966–971.
- United Nations Development Program (2013). Human Development index [r.undp.org/sites/default/files/reports/14/hdr2013\\_en\\_complete.pdf](http://r.undp.org/sites/default/files/reports/14/hdr2013_en_complete.pdf)
- United Nations (2006). *Building inclusive financial sectors for development*. New York: UN Publications.
- World Bank (2012). [www.worldbank.org/financailinclusion](http://www.worldbank.org/financailinclusion)
- Zeller, M. (1994). Determinants of credit rationing. A study of informal lenders and formal credit groups in Madagascar *World Development* 22(12): 1895–1907

**Derick Ndimbwa** is a programme officer at United Nations World Food Programme Zambia Country office working on Rural Resilience initiative that support financial inclusion model for rural inhabitants Derick holds a Bachelor and Master degree in Agricultural Economics from University of Zambia , Zambia and University of Pretoria, South Africa ( with a bias forwards Agricultural and Rural Finance ) and currently a Ph.D. Candidate of Economics at University of Witwatersands , South Africa

**Prof Gerhard Coetzee** leads Customer & Provider Solutions at CGAP, working on customer centric business models, financial innovations for smallholder families and digital financial products and services beyond payments. He is Extraordinary Professor at the University of Stellenbosch Business School. Previously Gerhard was Head of Inclusive Banking at Absa Bank, the founder and Director of the Centre for Inclusive Banking in Africa and Professor in Agricultural Economics at the University of Pretoria. He is published widely and has worked in several countries, the majority in Africa. Gerhard holds a PhD in Agricultural Economics from the University of Pretoria, South Africa

**Prof Johann Kirsten** Director at Bureau for Economic Research (BER) at Stellenbosch University He is a scholar of international stature, an experienced academic leader and a participant in national policy at the highest level. Prof Kirsten led Department of Agricultural Economics at university of Pretoria for over 19 years and has made a solid contribution to agricultural and economic questions on the African continent .Gerhard holds a PhD in Agricultural Economics from the University of Pretoria, South Africa